COMMUNITY HEALTH NEEDS ASSESSMENT

Children’s of Mississippi

University of Mississippi Medical Center

Acknowledgements

We wish to thank members of the community who participated in the focus groups, key informant interviews, completed surveys, and provided other valuable contributions to the 2019 Community Health Needs Assessment for Children's of Mississippi.

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Introduction

Children's of Mississippi includes a children's hospital at the University of Mississippi Medical Center (UMMC), located in Jackson, Mississippi. UMMC is the only academic medical center in Mississippi and its mission is to improve the lives of Mississippians by educating tomorrow's health-care professionals; conducting cutting edge basic, clinical and population health research; and providing comprehensive patient care. A major focus undergirding these mission areas is the elimination of differences in citizens based on race, geography, income, social status, and other demographic factors. The faculty, staff, and trainees at UMMC strive to pursue and share knowledge and keep our communities healthy with our commitment to superior care.

UMMC is a thriving health sciences campus with nearly 3,000 students enrolled in 28 programs offered in seven professional schools: Medicine, Nursing, Dentistry, Health Related Professions, Graduate studies, Pharmacy and Population Health. The medical center is the sole provider in Mississippi for baccalaureate and professional degrees in disciplines such as medical, dental, physical therapy, occupational therapy, dental hygiene and population health. Nearly 600 residents and fellows receive graduate medical training at UMMC. The medical center also provides continuing health professional education for practicing healthcare professionals in order to promote lifelong learning, expand knowledge and improve the skills necessary for the provision of quality health care in the state.

Children's of Mississippi

Children's of Mississippi is the only medical facility in the state devoted exclusively to the care and treatment of sick and injured children and adolescents. The hospital has a wide range of expertise that comes from multidisciplinary teams of pediatric specialists. Children's (also known as Batson Children's Hospital) strives to maintain a child-friendly approach to health care and work to make it a place where kids can still be kids. This hospital offers the chance not only to heal, but also for children to play, learn and grow.

Children's averages 9,000 admissions a year and nearly 150,000 children are treated in its clinics and emergency room annually. Patients come from all of Mississippi's 82 counties to receive comprehensive medical care for health concerns ranging from common childhood illnesses to serious injuries or chronic diseases. Children's of Mississippi provides care in more than 30 specialty areas, including newborn medicine, pediatric cardiology, neurology, and surgery. It houses the state's only pediatric intensive care unit and emergency department along with Mississippi's only pediatric treatment programs for cancer, cystic fibrosis, sickle cell anemia, and congenital heart defects.

When Batson Children's Hospital opened its doors in 1997, pediatric surgery shared surgical facilities with the adult hospital on the campus of UMMC. This required young patients to be transported across campus for their surgical needs, which meant being separated from their families during procedures and pre- and post-operative periods. In 2002, UMMC added pediatric surgical suites, a two-story addition atop the hospital, which houses inpatient and outpatient surgical areas, a gastroenterology/pulmonary lab, and a pediatric dental clinic. These facilities allow patients to receive the procedures they need without leaving the hospital.

Today, the 15,600-square-foot Eli Manning Children's Clinics are a critical component of healthcare delivery for more than 75,000 Mississippi children. General pediatricians work alongside pediatric specialists in the clinics to provide kid-focused care, including well-child visits, a vaccination program and acute care in orthopedics, cardiology, and endocrinology. In addition, the Mississippi Children's Cancer Center at the Batson Children's Hospital is the only center in the state providing comprehensive care for children with cancer or blood-related diseases. The Cancer Center has cared for more than 1,500 children with cancer and is currently following 800 children with cancer, including those receiving therapy and those being monitored after completing therapy. Completed in 1991 and made possible by the

fundraising efforts of the Junior League of Jackson, the 17,750 square-foot Cancer Center is designed to provide outpatient care needs for children with cancer, sickle cell, and other blood diseases.

In 2017, Children's expanded its clinical footprint with two major initiatives. First, Children's established a presence on the Gulf Coast with a practice location in Gulfport, Mississippi and a collaborative agreement with Gulfport Memorial Hospital to assume management of its neonatal intensive care unit. The second major initiative launched in 2017 was the commencement of construction of a new 340,000-square-foot state-of-the-art pediatric hospital and renovations to existing spaces. Plans for this expansion included 88 private patient rooms, a children's heart center, a neonatal intensive care unit and a pediatric intensive care unit that includes an imaging center, operating rooms and 32 private rooms for intensive care patients and their families. Fall 2020 is the target completion date.

Future Children's of Hospital

The new 340,000 square-foot Children's hospital is scheduled to open in Fall 2020.

Clinical Care for Parents and Other Adults

Children's provides services to children and adolescents and UMMC provides clinical services to parents and other adults throughout Mississippi in each of its 82 counties. UMMC's patient care programs include five hospitals and University Physicians, the state's largest medical group comprised of approximately 500 providers representing more than 125 specialties. This medical group has a number of clinics throughout the Jackson metropolitan area and University Physicians providers see approximately 600,000 patients each year. The largest location, University Physicians Pavilion, features 16 clinics within one location and is equipped with a full-service laboratory and pharmacy. A variety of services are provided including: radiology, including mammography and MRI; cardiology testing, including echocardiograms and cardiac stress testing; and physical therapy. Bone marrow aspirations, lumber punctures, endoscopy and minor surgical procedures are also performed in the Pavilion.

UMMC is also Mississippi's only Level 1 trauma hospital, the only Level 4 neonatal intensive care nursery, and offers the only organ transplant programs in the state along with a number of referral services. The medical center has recently expanded to include two community hospitals, UMMC Holmes County and UMMC Grenada. UMMC is the largest diagnostic, treatment and referral care system in the state. The medical center has a total of 722 beds that accommodate approximately 27,000 hospital stays annually. The UMMC emergency department and clinics have more than 418,000 outpatient and emergency visits every year. A brief description of several of the UMMC campus locations are provided below and their locations are indicated on the map shown on page 9 (Figure 1).

University Hospital

University Hospital is the teaching hospitals for all University of Mississippi Medical Center education programs and a 722-bed diagnostic and treatment referral center for the entire state. Medical staffs are appointed from the Schools of Medicine and Dentistry.

Conerly Critical Care Hospital

An intensive care hospital links the adult hospital, the emergency department and the operating and surgical suites. It includes Coronary Intensive Care, Neuro Intensive Care, Medical Intensive Care, Surgical Intensive Care and Bone Marrow Transplant Unit for children and adults.

Wiser Hospital for Women and Infants

The comprehensive hospital for women and infants is a six-story contemporary structure with 160 beds. The hospital offers tertiary health services for women throughout their life cycle and for newborns in the first few months of life.

UP Pavilion

The University Physicians Pavilion is a free-standing clinic arranged in a mall design to provide delivery of outpatient health care. All basic services are under one roof.

Jackson Medical Mall

Most of UMMC's medical specialties are represented with clinics at the mall. Services include radiology, a cardiopulmonary rehab center, diabetes education center, dialysis unit and ACT tobacco cessation program as well as the Cancer Institute.

UMMC Presence Across the State

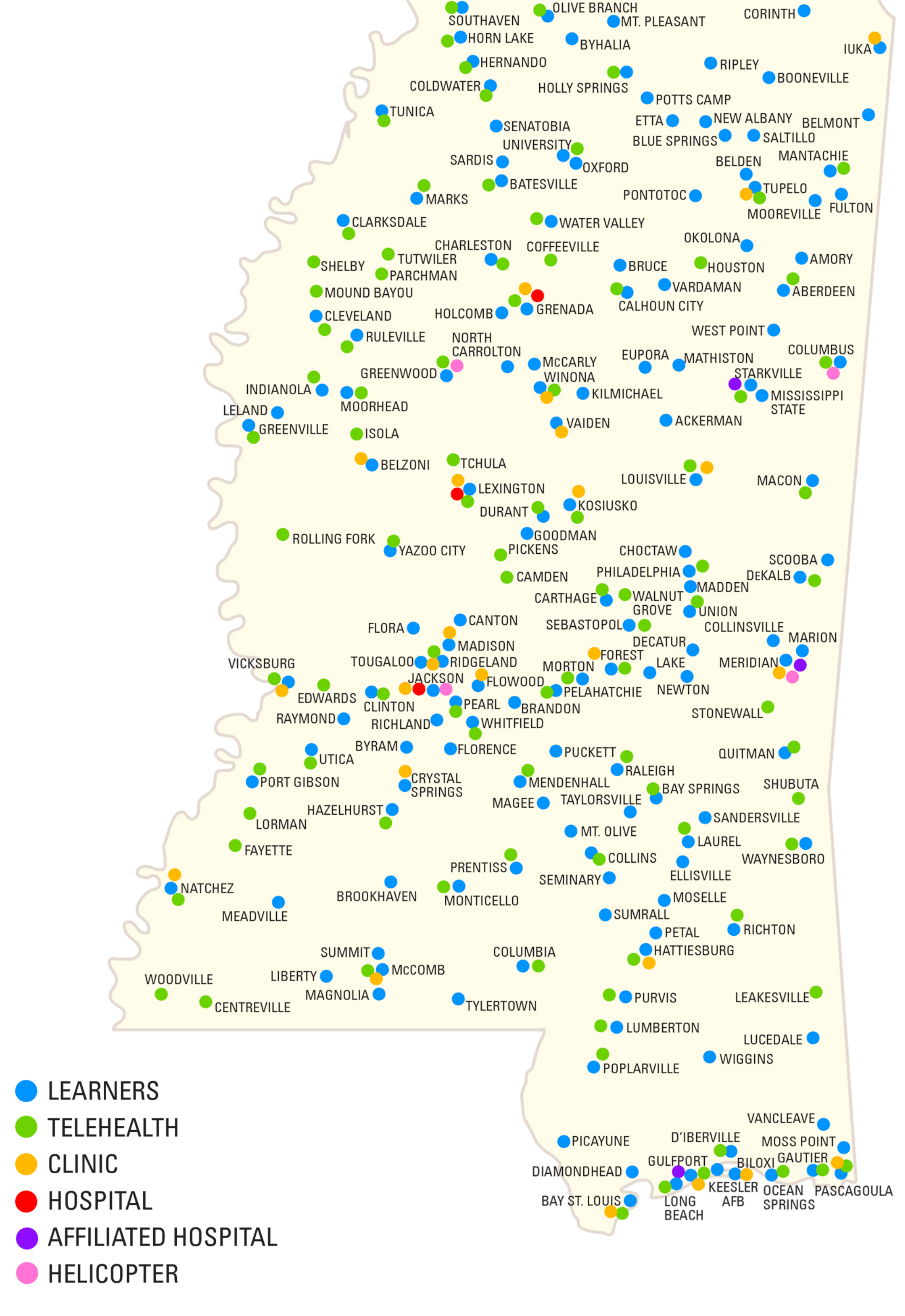


Figure 1. Locations of UMMC Hospitals

Mississippi Profile

Mississippi was recognized as state of the United States in 1817. It is bordered on the east by Alabama, the west by the Mississippi River, the north by Tennessee, and the south by Louisiana and the Gulf of Mexico. Mississippi is classified as rural state and it has 82 counties. The demographic and health profile of the Mississippi described in the following paragraphs are drawn from data presented in two recent reports: *FY 2018 Mississippi State Health Plan* and *Building a Healthier Mississippi from the Ground Up*. These state-level publications report data obtained from the MSDH Office of Vital Statistics, the Behavioral Risk Factor Surveillance System (BRFSS), the Youth Risk Behavior Surveillance System (YRBSS), the United States Census Bureau, the Centers for Disease Control and Prevention, and other sources.

Population Characteristics

Mississippi has an area approximately 48,000 square miles with a north-south length of 350 miles and an east-west width of 180 miles. Mississippi is the 32nd largest state in the United States. Mississippi had an estimated population of 2,986,530 in 2018,(1) which is an approximate 0.65 percent increase since the 2010 U.S. Census.(2) The population growth rate is much lower than the national average rate of 5.96% and rates 44th in the nation.(2) Jackson is the state capital and Mississippi's largest city with approximately 170,393 residents.(3) Between 1990 and 2017, Mississippi's youth population decreased by -3% (-20,093).(4) In 2017, there were 772,716 children ages 0 to 18 living in Mississippi.(5) There were 37,357 children born in Mississippi in 2017.(6)

Age

In 2017, there were 190,855 children between 0 to 5 years of age; 204,574 children between 5 to 9 years of age; 206,966 10 to 14 years of age; and 212,377 15 to 19 years of age.(5)

Race and Ethnicity

In 2017, 372,716 (52.1%) can be classified as non-Hispanic White and 308,748 (42.7%) are classified as non-Hispanic Black or African American.[7] The remaining 5.2% of the child population in Mississippi is divided among Asian (5,784), American Indian/Alaska Natives (3,615), some other race (7,953) and belonging to two or more races (20,245).[7] Approximately 4.3% (31,091) of children in Mississippi of any race report being of Hispanic or Latino origin groups.[7]

Sex

In 2017, there were 370,832 (51%) males and 355,469 (49%) females who were between the ages of 0 and 19.[8]

Sociodemographic Profile

According to the National Center for Children in Poverty[9], the federal poverty threshold was $24,339 for a family of four with two children in 2016. Children living in families with incomes below the federal poverty threshold are referred to as poor. In Mississippi, 31% (224,940) of Mississippi children lived in poverty in 2016[10]; whereas, the national average of children living in poverty is 19%.[11] According the United Health Foundation's American's Health Rankings 2018 Report, Mississippi ranks 49th for children in poverty.[12]

Persistent Poverty

According to the U.S. Census Bureau's American Community Survey (ACS), in 2016 nearly 20% (14,115,713) of children were living in poverty, compared to 18% in 2007 (13, 097,006). In fact, the share of children living in poverty in the U.S. remains higher that it was before the Great Recession. Child poverty rates are highest in the South and Southwest, particularly in counties with concentrations of Native Americans and those who reside along the Mississippi Delta. Further, according to the ACS, children in poverty tend to live in rural

(nonmetro) counties – many with persistently high poverty – that were hit hard by the recession. Figure 2 illustrates the counties with persistent poverty in Mississippi. Lastly, 13 of the rural counties with extreme child poverty in the U.S. are in Mississippi (Figure 3); Issaquena County has the highest rate in the state (69%).[13]

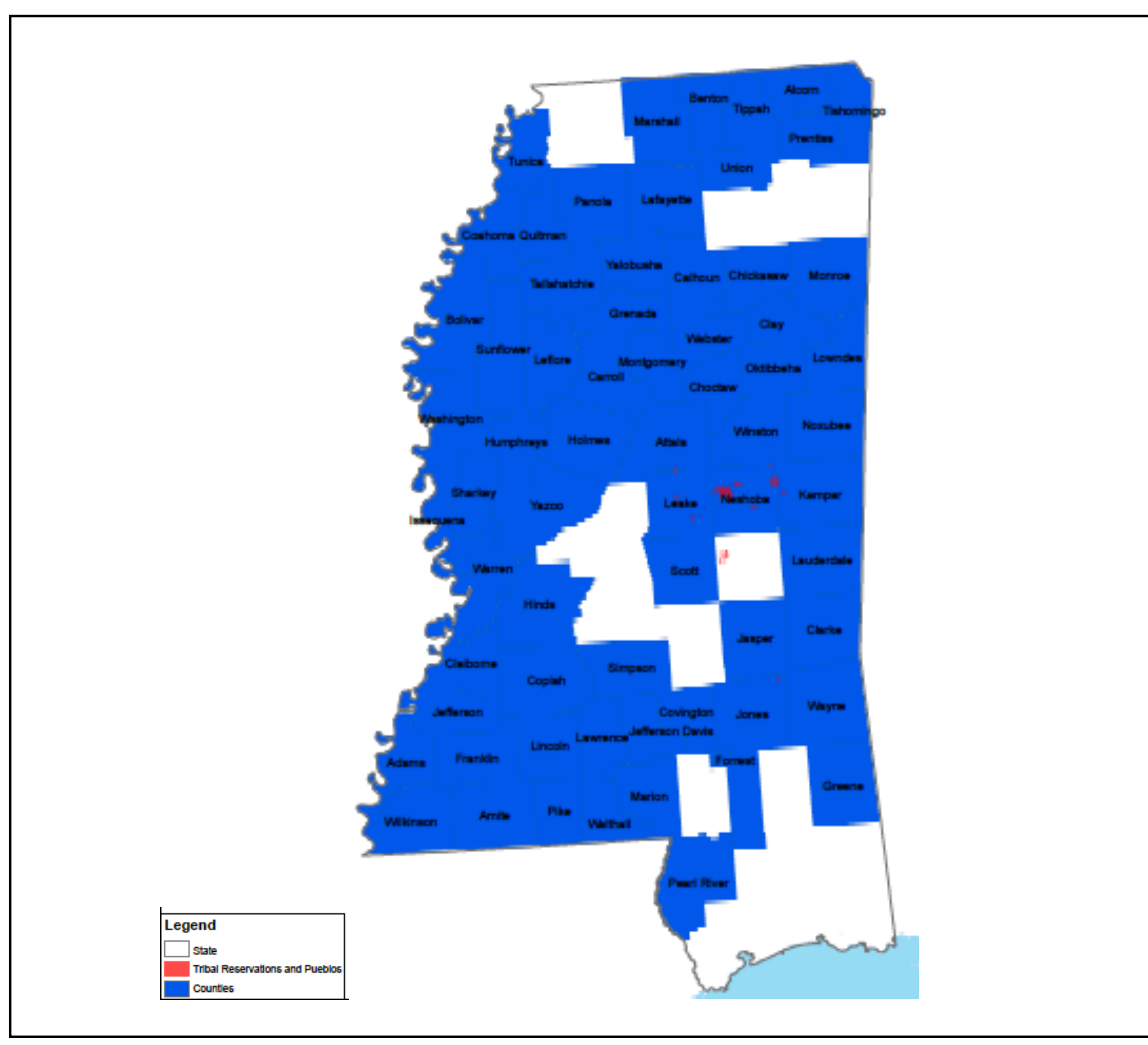


Figure 2. Mississippi Persistent Poverty Counties with overlay of Native American Reservations

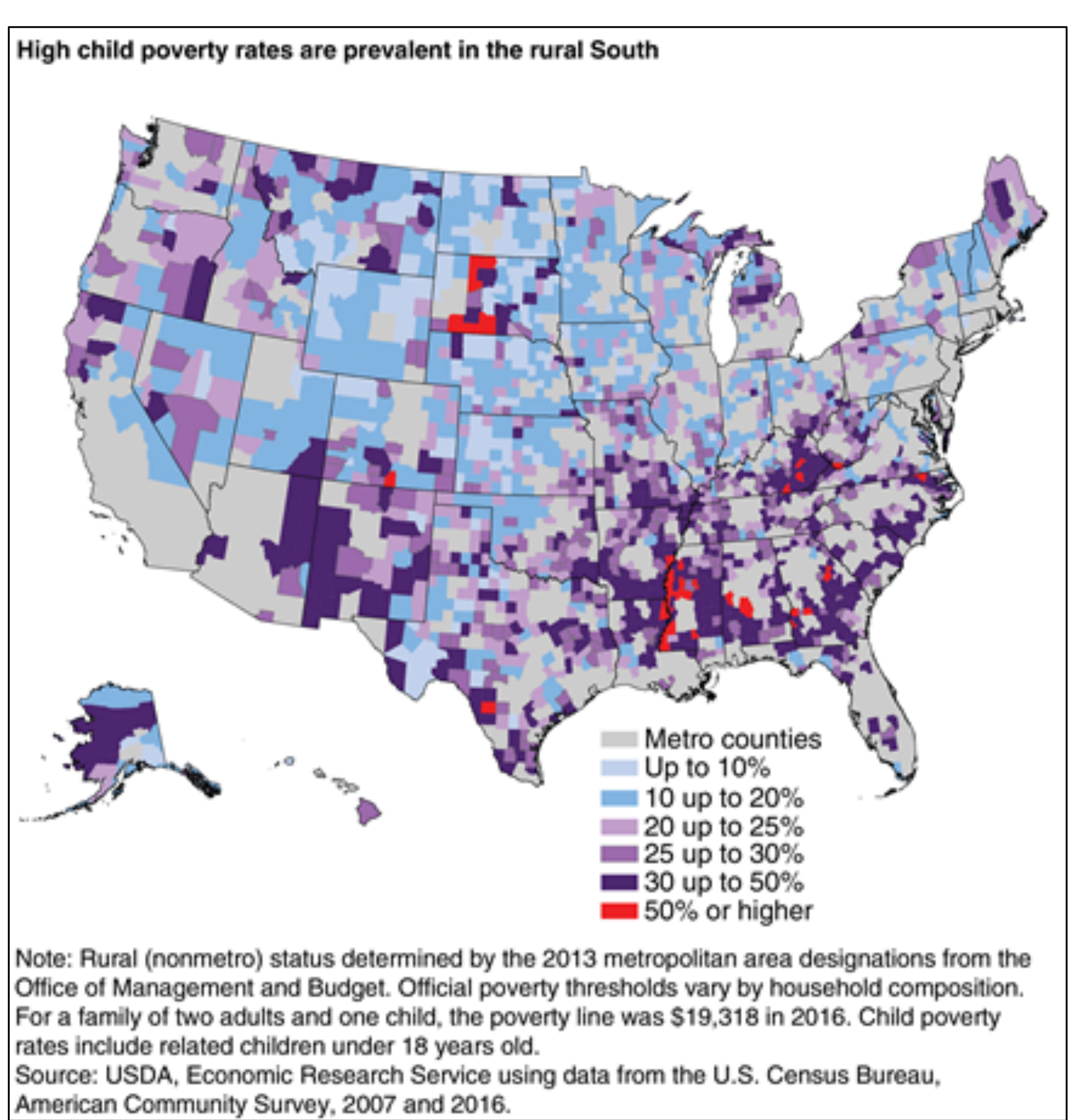


Figure 3. High Child Poverty Rates in the United States

Maternal and Child Health

Natality

Data reported in the *FY 2018 Mississippi State Health Plan* indicates there were 37,928 live births in 2016. Of these, 51.2 percent (19,416) were white non-Hispanic, 41.8 percent (15,868) were black non-Hispanic, 2.6 percent (976) were other non-Hispanic and 4.4 percent (1,665) were Hispanic. Most of these births (97.8%) occurred in hospitals under the care of an

attending physician and more than 99 percent of the live births occurred to women 15 to 44 years of age. The birth rate in 2016 was 12.7 live births per 1,000 population; the fertility rate was 63.5 live births per 1,000 women aged 15-44 years.

Mississippi reported 401 fetal deaths in 2016. The black fetal death ratio, which is the number of deaths per live births to mothers in the specified age group, was more than two times that of whites, with a ratio of 16.7 per 1,000 live births compared to 6.0 for whites. Mothers aged 40 and older, had the highest fetal death ratio at 38.8 per 1,000 live births, followed by mothers aged, 24-29 with a ratio of 11.9. There were 14 maternal deaths reported during 2016. Maternal mortality refers to deaths resulting from complications of pregnancies, childbirth, or the puerperium within 42 days of delivery.

Infant Mortality

Infant mortality remains a concern in Mississippi as the rate of infant deaths per 1,000 live birth is 8.6 which exceeds the national average (5.6 per 1,000 live births). The infant mortality rate for African Americans in Mississippi (11.5 per 1,000 live births) doubles the national average. Many factors contribute to Mississippi's high infant mortality rate including: a high incidence of preterm birth, teenage pregnancy, low birthweight, lack of education, socioeconomic status, lack of access for planned delivery services, and lack of adequate perinatal and acute medical care. According to data reported in the *FY 2018 Mississippi State Health Plan*, over three out of four births in 2016 (77.1%) were associated with "at risk" mothers. “At risk" factors include mothers who are and/or have:

- under 17 years of age or above 35 years of age;
- unmarried;
- completed fewer than eight years of school;
- had fewer than five prenatal visits;
- begun prenatal care in the third trimester;
- had previous terminations of pregnancy; and/or
- a short inter-pregnancy interval (prior delivery within 11 months of conception for the current pregnancy).

The following map (Figure 4) depicts the infant mortality rate by county of residence from 2012-2016.

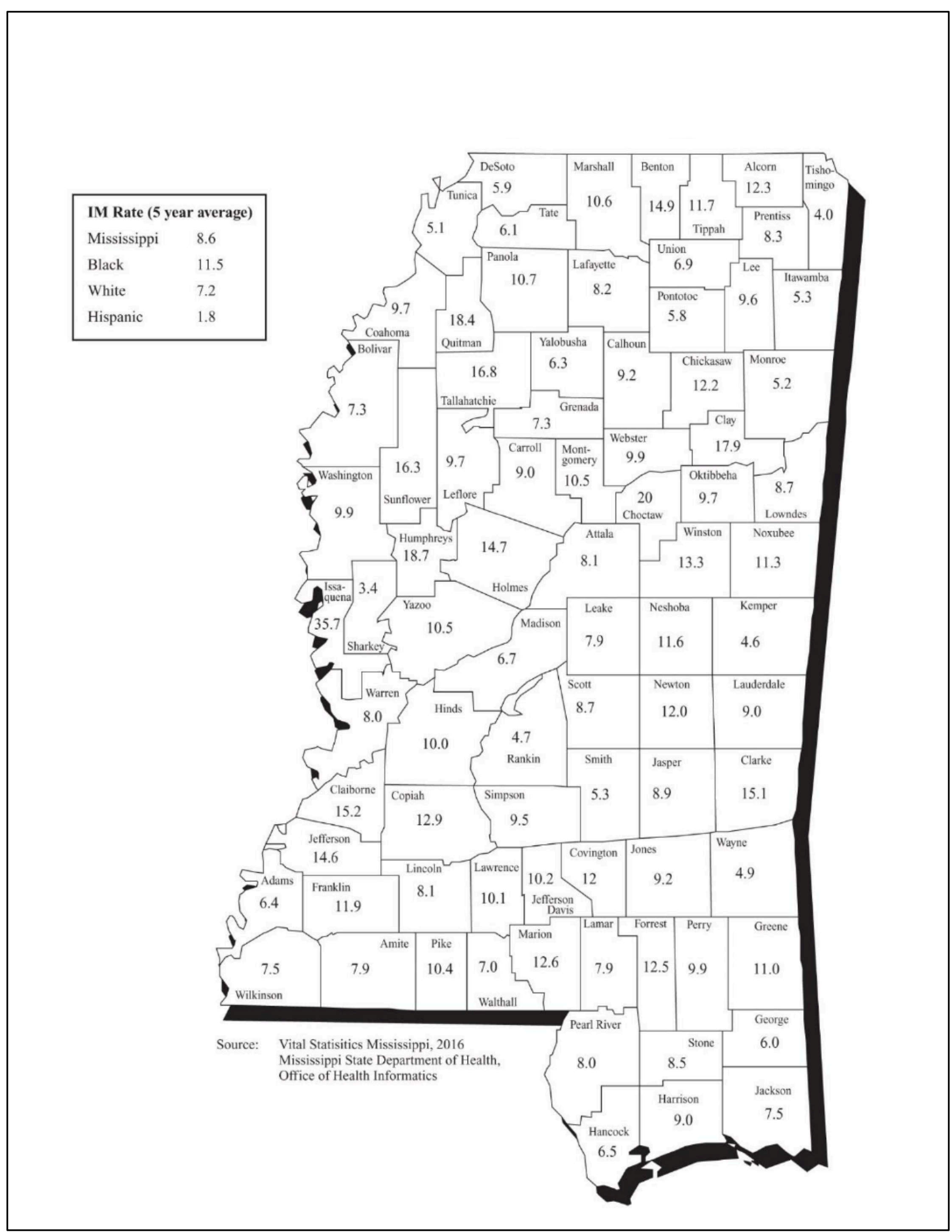


Figure 4. Infant Mortality Rates by County of Residence, 2012-2016 (5 year average).

Mental Health

A healthy mental state is essential for overall health and wellness. Poor mental health includes stress, depression and other emotional problems that can prevent someone from effectively engaging daily activities like school, work, recreation and personal care. Occasional down days are normal, but persistent mental or emotional health problems should be evaluated by a qualified professional. The prevalence of mental illness is difficult to assess because the negative social stigma associated with the term "mental illness" prevents individuals from seeking treatment or even reporting diagnosis. Using complex methodology updated by federal agencies including the Center of Mental Health Services and U. S. Bureau of the Census, it has been estimated that prevalence of serious mental illness among adults in Mississippi is approximately 5.4% (119,434). During Fiscal Year 2017, 63,207 adults received mental health services through 14 community mental health clinics and state psychiatric hospitals.

Mental Health Needs of Children/Adolescents

There are no data available that provide precise estimates of the size of the country's population of children and adolescents with emotional or mental disorders. The nation's authority, the National Institute of Mental Health, uses complex statistical methodology to account for socioeconomic differences across states and finds that the prevalence of any mental disorder among U. S. adolescents, aged thirteen (13) to eighteen (18), is approximately 49.5 percent with an estimated 22.2 percent having a severe impairment. In Fiscal Year 2017, the public community mental health system in Mississippi served 34,795 children and adolescents with serious emotional disturbance. (Note: Totals might include some duplication across community mental health centers and other nonprofit programs).

Child/Adolescent Psychiatric Services

There are ten (10) facilities, with a total of 330 licensed beds that provide acute psychiatric inpatient services for children and adolescents in Mississippi. Figure 5 shows the

location of inpatient facilities that serve adolescent acute psychiatric patients. The Mississippi State Legislature has placed a moratorium on the approval of new Medicaid-certified child/adolescent beds within the state. The Department of Mental Health operates a sixty (60) bed facility (Oak Circle Center) at Mississippi State Hospital to provide short-term inpatient psychiatric treatment for children and adolescents between 4-17 years of age. East Mississippi State Hospital operates a fifty (50) bed psychiatric and chemical dependency treatment unit for adolescent males.

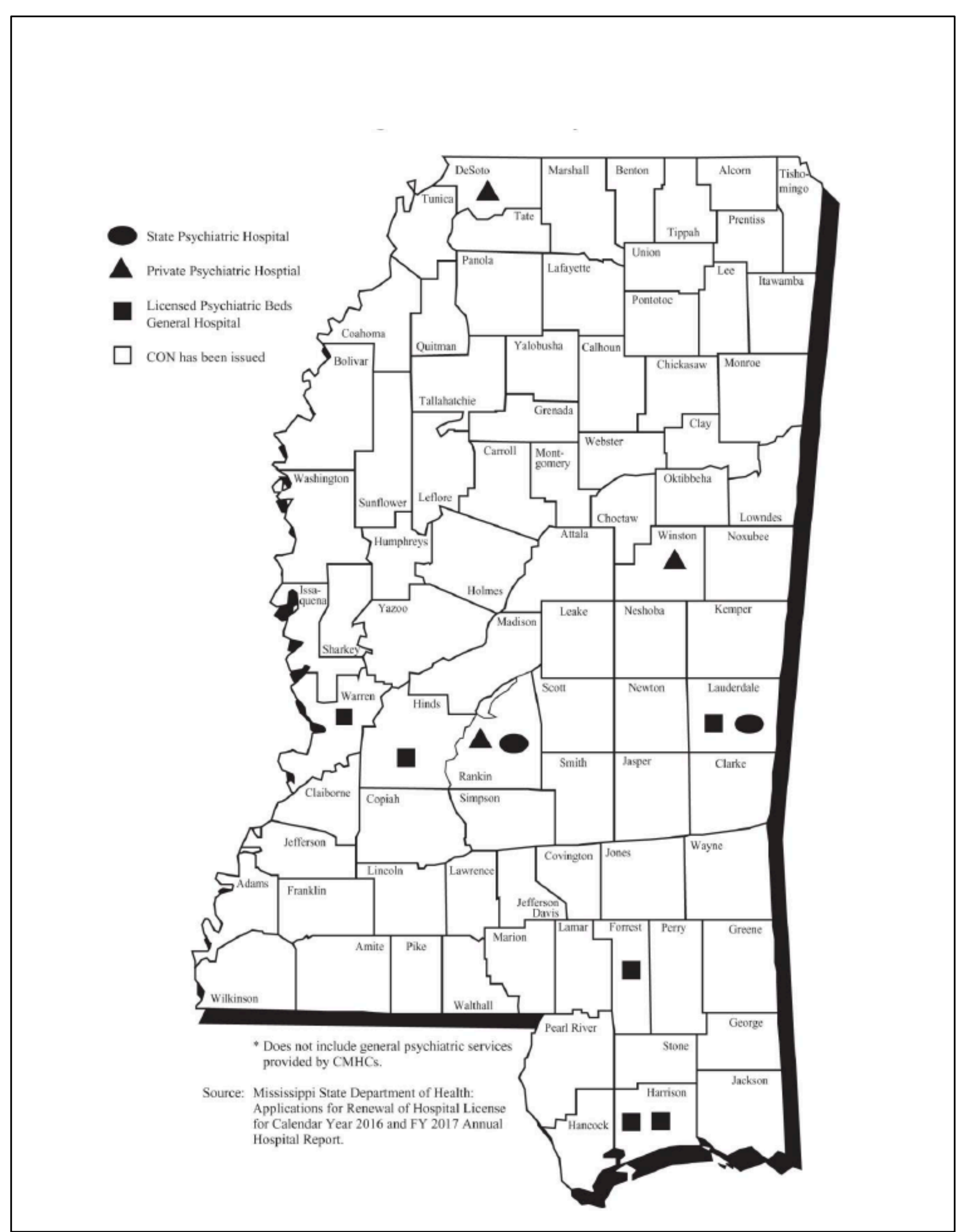


Figure 5. Operational and Proposed Inpatient Facilities Serving Adolescent Acute Psychiatric Patients in Mississippi.

Community Health Needs Assessment Methodology

The Patient Protection and Affordable Care Act (PPACA), enacted March 23, 2010, is a federal statute designed to drive better health outcomes, reduce the costs of healthcare, and improve practices among hospitals and primary physicians. The act includes the requirement that nonprofit hospitals conduct a community health needs assessment (CHNA) every three years. This requirement provides an opportunity for hospital organizations, numerous governmental public health agencies, and additional stakeholders to gather data that can be used to identify community needs and to inform strategies to address them. The purpose of this report is to present results associated with the CHNA for our community. The framework used to guide Batson Children's Hospital through the CHNA process was based on an adaptation of the Association for Community Health Improvement's Assessment Process Map below.[14]

Consistent with the requirements of the ACA, qualitative and quantitative methods were utilized to collect primary data regarding perceive community health needs regarding adults in the catchment area served by Batson Children's Hospital, which includes all of Mississippi. Data for this report were drawn from a community health needs assessment conducted throughout Mississippi. Extant data were drawn from the Mississippi KIDS COUNT 2019 Fact Book, National KIDS COUNT Indicators, and the Children's Defense Fund Children State of the Children in Mississippi 2017 Factsheet.

Secondary Data Sources

To describe and priorities the health priorities for children in Mississippi, we considered measures and statistics from the 2018 Mississippi State Health Plan (2nd Ed.), the 2019 Mississippi County Health Rankings profile, and the 2019 Mississippi KIDS COUNT Fact Book. Each source is described below and is available online for public access and are included as an appendix to this report. Data and findings from these reports were compiled and synthesized and are described collectively in the results section of this report.

Mississippi State Health Plan

The Mississippi State Department of Health (MSDH) is responsible for developing and publishing the *Mississippi State Health Plan* (Mississippi Code 1972, Section 41-7-171 et seq.). The plan uses data from the Office of Licensure and Certification, the Annual Hospital Reports, and the Report of Institutions for the Aged or Infirmed to identify and plan for meeting Mississippi's priority health needs. The 2018 *Mississippi State Health Plan (2nd Ed.)* identified perinatal care and mental health as health priorities including child.

Mississippi County Health Rankings

The County Health Rankings uses data from a variety of existing sources (e.g., US Census; CDC Wonder) to create and report on measures of health to help counties understand how healthy residents are and how long they will live. The goal is for communities to use the Rankings in support of improving health initiatives among elected officials, health care providers, community organizations, business leaders, policymakers, and the public. The annual Rankings report, ranks measures of *health outcomes* (premature death; poor or fair health; poor physical health days; poor mental health days; low birthweight) and *health factors* including health behaviors (e.g., teen births, physical inactivity), clinical care (e.g., uninsured, mental health providers), social and economic factors (e.g., high school graduation, children in poverty), and physical environment (e.g., severe housing problems). The Mississippi 2019 County Health Rankings profile reports the health ranking of 81 of the state's 82 counties (excluding Issaquena County).

Mississippi KIDS COUNT

Mississippi KIDS COUNT is a source of information on Mississippi's children, providing data and statistics about health, education, safety and well-being of children to policymakers, education, parents, caregivers and the public. Their role is to collect, analyze and maintain a comprehensive database of indicators, compile and disseminate Mississippi's annual Fact Book and periodically public issue briefs on current topics relating to the well-being of Mississippi children and families. Mississippi KIDS COUNT operates within the Family & Children Research Unit at the Social Science Research Center, Mississippi State University. Mississippi's 2019 KIDS COUNT Fact Book reports on child and family economic well-being, health, family and community health and education.

UProot Mississippi

In 2014 through 2016, the Mississippi State Department of Health conducted its first ever State Health Assessment and complied the outcomes to draft its first ever State Health Improvement Plan, *Building a Healthier Mississippi from the Ground Up*. Nine priority issues across three categories emerged from the results of the assessment. These categories and priority issues include:

- Address Social Determinants of Health
  - Reduce poverty
  - Increase educational attainment
- Strengthen Public Health Infrastructure
  - Create a culture of health
  - Improve access to care
  - Shared public health agenda
- Improve Health Status and Reduce Health Disparities
  - Improve mental health
  - Reduce rates of chronic disease
  - Improve sexual health
  - Improve infant health

The Mississippi State Department of Health used these outcomes to develop a State Health Improvement Plan to serve as a catalyst for moving diverse groups and sectors of the state toward a common health agenda by 2021.

Social Determinants of Health

Many youth in Mississippi fail to reach their full health potential and not all children and adolescents are equally affected by poor health and disease. Differences in pediatric health outcomes occur by sex, race and ethnicity, education, income and geographic location. The differences are in-part the result of deficiencies across the social determinants of child health, which include housing, education, transportation, food insecurity and much more. The social determinants of child health and disparities in child health outcomes are thus, important priorities for Mississippi.

2015-2019 Mississippi Consolidated Plans for Housing and Community Development

In 1994, the United Stated Department of Housing and Urban Development (HUD) issues new rules consolidating the planning, application, reporting and citizen participation processes for grant programs related to housing and community development known as, *Consolidated Plan for Housing and Community Development*. The *2015 – 2019 Mississippi Consolidated Plan for Housing and Community Development* has three goals to provide Mississippians with:

- Acceptable housing
- A suitable living environment
- Increased economic opportunities for the state’s low- and moderate-income residents.

The goals outlines in this plan have an impact on the conditions where our children live, learn and play by increasing the availability of permanent housing that is affordable to low- and moderate-income families without discrimination; improving neighborhood safety; reduce

isolation of income groups; creating jobs for parents; and empowering low income families to achieve self-sufficiency to reduce generational poverty in Mississippi.

Mississippi Transportation Infrastructure Report

Transportation infrastructure plays a vital role in connecting people, places and goods throughout Mississippi. The Mississippi Transportation Infrastructure Report, 2019 identified the critical need for funding to maintain and support Mississippi's infrastructure. In 2017, the American Society of Civil Engineers assessed Mississippi's overall transportation infrastructure and gave an overall rating of a C–. Meaning that there are significant deficiencies that need repair in our transportation system. Maintaining Mississippi's roadways, bridges, ports and rail system has important implication for the state's overall economy, which trickles down to impact communities, schools and families.

Feeding America Mind the Meal Gap 2017

Food insecurity is defined as a lack of access to enough food for an active, healthy life and limited or uncertain availability of nutritionally adequate foods. According to the *Feeding America Mind the Meal Gap*, 19.2% (573,610 people) of Mississippians were food insecure in 2017; well above the national rate of 12.5 In seven Mississippi Counties, the food insecurity rate was at or exceeded 30%. These Counties included Coahoma (30%), Leflore (30.4%), Humphreys (30.8%), Holmes (33.5%), Issaquena (32.1%), Claiborne (33.2%) and Jefferson (36.3%). Among children, one in six children (17%) lived in a food insecure household in the United States in 2017. In that same year, Mississippi was ranked 4th nationally for child food insecurity; 22.9% (163,530 children) of Mississippi's children lived in a food insecure household. Food insecurity impacts maternal and child (e.g., low birthweight infants) and poor child health and behavioral outcome at every age. Food insecurity remains a priority for Mississippi.

Primary Data Sources and Methods

Focus Groups and Interviews

Perspectives from Community Representatives

A total of ten (10) focus groups were conducted with external stakeholders at various health care clinics and community-based organizations. Each focus group contained 6-10 individuals, with a total of 88 participants.

Focus group participants were also asked to complete a brief survey requesting basic background information (e.g., gender, age, race, marital status, employment status, and level of education). Two UMMC staff members trained in qualitative data collection facilitated the focus group discussions. The focus group sessions were digitally recorded and transcribed verbatim. Two staff members read transcripts to code and catalogue key themes.

Focus Group Questions:

- What do you think are the four leading health issues for children in Mississippi?
- What can be done to prevent these health issues?
- What resources are available to help children to be healthy?
- What would a healthier version of your county [or Mississippi] look like in for children?
- What types of programs and initiatives could be implemented to improve community and children health?
- How can the Batson Children's Hospital better partner with you or your organization to improve the health of children in the community?
- [For health care providers] Do you see any barriers that prevent children/patients you serve from being healthier?

Community Representative Participants

The organizations represented at the focus group sessions included: Parents & Kids Magazine; Mississippi Children's Museum; Mississippi Urban League, Inc.; Washington County Opportunities, Inc.; and Children's Medical Group – Jackson (Table 1). Semi-structured interviews were conducted with external stakeholders at various health care clinics and community-based organizations, with a total of 36 participants. Interview participants identified the top five leading health issues in Mississippi for children as:

- Obesity
- Access to healthy foods
- Lack of physical activity
- Access to healthcare
- Mental health/emotional behavior

Table 1. Various Organizations Represented in Focus Groups
Boys and Girls Club of Central Mississippi
Children's Defense Fund
Mississippi Children's Home Services
Jack and Jill Foundation
Mississippi Low Income Child Care Initiative
Move To Learn
The Parents' Campaign
Extended Learning Solutions, LLC – Jackson Public Schools
Cleveland Youth Council
Jackson Hinds Library System
Women's Foundation of Mississippi
Well-Being Magazine
Action Communication and Education Reform, Inc.
Parents for Public Schools of Jackson
Developing Resources for Education in America (DREAM Inc.)

NOTE: Not all organizations are not listed due to interviewee's request for this information to remain confidential.

Parent Survey

Survey participants completed a self-administered questionnaire at various recruitment sites or online. The community health needs assessment survey was designed to learn more about the perceived health needs of children in communities throughout Mississippi. The survey consisted of items designed to measure self-reported behavioral, community, and sociocultural factors that may influence health. Demographic characteristics of the survey respondent and their child were also collected and included: sex, age, grade (level of education), and race. Survey data were collected from 795 parents in Mississippi. Participants were eligible if they were 18 years of age or older, a resident of Mississippi, and had at least one child between the ages of 0 and 17 living in the household. Figure 6 below depicts a map of Mississippi counties where survey respondents lived at the time of the survey.

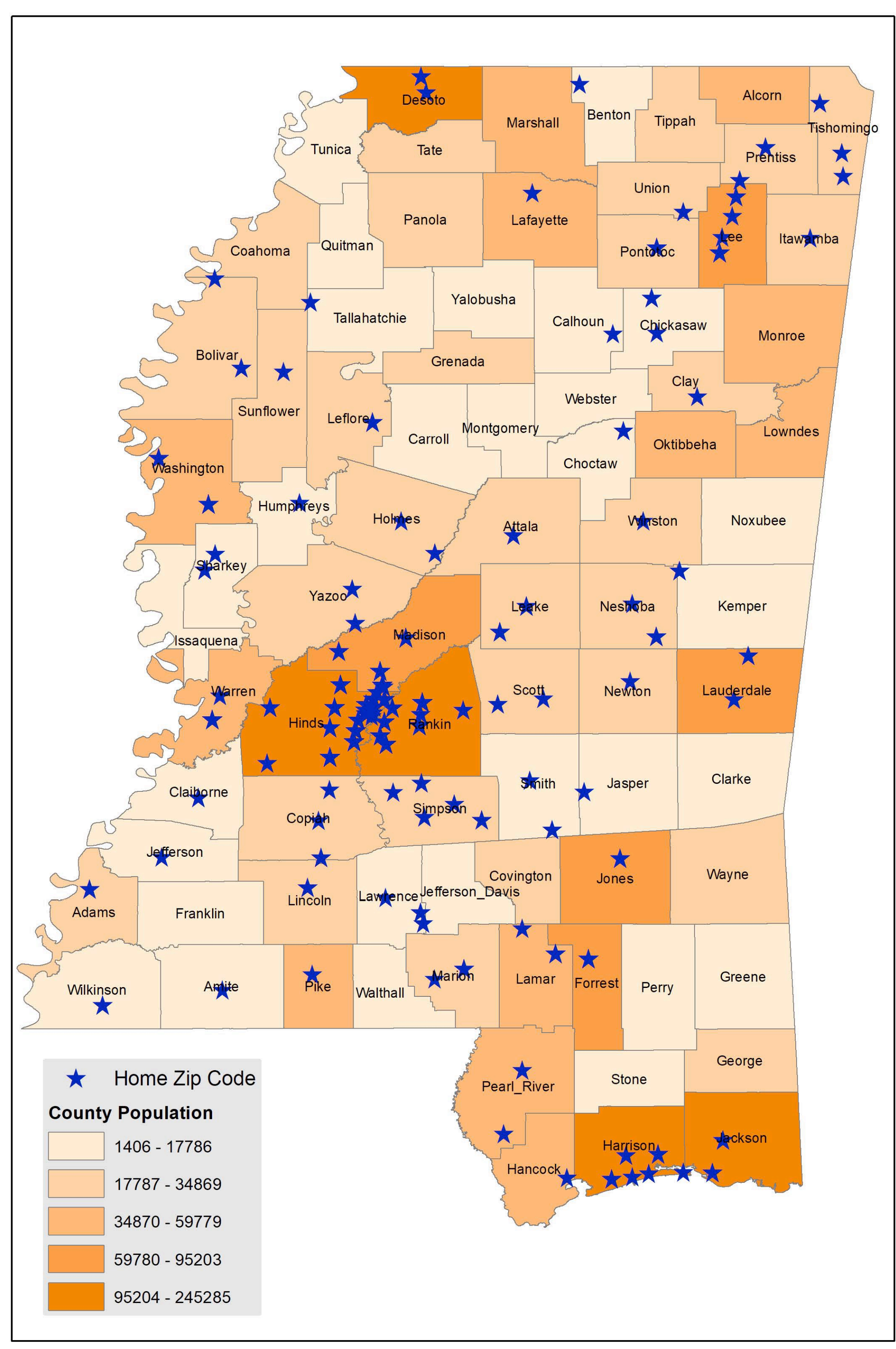


Figure 6. Map of Counties Represented in the CHNA Survey Data.

Identifying and Prioritizing Needs

Results

Secondary Data

Four child health needs emerged as priorities across three of the secondary data sources (Mississippi State Health Plan, 2018; Mississippi County Health Rankings, 2019; Mississippi KIDS COUNT Fact Book, 2019). The four prioritized child health needs in Mississippi include:

- Perinatal health
- Health care coverage and access to health care
- Mental health
- Obesity, including physical inactivity and food insecurity

Table 2 below is a cross-tabulation of each child health need and related indicators by each data source. Figure 7 and Figure 8 below depict maps of Mississippi's 2019 County Health Rankings health outcome sand health factors, respectively.

Table 2. Cross-Tabulation of Child Health Needs by Secondary Data Source			
Measure	**MS State Health Plan, 2018**	**MS County Health Rankings, 2019**	**MS KIDS COUNT Fact Book, 2019**
Perinatal health			
Infant mortality, per 1000 births	8.7 (2017)	9 (2011 - 2017)	
Low birthweight babies, %		12 (2011 – 2017)	11.5 (2016)
Teen births, per 1000 births	31 (2017)	38 (2011 – 2017)	33 (2016)
Prenatal care access by trimester, %, 2016			1st: 76% 2nd: 14.4% 3rd: 3.7%
Health care coverage and access to health care			
Uninsured children, %, 2016		5	5
No developmental screening, children <35 months, %, 2016 – 2017			81.4
Mental health, persons per every 1 mental health care provider, 2018		700:1	
Obesity and Health Behaviors			
Obesity (>95th percentile) youth 10 – 17 years, %, 2016 – 2017			31.5
Physical inactivity / access		Inadequate or no access to PA locations, 55% (2010 & 2018)	No days of physical activity, 13.3% (2016 – 2017; 12 – 17 years)
Food insecurity / food access	WIC (2018): Women - 20,479 Infants - 24,327 Children - 40,384	Limited access to healthy foods, 11% (2015)	Food insecure children, 24.4% (2016)

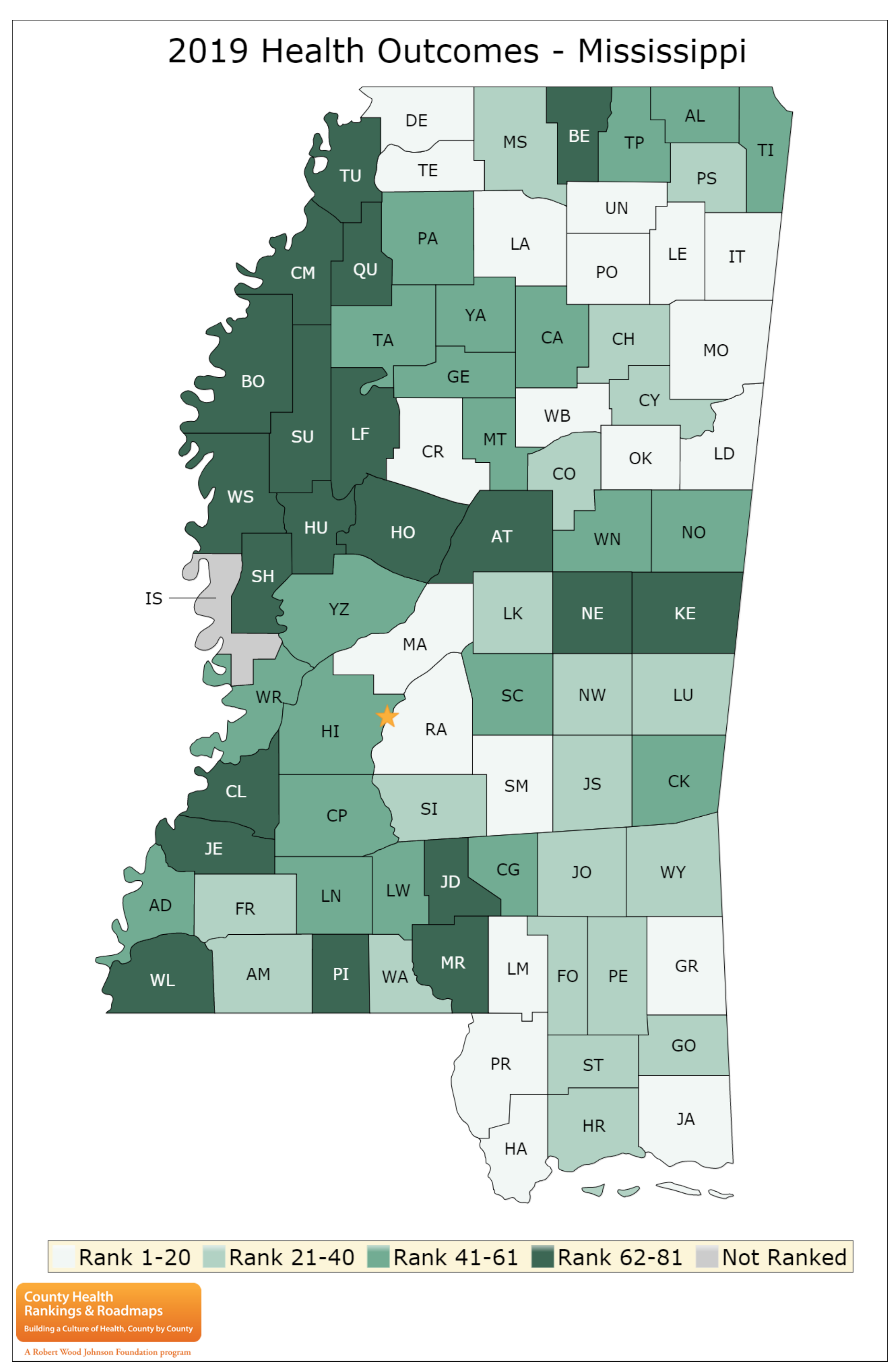


Figure 7. Mississippi 2019 County Health Rankings, Health Outcomes.

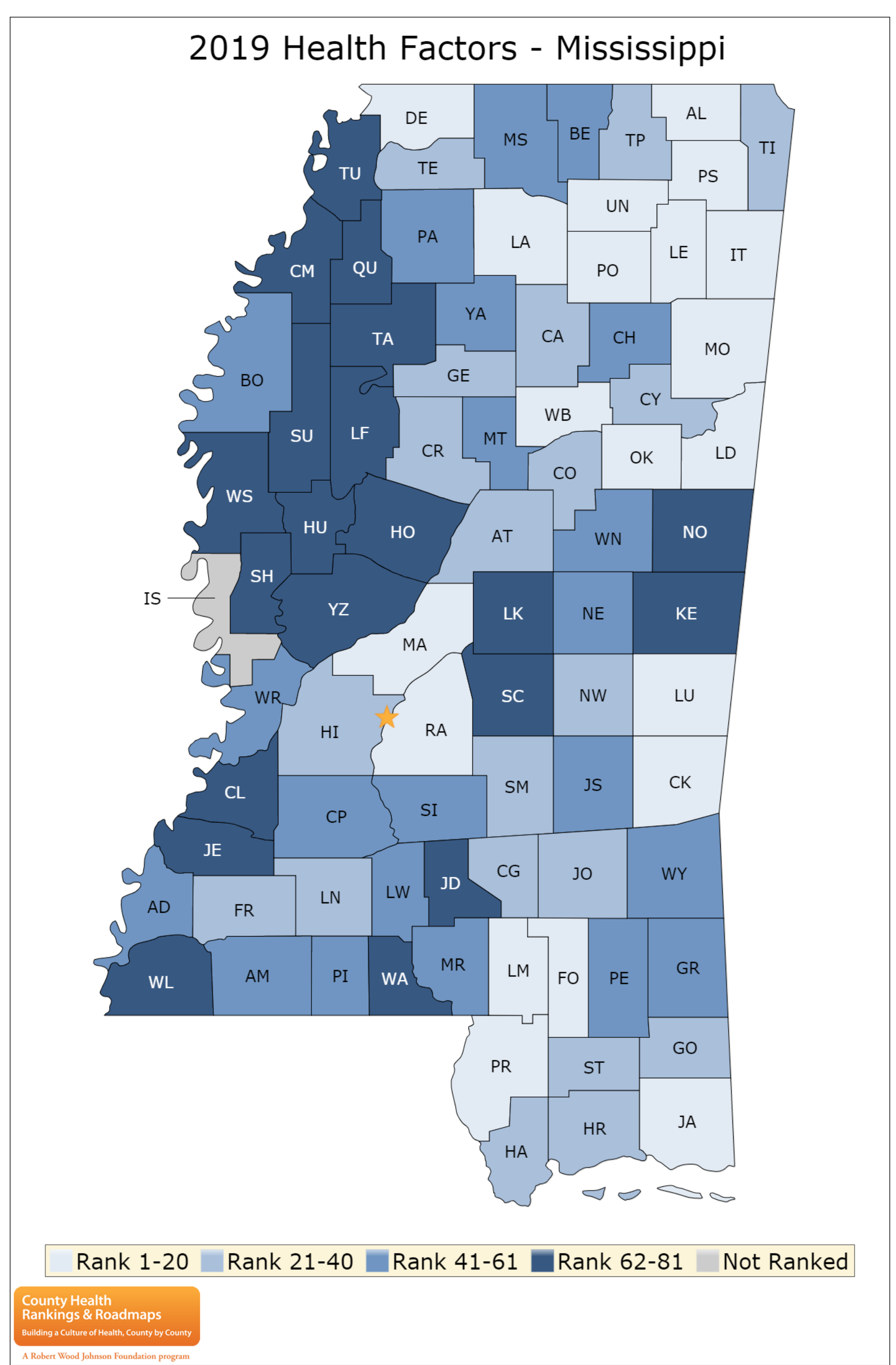


Figure 8. Mississippi 2019 County Health Rankings, Health Factors.

Primary Data

Focus Group and Interview Responses

What are the emerging issues or trends impacting the health and well-being of children in Mississippi?

Key Themes: There was a consensus in the majority of the factors that impact the health and well-being of children in Mississippi; however, the ranked order differed between focus group and interview participants. Focus group participants identified mental health, access to healthcare, and lack of parental knowledge as the top three health issues for children in Mississippi. Two other health issues raised by focus group respondents, obesity and access to healthy foods, were among the top three health issues highlighted by interview participants; lack of physical activity, access to healthcare and mental health were other important factors raised by interview participants.

What are the key barriers to child health and wellness?

Key Themes: The majority of respondents identified "lack of parental knowledge and understanding" and "lack of access to healthcare due to health insurance coverage" as barriers to overcome when preventing health issues among children in Mississippi. Some respondents discussed the necessity for parents to provide better modeling of healthy lifestyles for their children. Other respondents suggested that more parents should be aware of preventive care, insurance coverage, and assistance programs. For example, one participant stated, "Parents not having adequate resources to provide quality healthcare is a key barrier to child health and wellness. The desire to ignore issues such as depression and social emotional issues is also a barrier".

What strengths, resources, and assets support the well-being of children in our community?

Key Themes: A number of respondents suggested that there are more advocates, community programs, churches, and non-profit organizations for child health and parental education. While participants agreed that there are a number of community-based programs, public health clinics, and other resources already in place, the majority of respondents also agreed that it is imperative to ensure that parents and families are aware of such programs and assistance. One participant recommended, “We need more educational programs and for them to be more accessible. Make the programs occur during a time when parents can be available. Provide transportation for these resources”. The necessity for parental and family education programs on topics such as healthier living, healthy eating options, nutrition, financial assistance, and community resources were also noted.

The topic of mentorship was also discussed among participants. One individual stated that, “counselors, trainers, and health and wellness coaches for families to help families make improvements” would be beneficial to help Mississippi children to be healthy. Several participants indicated that grandparents are more involved with raising children now than in previous years, reiterating the importance of family connections and community support. One participant stated that, “mentorship from the elders” is a strength or resource to support the health and well-being of children.

Can you describe the types of programs and initiatives that could be implemented to improve community and children health?

Key Themes: Common responses among focus group and interview participants included mobile health screenings, financial and health literacy programs, nutrition and exercise programs, and mental health awareness programs. Despite the range of programs discussed, many implied that there are not enough programs or resources focused on child mental health or behavior problems. Several suggestions included “free mental health screenings”, “more outpatient mental health facilities”, and “more parent education as for

wellness and behavior modification". One participant cited that it is important to introduce, "A psychiatric facility for children. [There is] no child psychologist in the area. [We] constantly need to send children out-of-state due to needing in-patient resident help".

Access to healthcare remained a common theme the interviews and focus groups. While several participants communicated the lack of transportation to health services, others suggested "mobile clinics" and "mobile health fairs". Another common theme among participants was the need for increased involvement of the school system. Many respondents discussed ways that community-based organizations could develop a partnership with the schools by "[providing] mental health screenings" and "working proactively to have children remain healthy". One participant emphasized that we need, "more awareness on how school systems are connected to a healthcare facility that can help with any mental health needs".

In what ways can Mississippians address these child health issues in the future?

Key Themes: Three common themes among respondents included acknowledging the problems before implementing a solution, obtaining support from elected officials, and evaluating insurance plans and other policies to ensure access and understanding among families. Many respondents continued to emphasize the importance of increased availability of health education and preventive services, but others indicated that another needs assessment or gap analysis should be conducted before implementing new programs. One interview respondent suggested that, "[we] be more creative and proactive instead of doing the same thing we've done in the past".

A significant number of participants focused on support from elected officials and the allocation of funds. For example, three respondents suggested, "Political leaders need to get serious about improving the quality of life for all citizens", "[we need] more state and federal funding to provide resources for our families and children", and "elect public figures that change policies for the benefit of the community".

Many respondents placed emphasis on the community lacking knowledge or understanding of policies and programs. Two respondents suggested, "Eliminate so much paperwork for providers to receive Medicaid. This contributes to the patients not having access

to care if the providers do not accept Medicaid" and "look at insurance plans in the long run to make a difference to easier access". Another respondent stated, "We often say let's educate the parents, but when we educate and do not implement programs, it does not help. For example, Medicaid transportation does not help in emergent situations and requires 3 days' notice in advance to help patients get to their appointment".

Other responses to this question focused on ensuring access to health care services, programs, and education. Participants suggested that access to healthcare and programs should be made available to residents from lower socioeconomic backgrounds, underserved communities, and rural areas. A few respondents emphasized the need for specialists and satellite operations, especially in rural and underserved areas. Two unique responses to this question included, "If we get kids active as young as toddlers, it becomes a lifestyle for them" and "giving parents a resource guide if they have a child with special needs".

How can Children's of Mississippi better partner with you or your organization to improve the health of the community?

Key Themes: The responses for this question also varied greatly among participants. While many respondents emphasized the need to collaborate on providing health resources and education to the community, a significant number indicated the importance of developing other initiatives and programs to address child health issues. For example, responses to this question include, "have a partnership that includes transportation for children to get to Batson for appointments", "[develop a] partnership with fitness institutions to combat obesity", "place community members on the board in the hospital to improve outcomes in the community", "provide education to the staff and families on importance of preventive health care", "better way to make appointment for the family", and "open more satellite clinics throughout the state".

A few respondents noted that organizing and producing the funds for partnerships and programs is a concern. For example, one interview participant stated, "I think funding is a big issue for parenting classes, transportation for children to get to activities, doctor's

appointments, and mental health appointments”. Two respondents were enthusiastic about Children’s of Mississippi and said, “Children’s has a big voice” and “keep providing the excellent service that you do”.

In what ways is culture used as a resource to support health and well-being?

Key Themes: This question was asked in focus groups or interviews with health care providers. The majority of participants who responded to this question agreed that better health and trust can be demonstrated by awareness. For example, one respondent stated, “I think knowing about culture diversity and being aware. If the communities could be aware of other cultures in Mississippi”.

How do social determinants of health and experience of trauma impact the health and well-being of children in our community?

Key Themes: This question was asked in focus groups or interviews with health care providers. The majority of respondents agreed that the social determinants of health often limit access to preventive services and healthcare. One focus group discussed several ways for how the social determinants of health can impact the health and well-being of children in Mississippi. Several responses include “limited resources for dieticians and restaurants near area to provide gluten free items”, “lack of resources in schools to deal with bullying, which is why there is so much suicide going on now”, “lack of impactful education seminars and videos in school”, and “no incentives in stores to lower prices and provide nutritional items”. One unique response to this question is that “medical staff is more scared of getting a lawsuit rather than being engaged and taking care of the child”.

In regard to trauma, several respondents discussed that when children experience traumatic events, they need mental health resources to help deal with their issues. One respondent indicated, “trauma affects us the rest of our lives, we need better mental health resources to deal as a child to help them become better adults and avoid criminal activity and or prevent suicide”. Another respondent stated, “when children experience trauma, if it is not

properly addressed, it hinders them as adults to properly cope. If you cannot cope as an adult, you cannot function as an adult very well. It's a cycle."

Parent Survey Responses

Survey respondents were asked to rate their child's health status as: "excellent", "very good", "good", "fair", or "poor" (Table 3). Only three parents (0.4%) rated their child's health as "poor" and only 3.4% of parents indicated that their child had "fair" health in 2019. Nearly eighty percent of parents (79.4%) indicated that their child had "excellent" or "very good health". According to the 2019 National KIDS COUNT, Mississippi ranked 47th in child health in 2019.[15] According to the Mississippi KIDS COUNT, in 2016 – 2017 11.9% of Mississippi parents did not rate their child's health as "excellent" or "very good". [15] In Mississippi, a great percent of White (91.5%) compared to Black (83.5%) parents rated their children as having "excellent" or "very good" health.[15]

Table 3. Health Status of Survey Children

Health Status	N (%)	N (%)
	2015	2019
Excellent	511 (70.9)	370 (46.2)
Very good	136 (18.9)	266 (33.2)
Good	73 (10.1)	135 (16.9)
Fair	1 (0.1)	27 (3.4)
Poor	--	3 (0.4)

Access to Health Care

The number of children in Mississippi without health insurance is 35,678 (5%).[15] In 2018, there were 88,491 children enrolled in the Children's Health Insurance Program (CHIP) and 422,523 children enrolled in Medicaid.[16] In our 2019 survey, parents were asked if their child was able to be seen by a physician when needed and nearly all of them (96.0%) indicated that their child could receive medical care if needed. Parents were also asked if there was a time during the past year that their child could

Table 4. Access to Health Care for Child Reported by Parents

Able to Be Seen by Doctor When Needed	N (%)
No	32 (4.0)
Yes	774 (96.0)
At Least One Time Not Able to Get Dental Care in Past 12 Months	
No	691 (86.5)
Yes	108 (13.5)
At Least One Time Not Able to Get Vision Care in Past 12 Months	
No	729 (91.5)
Yes	68 (8.5)
At Least One Time Not Able to Get Mental Health Care in Past 12 Months	
No	736 (92.8)
Yes	57 (7.2)

not receive dental, vision, or mental health care. Most parents indicated that their child had no barriers to receiving dental, vision, or mental health care. (Table 4).

Health Behaviors

Parents were asked to report about a number of child health behaviors. A majority of respondent indicate that their child exercises at least once a day (60.8%), eats three or more servings for fruits and vegetables (51.4%), has a physical each year (65.3%), visits a dentist (63.7%), is current on their immunizations (74.4%), gets at least 8 hours of sleep (60.9%) and wears a seat belt (65.9%). Other behaviors are reported in Table 5.

Table 5. Family Health Habits

Health Habit	N (%)
Child exercises 1 or more times per day.	496 (60.8)
Child eats 3 or more servings of fruits and vegetables per day (not including fruit juices).	419 (51.4)
Child uses sunscreen or protective clothing for planned time in the sun.	377 (46.2)
Child receives a flu shot each year.	397 (48.7)
Child has a physical each year.	533 (65.3)
Child visits a dentist each year.	520 (63.7)
Child gets enough sleep (8 hours or more) each night	497 (60.9)
Child is up to date on his/her shots	607 (74.4)
Child always uses a seat belt when in a car.	538 (65.9)
Child always uses a car seat or booster seat when in a car.	382 (46.8)
Child wears protective head gear when riding bicycles, skateboards, scooters, rollerblades, or ATVs.	247 (30.3)
None of the above.	29 (3.6)

Neighborhood Perceptions

Parents were asked to provide their perceptions about the areas in which they live (Table 6). Over eighty percent (86.7%) of respondent indicated that their neighbors were healthy and had access the healthy foods (86.5%). Public transportation was only available to less than one third of parent (31.2%) completing the survey.

Table 6. Neighborhood Characteristics Reported by Parents

Health Status of Neighbors	N (%)
Very Healthy	150 (19.1)
Healthy	531 (67.6)
Unhealthy	81 (10.3)
Very Unhealthy	23 (2.9)
Able to Get Healthy Foods	
Strongly Agree	308 (38.7)
Agree	380 (47.8)
Disagree	79 (9.9)
Strongly Disagree	28 (3.5)
Available Public Transportation	
Yes	247 (31.3)
No	456 (57.7)
Not Sure	87 (11.0)

Neighborhood Safety

Parents were asked how often they feel that their child was safe in the community or neighborhood of residence (Table 7). More than half (53.9%) reported that they always feel that their child is safe in their neighborhood in 2019. Over sixteen (16.7%) percent reported that they either sometimes or never feel that their child is safe in their neighborhood in 2019, nearly a four-fold increase from 2015.

Table 7. Parent's Perception of Neighborhood Safety

Neighborhood Safety	N (%) 2015	N (%) 2019
Always	498 (68.0)	426 (53.9)
Nearly always	200 (27.3)	233 (29.5)
Sometimes	23 (3.1)	101 (12.8)
Never	11 (1.5)	31 (3.9)

Child Bullying

Parents were asked if their child had experienced bullying in the past 12 months (Table 8). In 2019, almost seven of every 10 parents (69.5%) indicated that their child had not experienced bullying while 17.5% reported that their child had experienced some form of bullying. If parents reported that their child had experienced bullying, they were asked to specify the type of bullying experienced by their child. Verbal abuse was defined as the child's peers spreading mean rumors about the child or keeping the child out of a group. Physical abuse was defined as the child being hit or kicked. Cyber or electronic bullying was defined as the child being teased, humiliated, or threatened by email, cell phone, or text messages. The types of bullying experienced among those citing a bullying encounter are classified in Table 9. Among those who reported a bullying experience, more than half (67.9%) experienced verbal abuse from their peers in 2019.

Table 8. Child Experiences Bullying

Experiences Bullying	N (%)	N (%)
	2015	2019
Yes	99 (13.5)	140 (17.5)
No	563 (76.9)	557 (69.5)
Don't Know	69 (9.4)	105 (13.1)

Table 9. Types of Bullying

Types of Bullying	N (%)	N (%)
	2015	2019
Verbal abuse	65 (65.7)	95 (67.9)
Physical abuse	37 (37.4)	41 (29.3)
Cyber/electronic abuse	32 (32.3)	15 (10.7)

Characteristics of Children and Parents

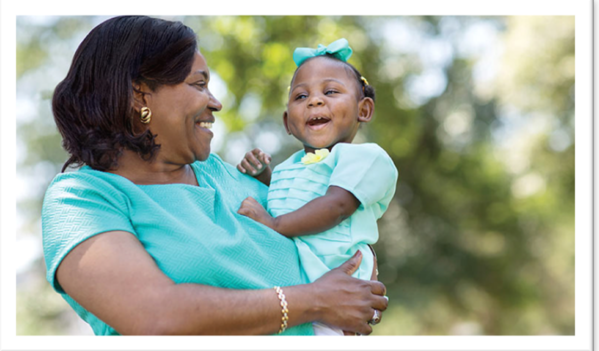
Respondents to the community health needs assessment were parents of children ages 0 to 17. The majority of the survey respondents' children were female (53.4%) and Black (65.0%) in 2019. A more complete demographic profile of children and their parents is presented in Table 10 and Table 11, respectively.

Table 10. Characteristics of Children Reported by Parents

Sex	N (%)	N (%)
	2015	2019
Female	374 (51.4)	429 (53.4)
Male	354 (48.6)	374 (46.6)
Age (years)		
0-2	178 (24.5)	175 (21.5)
3-5	134 (18.4)	149 (18.3)
6-8	120 (16.5)	190 (23.3)
9-12	150 (20.6)	163 (20.0)
13 or older	146 (20.1)	139(17.0)
Race or Ethnicity		
White	281 (38.4)	257 (31.5)
Black	360 (49.2)	530 (65.0)
Latino	48 (6.6)	15 (0.2)
American Indian	17 (2.3)	3 (0.4)
Asian	16 (2.2)	7 (0.9)
Hawaiian	10 (1.4)	1 (0.1)

Table 11. Characteristics of Parent Respondents, 2019

Income	N (%)
Less than $25,000	254 (31.4)
$25,000 - $49,999	204 (25.2)
$50,000 - $74,999	118 (14.6)
$75,000 - $99,999	91 (11.2)
$100,000 - $124,999	51 (6.3)
$125,000 - $149,999	33 (4.1)
$150,000 - $174,999	29 (3.6)
$175,000 - $199,999	13 (1.6)
$200,000 and up	17 (2.1)
Level of Education	
Some High School	23 (2.4)
High School Diploma	135 (16.6)
Some College	158 (19.4)
2-year Degree	122 (15.0)
Baccalaureate Degree	183 (22.5)
Graduate Degree	187 (23.0)
Marital Status	
Never Married	286 (35.1)
Currently Married	415 (51.0)
Separated	32 (3.9)
Divorced	64 (7.9)
Widowed	17 (2.1)



References

1. Annual Estimates of the Resident Population, 2018 Population Estimates, Table PEPANNRES: U.S. Census Bureau; [Available from: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF.
2. America Counts: States in South and West Growing the Fastest. US Census Bureau2018.
3. ACS Demographic and Housing Estimates, 2013 - 2017 American Community Survey 5-Year Estimates, Table DP05: US Census Bureau; [Available from: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF.
4. 2019 Kids Count Data Book: State Trends in Child Well-Being. The Annie E. Casey Foundation.
5. ACS Demographic and Housing Estimates 2013 - 2017, 5-Year Estimates, DP05: U.S. Census Bureau; [Available from: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF.
6. Martin JA, Hamilton BE, Osterman MJ, Driscoll AK, Mathews TJ. Births: Final Data for 2015. Natl Vital Stat Rep. 2017;66(1):1.
7. Children Characteristics 2013 - 2017, American Community Survey 5-Year Estimates, S0901: U.S. Census Bureau; [Available from: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF.
8. Age and Sex 2013 - 2017, American Community Survey 5-Year Estimates, S0101: U.S. Census Bureau; [Available from: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF.
9. National Center for Children in Poverty. The Condition of Education. 2015.
10. Mississippi Demographics of Poor Children, 2012 - 2016: National Center for Children in Poverty; [Available from: http://www.nccp.org/profiles/state_profile.php?state=MS&id=7.
11. United States Demographics of Poor Children, 2012 - 2016: National Center for Children in Poverty; [Available from: http://www.nccp.org/profiles/US_profile_7.html.
12. America's Health Rankings: A Call to Action for Individuals and Their Communities, Annual Report 2018. United Health Foundation.
13. T F. Child Poverty Heavily Concentrated in Rural Mississippi, Even More So Than Before the Great Depression 2018: United States Department of Agriculture, Economic Research Service; [Available from: https://www.ers.usda.gov/amber-waves/2018/july/child-poverty-heavily-concentrated-in-rural-mississippi-even-more-so-than-before-the-great-recession/.
14. Association for Community Health Improvement. Assessment Process Map 2012 [Available from: http://www.assesstoolkit.org.
15. Mississippi Kids Count [Available from: https://kidscount.ssrc.msstate.edu/.
16. Federal Fiscal Year 2018 Statistical Enrollment Data System Reporting. Centers for Medicare and Medicaid Services; 2018.

Appendices

Appendix A: Interview and Focus Group Guide

Focus Group Topic Guide
Community Health Needs Assessment
Children's of Mississippi

Questions:

1. What are the emerging issues or trends impacting the health and well-being of children in Mississippi?
   a. Probe: List the needs identified in the 2016 CHNA and discuss if these are still the leading needs.
   b. How has your community changed since the first CHNA in 2013?

2. What are the key barriers to child health and wellness?

3. What strengths, resources and assets support the well-being of children in our community?

4. Can you describe the types of programs and initiatives that could be implemented to improve community and children health?

5. What other resources are needed to support family health and well-being?

6. In what ways can Mississippians address these child health issues in the future?

7. How can Blair E. Batson Children's Hospital better partner with you or your organization to improve the health of the community?

8. Are there any other issues that we should discuss regarding child health issues in Mississippi?

Additional questions asked in focus groups/interviews with health care providers:

- In what ways is culture used as a resource to support health and well-being?
- How do social determinants of health and experience of trauma impact the health and well-being of children in our community?

That was the last question. Does anyone have any additional comments? Okay, I will end the recording.

Again, thank you for your time. You all have been very helpful. We do have a small thank you that we would like to give each of you.

Again, we are requesting your help with identifying potential focus group and interview participants. Please provide them with our contact number. Also, we are still collecting survey data. If you are willing to allow us to administer surveys at your organization, please meet with us before you leave.

Appendix B: Community Survey

COMMUNITY HEALTH NEEDS ASSESSMENT SURVEY

Children's of Mississippi – University of Mississippi Medical Center

Thank you for taking the time to complete this survey. This survey will assess information regarding the health needs of children in your community. Please respond to each item with an answer that represents your child the best. If you have more than one child between the ages of 0-17, please provide responses regarding your youngest child. The answers that you provide will remain anonymous. Please complete all questions in this survey.

Date: ___ ___ / ___ ___ / 20 ___ ___ (MM/DD/YYYY)

Question	Response
1. What is the ZIP Code where you live?	
2. What is the ZIP Code where you work?	
3. What best describes your employment?	a. Employed full-time b. Employed part-time c. Self-employed d. Not employed/looking for work e. Not employed/not looking for work f. Disabled and unable to work
4. What best describes your relationship status?	a. Single (never married) b. Married c. Separated d. Divorced e. Widowed
5. What is the highest level of school that you have completed?	a. Some high school b. High school diploma (or GED) c. Some college, but no degree d. 2 year college degree e. 4 year college degree f. Graduate level degree g. None of the above
6. What is your approximate average household income?	a. Less than $25,000 b. $25,000 - $49,999 c. $50,000 - $74,999 d. $75,000 - $99,999 e. $100,000 - $124,999 f. $125,000 - $149,999 g. $150,000 - $174,999 h. $175,000 - $199,999 i. $200,000 and up

Question	Response options
7. What is your child's sex?	a. Male b. Female
8. What is the age of your child (in years)?	
9. What grade in school is your child in?	
10. What is your child's race? (Select all that apply.)	a. White or Caucasian b. Black or African American c. Asian d. Native Hawaiian or other Pacific Islander e. American Indian or Alaska Native f. Middle Eastern or Arab g. Other (please specify): _______________
11. What is your child's ethnicity?	a. Hispanic or Latino b. Non-Hispanic or Non-Latino
12. Would you say that in general your child's health is excellent, very good, good, fair, or poor?	a. Excellent b. Very Good c. Good d. Fair e. Poor
13. What type of health care coverage does your child have?	a. Children's Health Insurance Program (CHIP) b. Medicaid c. Health insurance (Humana, Blue Cross, etc.) d. No health care coverage e. Other (please specify): _______________
14. Is your child able to be seen by a doctor when needed?	a. Yes b. No (*skip to question #16)*

15. Where do you take your child for health care?	a. Doctor's office b. Health department c. Emergency room d. Urgent care clinic e. Other (please specify): ___________________________
16. Why are you not able to take your child to a doctor or other health professional (pediatrician, specialist, nurse practitioner, or physician assistant) when needed? (Select all that apply.)	a. Cannot afford to pay b. Cannot take time off work c. No transportation d. Child is unwilling to go e. Cannot find health professional who accepts child's insurance f. Unable to get appointment g. No health insurance h. Don't know where to go i. Health plan problem/insurance will not cover it j. Not enough time k. Other (please specify): ____________
17. Was there a time during the last 12 months that you felt your child did not get the dental care he/she needed?	a. Yes b. No *(skip to question #19)*
18. Why did your child not receive the dental care needed? (Select all that apply.)	a. Cannot afford to pay b. Cannot take time off work c. No transportation d. Child is unwilling to go e. Unable to get appointment f. No dental insurance g. Don't know where to go h. Health plan problem/insurance will not cover it i. Not enough time j. Other (please specify):____________
19. Was there a time during the last 12 months that you felt your child did not get the vision care he/she needed?	a. Yes b. No *(skip to question #21)*

20. Why did your child not receive the vision care needed? (Select all that apply.)	a. Cannot afford to pay b. Cannot take time off work c. No transportation d. Child is unwilling to go e. Unable to get appointment f. No vision insurance g. Don't know where to go h. Health plan problem/insurance will not cover it i. Not enough time j. Other (please specify):___________
21. Was there a time during the last 12 months that you felt your child did not get the mental health care he/she needed?	a. Yes b. No (*skip to question #23*)
22. Why did your child not receive the mental health care needed? (Select all that apply.)	a. Cannot afford to pay b. Cannot take time off work c. No transportation d. Child is unwilling to go e. Cannot find mental health provider who accepts child's insurance f. Unable to get appointment g. Don't know where to go h. Health plan problem/insurance will not cover it i. Not enough time j. Other (please specify):___________
23. During the past 6 months, how often was your child unhappy, sad, or depressed?	a. Always (i.e., every day or most days of the week) b. Nearly always or often c. Sometimes, but not often enough for me to be worried d. Never
24. During the past 12 months, has your child experienced any bullying?	a. Yes b. No (*skip to question #26*) c. Don't know / Not sure (*skip to question #26*)

25. What type of bullying did your child experience? (Select all that apply.)	a. Verbal abuse (e.g., spreading mean rumors or kept out of a group) b. Physical abuse (e.g., being hit or kicked) c. Cyber or electronically bullied (e.g., teased, taunted, humiliated or threatened by email, cell phone, texts, social media, or other electronic methods) d. Other ________________________
26. Does your child have asthma?	a. Yes b. No (*skip to question #28*) c. Don't know / Not sure (*skip to question #28*)
27. Asthma attacks, sometimes called episodes, refer to periods of worsening asthma symptoms that make the child limit his/her activity more than usual, or make you seek medical care. During the past 12 months, did your child have an episode of asthma or an asthma attack?	a. Yes b. No
28. Select the health issues your child has faced. (Select all that apply.)	a. Allergies b. Autism c. Complications from birth-related health issues (e.g., low birthweight) d. Child abuse/child neglect e. Child is overweight f. Chronic/serious disease g. Dental issues beside cavities h. Diabetes/pre-diabetes i. Food insecurity (not enough to eat) j. Mental health k. Overweight or Obesity l. Sexually transmitted diseases m. Substance abuse n. Tobacco use o. Teen pregnancy p. Other: ____________________ q. None of the above

29. Overall, how would you rate the health of the people in the neighborhood where you live?	a. Very healthy b. Healthy c. Unhealthy d. Very unhealthy
30. I am able to get healthy foods in my neighborhood.	a. Strongly agree b. Agree c. Disagree d. Strongly disagree
31. How often do you feel your child is safe in your community or neighborhood?	a. Always b. Nearly always or most of the time c. Sometimes d. Never
Transportation The following questions are related to your transportation needs.	
32. What best describes the transportation you normally use to go places?	a. I have a car b. I use public transportation c. I take a taxi d. I use Uber or other ride-sharing services e. I have family or friends that take me places f. I do not normally have transportation
33. Is public transportation available within walking distance of your home?	a. Yes b. No c. Don't know / Not sure
34. How often do you need transportation but are unable to have it?	a. Never b. Rarely c. Occasionally d. Sometimes e. Always

Family's health habits The following questions are about your family's health habits. Please be honest – your answers are anonymous.	
35. Select all statements that apply to your child.	a. My child exercises at least 1 time per day (breaking a sweat). b. My child eats at least 3 servings of fruits and vegetables per day (not including fruit juices). c. My child uses sunscreen or protective clothing for planned time in the sun. d. My child receives a flu shot each year. e. My child has a physical each year. f. My child visits a dentist each year. g. My child gets enough sleep (8 hours or more) each night. h. My child is up-to-date on his/her shots. i. My child always uses a seat belt when in a car. j. My child always uses a car seat or booster seat when in a car. k. My child wears protective head gear when riding bicycles, skateboards, scooters, rollerblades, or ATVs. l. None of the above
36. Select all statements that apply to your child:	a. My child eats fast food, like McDonald's, Pizza Hut, or Sonic, at least once a week. b. My child drinks sugar-sweetened beverages, like sweet tea, Kool-aide, or pop, one or more times a day. c. My child eats salty and/or sweet snack foods (chips, candy, ice cream) 1 or more times per day. d. My child uses tobacco products, like cigarettes, cigars (including Black and Mild, or chewing tobacco. e. My child smokes marijuana. f. My child uses illegal drugs harder than marijuana (cocaine, meth, heroin, or others). g. My child use prescription drugs that are not theirs. h. My child consumes alcoholic beverages. i. My child engages in risky sexual behaviors. j. None of the above

Child's Health and School The following questions are related to schools in your area. Please be honest – your answers are anonymous.	
37. Where does your child attend school? (Select all that apply.)	a. My child is too young to attend school *(skip to end of survey)* b. Head Start Program c. Pre-K Program d. Public school e. Charter school f. Private school *g.* Home-school *(skip to end of survey)* h. Other (please specify): ________________________
38. Does your child have special needs?	a. Yes b. No (*skip to question #42*)
39. What are your child's special needs? (Select all that apply.)	a. Attention deficit/hyperactivity disorder (ADHD) b. Autism/pervasive development disorder (PDD) c. Blindness/visual impairment d. Cerebral palsy e. Deaf/hearing loss f. Developmental delay g. Down syndrome h. Emotional disturbance (i.e., depression, anxiety) i. Epilepsy j. Intellectual disability (may be referred to as mental retardation) k. Learning disabilities l. Speech and language impairments m. Spina bifida n. Traumatic brain injury o. Other (please specify): ___________________
40. (If applicable) I am satisfied with the special needs education services provided at my child's school.	a. Strongly agree b. Agree c. Neither agree nor disagree d. Disagree e. Strongly disagree

41. (If applicable) I am satisfied with how my school gives prescription drugs (related to his/her special needs) to my child.	a. Strongly agree b. Agree c. Neither agree nor disagree d. Disagree e. Strongly disagree f. My child does not take prescription drugs during the school day
42. Does your child regularly eat the lunches provided by the school cafeteria?	a. Yes b. No *(skip to question #44)* c. My child does not attend a school that offers lunches *(skip to question #45)*
43. Select all that apply about your child's school lunches.	a. School lunches are healthy. b. Students have enough time to get their lunches and eat before lunch break is over. c. School lunches taste good. d. None of the above
44. Why does your child not eat the school lunches? (Select all that apply.)	a. School lunches are not healthy. b. Students have to stand in line too long to get their lunches (not leaving enough time to eat during lunch break). c. My child prefers to eat lunches packed from home. d. My child does not like the taste of the food. e. Cannot afford lunch f. None of the above g. Other (please specify): ___________________
45. How many times has your child been absent this school year (2018-2019) because they were sick or had a health issue?	a. 0 days b. 1 – 2 days c. 3 – 4 days d. 5 days or more
46. How many times during this school year (2018-2019) has your child been sick but you had to send them to school anyway?	a. 0 days (my child has not attended school while sick) b. 1 – 2 days c. 3 – 4 days d. 5 days or more

Thank you for completing this survey!

Appendix C: Mississippi State Health Plan, 2018, (2nd Ed.)

FY 2018

MISSISSIPPI STATE HEALTH PLAN

Mississippi State Department of Health

PHIL BRYANT
GOVERNOR

November 14, 2018

Thomas Dobbs, M.D., M.P.H.
Interim State Health Officer
Mississippi Department of Health
P.O. Box 1700
Jackson, MS 39215

Dear Dr. Dobbs:

In accordance with the Mississippi Code Ann., Section 41-7-185(g), I hereby approve the FY 2018 Mississippi State Health Plan, Second Edition. The FY 2018 Mississippi State Health Plan, Second Edition, shall replace the current Plan, effective December 8, 2018.

I appreciate your, the members' of the State Board of Health, and all the employees at the Department's commitment and desire to improve health care for all Mississippians. The work you do to ensure that every Mississippian has adequate health care is crucial to the quality of life that I am committed to preserving.

Sincerely,

Phil Bryant
Governor

STATE OF MISSISSIPPI • OFFICE OF THE GOVERNOR
POST OFFICE BOX 139 • JACKSON, MISSISSIPPI 39205 • TELEPHONE: (601) 359-3150 • FAX: (601) 359-3741 • www.governorbryant.com

Governor
State of Mississippi

The Honorable Phil Bryant

Mississippi State Board of Health

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Acknowledgments

The Mississippi Department of Health, Division of Health Planning and Resource Development, prepared the *FY 2018 Mississippi State Health Plan (also State Health Plan or Plan)* in accordance with Sections 41-7-173(s) and 41-7-185(g) Mississippi Code 1972 Annotated, as amended.

The *FY 2018 State Health Plan* results from the comments and information supplied by various divisions of the Department of Health, other agencies of state government, health care provider associations, and interested members of the public. The *Plan* also reflects the direction and guidance of the Mississippi State Board of Health.

The Division of Health Planning and Resource Development expresses appreciation to the many individuals who provided invaluable help in publishing a timely and accurate *State Health Plan* and recognizes the following agencies for particular contributions:

Mississippi Department of Health
- Communications
- Health Information Management
- Print Shop
- Office of Health Protection
  - Preparedness and Response
  - Licensure
  - Communicable Disease
  - Environmental Health
- Office of Health Services
  - Child\Adolescent Health
  - Women's Health

Office of the Governor
Mississippi Department of Human Services
Mississippi Department of Mental Health
Mississippi Department of Rehabilitation Services
Mississippi Department of Education
University of Mississippi Medical Center
- School of Medicine
- School of Dentistry
- School of Health Related Professions

Board of Trustees of State Institutions of Higher Learning
Mississippi State Board of Medical Licensure
Mississippi State Board of Nursing
Mississippi Dental Association
Mississippi Nurses' Association

Numerous other organizations provided essential information. The Health Planning staff appreciates the cooperation and assistance of all who contributed to the *2018 Plan* and wishes that space permitted individual acknowledgment of each one.

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Title 15 - Mississippi Department of Health

Part VIII – Office of Health Policy and Planning

Subpart 90 – Planning and Resource Development

Chapter 1 Introduction

100 Legal Authority and Purpose

Section 41-7-171 et seq., Mississippi Code 1972 Annotated, as amended, established the Mississippi State Department of Health (MSDH) as the sole and official agency to administer and supervise all health planning responsibilities for the state, including development and publication of the *Mississippi State Health Plan.* The effective dates of the *Fiscal Year 2018 Mississippi State Health Plan, Second Edition* extend from November 10, 2018, through June 30, 2019, or until superseded by a later *Plan.*

The 2018 State Health Plan, Second Edition establishes criteria and standards for health-related activities which require Certificate of Need review in an effort to meet the priority health needs identified by the department. The priority health needs are as follows:

- Disease prevention, health protection, and health promotion;
- Health care for specific populations, such as mothers, babies, the elderly, the indigent, the uninsured, and minorities;
- Implementation of a statewide trauma system;
- Health needs of persons with mental illness, alcohol/drug abuse problems, mental retardation/developmental disabilities, and/or handicap;
- Availability of adequate health manpower throughout the state; and
- Enhance capacity for detention of a response to public health emergencies, including acts of bioterrorism.

Section 41-7-191, Mississippi Code of 1972 Annotated, as amended, requires Certificate of Need (CON) approval for the establishment, relocation, or expansion of health care facilities. The statute also requires CON approval for the acquisition or control of major medical equipment and for the change of ownership of defined health care facilities unless the facilities meet specific requirements.

This *Plan* provides the service-specific CON criteria and standards developed and adopted by the MSDH for CON review of health-related activities requiring such review. The *Mississippi Certificate of Need Review Manual* provides additional general CON criteria by which the Department reviews all applications.

101 Outline of the State Health Plan

The *State Health Plan* describes existing services, evaluates the need for additional services in various aspects of health care, and provides Certificate of Need (CON) criteria and standards for each service requiring CON review. These services include: long-term care, including care for the aged and the intellectually disabled; mental health care, including psychiatric, chemical dependency, and long-term residential treatment facilities; perinatal care; acute care, including various types of diagnostic and therapeutic services; ambulatory care, including outpatient services and freestanding ambulatory surgical centers; comprehensive medical rehabilitation; home health services; and end stage renal disease facilities.

The *State Health Plan* includes data provided by the Office of Licensure and Certification via the Applications for Renewal of Hospital License, the Annual Hospital Reports, and the Report on Institutions for the Aged or Infirmed. The Office of Licensure and Certification is responsible for the collection of these data through reports submitted by hospitals and healthcare facilities. These data are reported in the *Plan* as it has been provided by the Office of Licensure and Certification for health planning purposes.

The Glossary contains definitions of terms and phrases used in this *Plan*.

102 General Certificate of Need Policies

Mississippi's health planning and health regulatory activities have the following purposes:

- To improve the health of Mississippi residents;
- To increase the accessibility, acceptability, continuity, and quality of health services;
- To prevent unnecessary duplication of health resources; and
- To provide cost containment.

MSDH intends to approve an application for CON if it substantially complies with the projected need and with the applicable criteria and standards presented in this *Plan*, and to disapprove all CON applications which do not substantially comply with the projected need or with applicable criteria and standards presented in this *Plan*.

MSDH intends to disapprove CON applications which fail to confirm that the applicant shall provide a reasonable amount of indigent care or if the applicant's admission policies deny or discourage access to care by indigent patients. Furthermore, MSDH intends to disapprove CON applications if such approval would have a significant adverse effect on the ability of an existing facility or service to provide Medicaid/indigent care. Finally, it is the intent of the Mississippi State Department of Health to strictly adhere to the criteria set forth in the *State Health Plan* and to ensure that any provider desiring to offer healthcare services covered by the Certificate of Need statutes undergoes review and is issued a Certificate of Need prior to offering such services.

The State Health Officer shall determine whether the amount of indigent care provided or proposed to be offered is "reasonable." The Department considers a reasonable amount of indigent care as that which is comparable to the amount of such care offered by other providers of the requested service within the same, or proximate, geographic area.

MSDH may use a variety of statistical methodologies including, but not limited to, market share analysis or patient origin data to determine substantial compliance with projected need and with applicable criteria and standards in this *Plan*.

102.01 Teaching Exception

Section 41-7-187, Mississippi Code Annotated, as amended, authorizes MSDH to develop and implement the CON program. As the Mississippi Supreme Court recognized in *Jackson HMA, LLC, et al. v. Mississippi State Department of Health, et al*., 98 So.3d 980, 986 (Miss. 2012), through this statute and others the Legislature delegated to MSDH the authority to adopt rules and regulations "to determine when a CON is required." Therefore, any activity or project at the University of Mississippi Medical Center principally designed to train health professionals and/or further the academic research mission of the institution, shall not require the issuance of a CON, notwithstanding any provision in Section 41-7-171 *et seq*. to the contrary, provided that any person proposing to undertake any such activity that may be subject to the CON program shall file a Determination of Reviewability, as authorized by Section 41-7-205 and the *Mississippi Certificate of Need Review Manual* or other regulations adopted by MSDH, that demonstrates the activity or project:

1. is consistent with the teaching and/or academic research mission of the applicant;

2. is undertaken in support of a program(s) accredited by the Accreditation Council for Graduate Medical Education (ACGME), Liaison Committee on Medical Education (LCME), or other academic accrediting body, including but not limited to, the Commission on Collegiate Nursing Education (CCNE), Accreditation Council for Pharmacy Education (ACPE), Commission on Dental Accreditation (CODA), and Southern Association of Colleges and Schools Commission on Colleges (SACSCOC); and

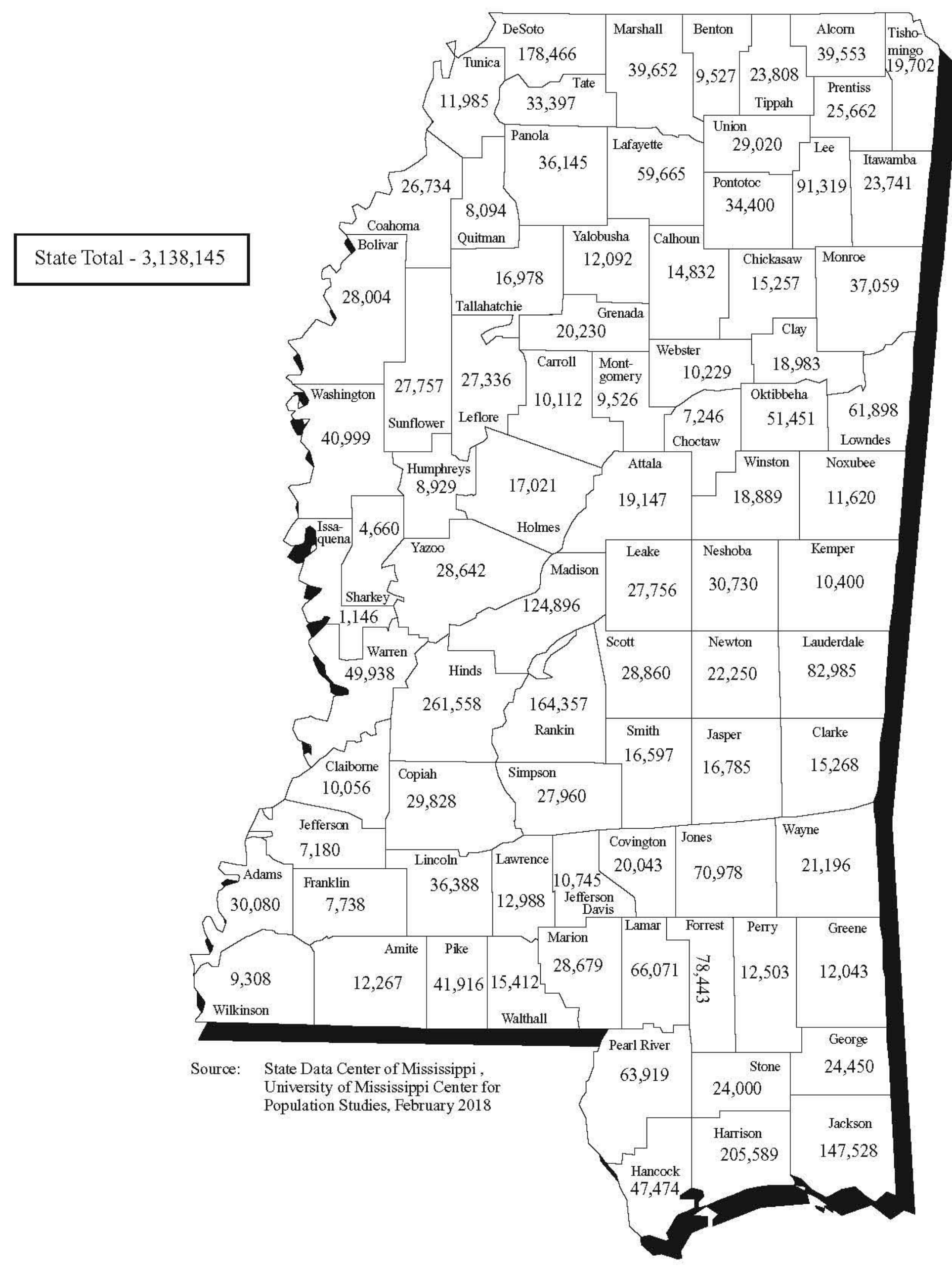
3. addresses one or more priority health need(s) of the *State Health Plan*.

103 Population for Planning

Population projections used in this *Plan* were calculated by the State Data Center of Mississippi, University of Mississippi Center for Population Studies, February 13, 2018. This plan is based on 2023 population projections.

Map 1-1 depicts the state's 2023 estimated population by county. Mississippi population projections for the years 2017 and 2023 were obtained from the State Data Center of Mississippi, University of Mississippi Center for Population Studies, February 13, 2018.

Map 1-1
Population Projections
2023



104 Health Personnel

High quality health care services depend on the availability of competent health personnel in sufficient numbers to meet the population's needs. Mississippi is traditionally a medically underserved state, particularly in sparsely populated rural areas and areas containing large numbers of poor people, elderly people, and minorities. This section discusses some of the areas of greatest need for health care personnel, focusing on physicians, dentists, and nurses.

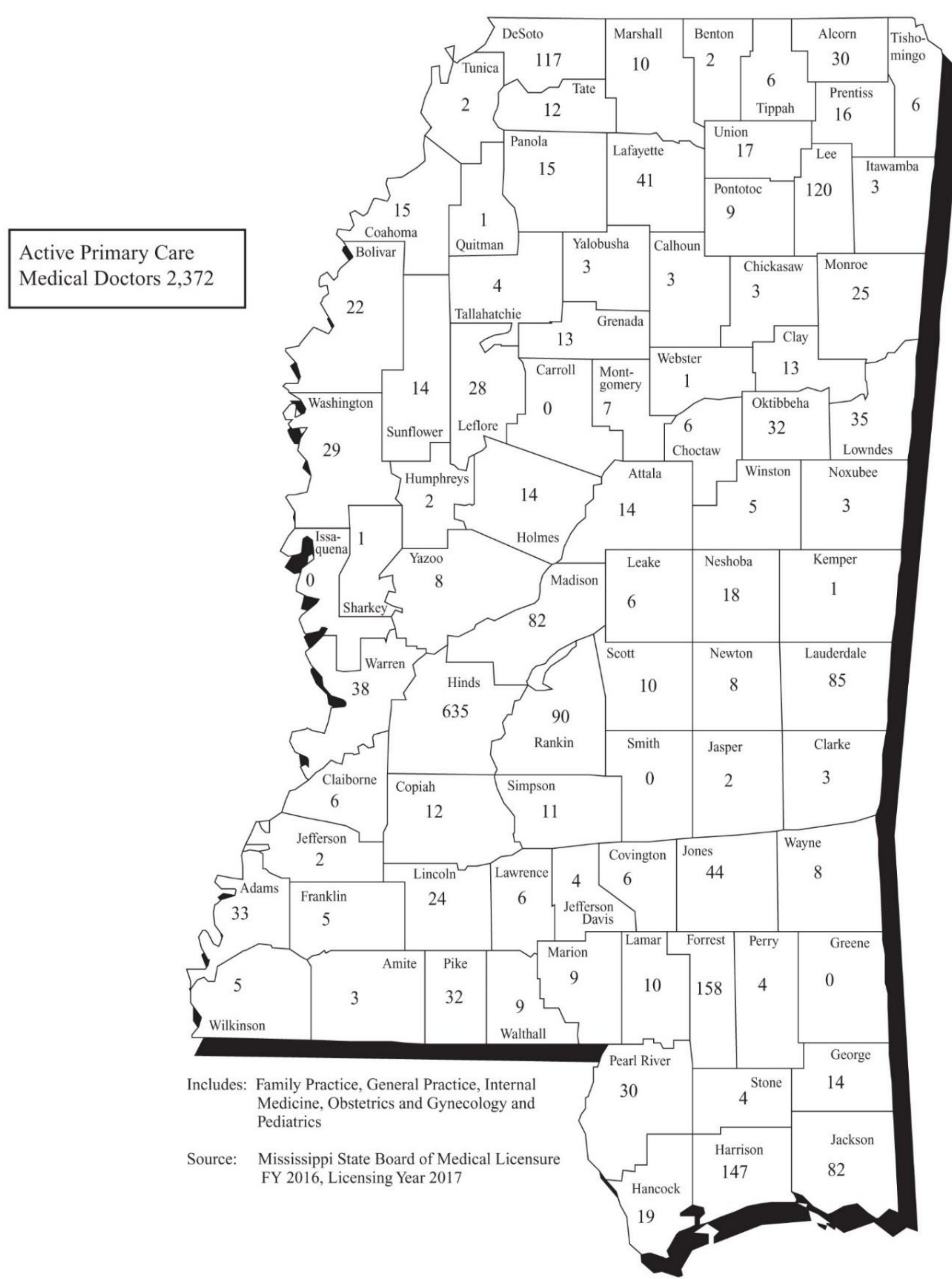
104.01 Physicians

Mississippi had 5,744 active medical doctors, 407 osteopaths, and 68 podiatrists licensed by the Board of Medical Licensure for FY 2016 (licensing year 2017) for a total of 6,219 active licensed physicians practicing in the state. This number represents an increase of 43 physicians, or more than 0.69 percent, from FY 2015 (licensing year 2016).

Approximately 2,372 (41 percent) of the state's active medical doctors are primary care physicians, representing a ratio of one primary care physician for every 1,323 persons, based on 2023 projected population. The primary care physicians included 754 family practitioners, seventy-five (75) general practitioners, 739 internal medicine physicians, 329 obstetrical and gynecological physicians, and 475 pediatricians. Map 1-2 depicts the total number of primary care medical doctors by county.

According to the Health Resources and Services Administration’s Office of Shortage Designation, Mississippi has a total of 116 primary care health professional shortage area (HPSA) designations. Seventy-eight (78) of the designations are single county designations. The United States Department of Health and Human Services defines a primary care HPSA as a geographic area that has a ratio in excess of 3,500 persons per primary care physician and insufficient access to those physicians within a 30 minute traveling radius. Also, areas with 3,000 to 3,500 persons per primary care physician that have unusually high needs for primary care services and have insufficient access to primary care doctors within a 30 minute traveling radius, can also be designated as a primary care HPSA.

Map 1-2
Active Primary Care Medical Doctors by County of Residence
FY 2016



Includes: Family Practice, General Practice, Internal Medicine, Obstetrics and Gynecology and Pediatrics

Source: Mississippi State Board of Medical Licensure FY 2016, Licensing Year 2017

104.02 Dentists

The Mississippi State Board of Dental Examiners reported 1,421 licensed (1,380 "active" and 41 "inactive") dentists in the state as of December 2017, with 103 new dentists licensed during calendar year 2016. Based on Mississippi's 2023 projected population of 3,138,145 the state has one active dentist for every 2,274 persons.

According to the Health Resources and Services Administration's Office of Shortage Designation (HRSA/OSD), Mississippi currently has a total of 110 dental health professional shortage area (HPSA) designations. Seventy-nine of the designations are single county designations.

Mississippi's two major population centers contain the most active dentists. The Jackson area had a total of 336 active dentists in the fall of 2017, with 186 in Hinds County, 100 in Rankin County, and 50 in Madison County. The Gulf Coast region had the second largest count at 183, with 111 in Harrison County, 65 in Jackson County, and 7 in Hancock County. Combined, these two metropolitan areas contained 37.61 percent of the state's total supply of active dentists.

On the opposite end of the spectrum, six counties— Benton, Claiborne, Tate, Tunica, Sharkey, and Quitman—had only one active dentist each and one county— Issaquena—had no active dentist. Map 1-3 depicts the number of dentists per county and indicates the number of in-state, active, licensed dentists who have mailing addresses in the state.

Map 1-3
Active Dentists by County

Source: Mississippi State Board of Dental Examiners
December 2017

104.03 Nurses

Registered Nurses

The Mississippi Board of Nursing reported 52, 852 registered nurses (RNs) licensed in FY 2017with (39,897) who worked full or part-time in nursing careers. That included 21,124in hospitals; 3,928 in community, public, or home health; 2,415 in physicians' offices; 2,233 in nursing homes; and the remainder in other nursing careers. RNs by degree in FY 2017 included, 4,802 diploma, 32,743 associates, 4,823 baccalaureate non-nursing, 23,756 baccalaureate nursing, 1,434 masters non-nursing, 23,756 masters nursing, and 391 doctorate degrees.

Advanced Practice Registered Nurses

Advanced practice registered nurse (APRN) includes any person licensed to practice nursing in Mississippi and certified by the Board of Nursing to practice in an expanded role as an advanced practice registered nurse including nurse midwives and certified registered nurse anesthetists. For FY 2017 there were 6,959 RNs certified as APRNs, with 4,767 family nurse practitioners; 759 certified registered nurse anesthetist; and 506 in adult acute care. The remainder practiced in such specialties as adult and family mental health, gerontology, midwifery, neonatal, pediatric, women's health care and family planning.

Licensed Practical Nurses

The Board of Nursing reported 14,015 licensed practical nurses (LPNs) licensed in FY 2017 with 10,642 who worked full or part-time in nursing careers. That included 4,500 in nursing homes; 1,091 in hospitals; 1,768 in community, public, or home health; and the remainder in other nursing careers. There were 5,238 LPNs certified for an expanded role in FY 2017, including 4,973 in intravenous therapy, 152 in hemodialysis, and 113 in both expanded roles.

104.04 Physical Therapy Practitioners

Physical therapy (PT) practitioners provide preventive, diagnostic, and rehabilitative services to restore function or prevent disability from disease, trauma, injury, loss of a limb, or lack of use of a body part to individuals of all ages.

The Mississippi State Board of Physical Therapy reported 1,987 licensed physical therapists in Mississippi as of November 17, 2017 with 1,717 residing in the state and 1,709 practicing in the state. Nine percent of the Mississippi resident physical therapists practitioners live in Hinds County, eight percent in Harrison County, eight percent in Madison County, and seven percent in Lee County for a total of 32 percent in four counties. The Board also reported 1,274 licensed physical therapist assistants, with 1,120 residing in the state and 1,112 practicing in the state.

104.05 Occupational Therapist

Occupational therapy (OT) is a health and rehabilitation profession that serves people of all ages who are physically, psychologically, or developmentally disabled. Their functions range from diagnosis to treatment, including the design and construction of various special and self-help devices. OTs direct their patients in activities designed to help them learn skills necessary to perform daily tasks, diminish or correct pathology, and promote and maintain health.

MSDH reported 1,134 licensed occupational therapists and 666 licensed occupational therapy assistants on its Mississippi roster as of November 7, 2017, with 980 of the OTs and 597 of the OTAs residing in the state.

104.06 Emergency Medical Personnel

The training of emergency medical personnel includes ambulance operators and emergency medical technicians (EMTs) of both advanced and basic levels. Mississippi requires all ambulance drivers to have EMS driver certification (EMS-D). To qualify, an individual must complete an approved driver training program that involves driving tasks, vehicle dynamics, vehicle preventative maintenance, driver perception, night driving, and information on different driving maneuvers. This training offers both academic and clinical (practical hands on) experiences for the prospective ambulance driver. In FY 2016, Mississippi issued 1,349 EMS driver certifications or recertification.

Additionally, all emergency medical technicians – both advanced level and basic level – must complete a National Highway Safety and Traffic Administration training program for the respective level. This training provides extensive academic and clinical hours for the prospective students. Upon completion, students must pass the National Registry for Emergency Medical Technicians test and receive their national certification before applying for the Mississippi certification. For FY 2016, the MSDH Bureau of Emergency Medical Services reported issuing a total of 1,787 EMT certifications or recertifications 1,265 Paramedics and 20 Critical Care Paramedics.

The Legislature authorized the MSDH Bureau of Emergency Medical Services (BEMS) to certify Mississippi's medical first responders beginning July 1, 2004. In fiscal year 2016, BEMS certified 9 medical first responders.

Chapter 02 Long-Term Care

"Long-term care" refers to a variety of services rendered to assist a person with chronic conditions or disabilities that reduce their capacity to function independently.

Mississippi's long-term care (nursing home and home health) patients are primarily disabled, elderly people, who make up seventeen percent (17%) percent of the 2023 projected population above age sixty-five (65). Projections place the number of people in this age group at approximately 535,379 by 2023.

The risk of becoming frail, disabled, and dependent rises dramatically with age. While the average length of life has increased, people are often living longer with disabling chronic conditions, which the present medical system can "manage" but not cure. As a result, Aged individuals may become dependent on medical technology and professional care providers for years - not just weeks or months.

200 Options for Long-Term Care

Community Based long-term care programs can potentially delay or prevent institutionalization. These programs, although not reviewable under Certificate of Need, drastically affect the demand for skilled nursing beds.

Community based programs play a vital role in helping the elderly maintain some degree of independence. Examples of community-based elder-care include adult day care, senior centers, transportation, meals on wheels or meals at community locations, and home health services. More information concerning such services can be obtained by contacting the Mississippi Department of Human Services, Division of Aging and Adult Services.

201 Housing for the Elderly

Many elderly or infirmed people do not need skilled nursing care on a daily basis, but may need safe, affordable housing and assistance with one or more activities of daily living. Housing for the elderly and infirmed population can take many forms.

"Board and care homes" are residences providing rooms (often semi-private), shared common areas, meals, protective oversight, and help with bathing, dressing, grooming, and other daily needs. In Mississippi, these facilities are licensed as personal care homes: Personal Care Home - Residential Living facilities and Personal Care Home - Assisted Living facilities. Both types of facilities provide a sheltered environment and assistance with activities of daily living. Additionally, Personal Care Homes - Assisted Living may provide additional supplemental medical services that include the provision of certain routine health maintenance and emergency response services. In December of 2016, the state had 181 licensed personal care homes, with a total of 5,779 licensed beds. Personal care facilities presently are not reviewable under Certificate of Need authority.

"Retirement communities" or "senior housing facilities" have become common around the state. These communities usually provide apartments for independent living, with services such as transportation, weekly or bi-weekly housekeeping, and one to three daily meals. Many of these facilities include a licensed personal care home where the resident may move when he or she is no longer physically or mentally able to remain in their own apartment. Most facilities do not require an initial fee or require their residents to sign a lifetime contract. Most facilities generally offer only independent living and personal care. Most also do not include a skilled nursing home as a part of the retirement community. Table 2-1 shows the distribution of personal care facilities by Long-Term Care Planning Districts.

Table 2-1
Personal Care Home Licensed Beds, Occupancy Rates and Average Daily Census
2016

District I			
County	**Licensed Beds**	**Occupancy Rate %**	**Average Daily Census**
Attala	30	0.00	0.00
Bolivar	137	91.17	113.06
Carroll	15	0.00	0.00
Coahoma	36	15.58	5.62
DeSoto	479	80.79	386.98
Grenada	63	87.06	54.84
Holmes	N/A	N/A	N/A
Humphreys	N/A	N/A	N/A
Leflore	80	72.22	57.78
Montgomery	N/A	N/A	N/A
Panola	54	87.20	47.08
Quitman	N/A	N/A	N/A
Sunflower	50	90.98	34.58
Tallahatchie	N/A	N/A	N/A
Tate	90	182.74	78.64
Tunica			
Washington	152	87.54	99.80
Yalobusha	N/A	N/A	N/A
District Total	**1,186**	**79.53**	**878.38**

District II			
County	**Licensed Beds**	**Occupancy Rate %**	**Average Daily Census**
Alcorn	69	85.00	58.66
Benton	N/A	N/A	N/A
Calhoun	20	52.96	10.60
Chickasaw	18	72.98	13.14
Choctaw	14	80.98	11.34
Clay	28	77.33	21.60
Itawamba	172	64.72	111.30
Lafayette	260	62.92	163.60
Lee	444	69.77	309.78
Lowndes	200	70.26	92.74
Marshall	46	97.34	44.78
Monroe	83	92.00	76.34
Noxubee	33	57.19	18.86
Oktibbeha	129	70.55	38.10
Pontotoc	40	85.54	34.22
Prentiss	40	55.78	22.30
Tippah	N/A	N/A	N/A
Tishomingo	92	74.13	68.20
Union	116	57.52	51.20
Webster	13	0.00	0.00
Winston	37	89.16	17.84
District Total	**1,854**	**65.81**	**1,164.60**

Table 2-1 (Continued)
Personal Care Home Licensed Beds, Occupancy Rates and Average Daily Census
2016

District III				District IV			
County	**Licensed Beds**	**Occupancy Rate %**	**Average Daily Census**	**County**	**Licensed Beds**	**Occupancy Rate %**	**Average Daily Census**
Adams	44	85.10	37.44	Clarke	55	30.16	9.04
Amite	0	0.00	0.00	Covington	36	66.84	24.06
Claiborne	5	0.00	0.00	Forrest	241	66.47	122.94
Copiah	N/A	N/A	N/A	George	81	89.80	45.78
Franklin	N/A	N/A	N/A	Greene	N/A	N/A	N/A
Hinds	531	70.81	341.30	Hancock	32	64.89	19.46
Issaquena	N/A	N/A	N/A	Harrison	505	77.66	271.82
Jefferson	N/A	N/A	N/A	Jackson	82	95.48	68.74
Lawrence	N/A	N/A	N/A	Jasper	48	36.22	17.38
Lincoln	24	46.32	3.70	Jeff Davis	N/A	N/A	N/A
Madison	588	71.66	349.74	Jones	202	60.27	92.84
Pike	98	64.61	63.32	Kemper	N/A	N/A	N/A
Rankin	430	76.40	147.46	Lamar	163	75.80	123.54
Sharkey	N/A	N/A	N/A	Lauderdale	221	38.94	71.20
Simpson	30	94.76	28.42	Leake	40	77.01	30.82
Walthall	N/A	N/A	N/A	Marion	22	59.35	13.06
Warren	73	73.27	53.48	Neshoba	53	79.48	11.92
Wilkinson	N/A	N/A	N/A	Newton	54	58.12	31.40
Yazoo	N/A	N/A	N/A	Pearl River	55	86.66	34.66
				Perry	42	94.13	39.54
				Scott	30	85.55	25.66
				Smith	N/A	N/A	N/A
				Stone	1	100.00	1.00
				Wayne	55	70.27	38.64
District Total	**1,823**	**58.29**	**1,024.86**	**District Total**	**2,018**	**74.37**	**1093.50**
State Total					**5,779**	**65.41**	**3,557.20**

Source: *2016 Report on Institutions for the Aged or Infirm;* MSDH, Bureau of Health Facilities Licensure and Certification

"Continuing Care Retirement Communities" (CCRC), another type of retirement community, includes three stages: 1) independent living in a private apartment, 2) a personal care facility, and 3) a skilled nursing home. Residents of this type of facility enter into a contract whereby the residents pay a substantial fee upon entering the CCRC and the facility agrees to provide care for the remainder of the resident's life. Since CCRC beds are licensed as skilled nursing facility beds, they are included in Table 2-2.

202 Nursing Facilities

As of FY 2016, Mississippi has 208 licensed skilled nursing facilities, with a total of 18,274 licensed beds. This count of licensed nursing home beds excludes the following: 120 beds operated by the Mississippi Band of Choctaw Indians; 562 licensed beds operated by the Department of Mental Health and 658 operated by the Mississippi State Veteran's Affairs Board; and 104 beds (which are dedicated to serving patients with special rehabilitative needs, including spinal cord and closed-head injuries) operated by Mississippi Methodist Rehabilitation Center. These beds are not subject to Certificate of Need review and are designated to serve specific populations.

Map 2-1 shows the general Long-Term Care Planning Districts and Table 2-2 presents the projected nursing home bed need for 2018 by planning district. Both the map and table appear in the criteria and standards section of this chapter. For 2023 projections, see Table 2-2A in the Appendix.

203 Long-Term Care Beds for Individuals with Intellectual Disabilities and Developmental Disabilities

Mississippi has 2,434 licensed beds classified as Intermediate Care Facility for the Intellectually Disabled (ICF/ID). The Department of Mental Health (DMH) operates five comprehensive regional programs that contain 1,492 active licensed and staffed beds. In addition to intellectual and developmental disabilities, the residents of the DMH regional centers also have severe physical disabilities that result in residents requiring care at the nursing home level. Regular nursing facilities are not equipped to serve these individuals. Map 2-2 shows the ID/DD Long-Term Care Planning Districts and Table 2-3 presents the ID/DD nursing home bed need by Planning District. Both the map and table appear in the criteria and standards section of this chapter.

204 Certificate of Need Criteria and Standards for Nursing Home Beds

Note: Should the Mississippi State Department of Health receive a Certificate of Need application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until the Department of Health has developed and adopted CON criteria and standards. If the Department has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of the Mississippi State Department of Health.

204.01 Policy Statement Regarding Certificate of Need Applications for the Offering of Nursing Home Care Services

1. Legislation

   a. The 1990 Mississippi Legislature imposed a permanent moratorium which prohibits MSDH from granting approval for or issuing a Certificate of Need to any person proposing the new construction of, addition to, expansion of, or conversion of vacant hospital beds to provide skilled or intermediate nursing home care, except as specifically authorized by statute.

   b. Effective July 1, 1990, any health care facility defined as a psychiatric hospital, skilled nursing facility, intermediate care facility, intermediate care facility for the intellectually disabled, or psychiatric residential treatment facility that is owned by the State of Mississippi and under the direction and control of the State Department of Mental Health is exempted from the requirement of the issuance of a Certificate of Need under Section 41-7-171 et seq., for projects which involve new construction, renovation, expansion, addition of new beds, or conversion of beds from one category to another in any such defined health care facility.

   c. The 1999 Mississippi Legislature temporarily lifted the 1990 moratorium to allow a sixty (60) bed nursing facility to be added to each of twenty-six (26) counties with the greatest need between the years 2000 and 2003. The Legislature also permitted CONs for sixty (60) nursing facility beds for individuals with Alzheimer's in the northern, central, and southern parts of each of the Long-Term Care Planning Districts, for a total of 240 additional beds.

   d. Effective April 12, 2002, no health care facility shall be authorized to add any beds or convert any beds to another category of beds without a Certificate of Need.

   e. Effective March 4, 2003, if a health care facility has voluntarily delicensed some of its existing bed complement, it may later relicense some or all of its delicensed beds without the necessity of having to acquire a Certificate of Need. The facility must submit a letter requesting that the beds be placed in abeyance. The Department of Health shall maintain a record of the delicensing health care facility and its voluntarily delicensed beds and continue counting those beds as part of the state's total bed count for health care planning purposes.

   f. A health care facility that has ceased to operate for a period of sixty (60) months or more shall require a Certificate of Need prior to reopening.

g. MSDH shall determine the need for additional nursing home care beds based on the Long Term Care Planning Districts (LTCPDs) as outlined on Map 2-1. MSDH shall calculate the statistical need for beds in each LTCPD independently of all other LTCPDs.

2. Bed Need: The need for nursing home care beds is established at:

   0.5 beds per 1,000 population aged 64 and under
   10 beds per 1,000 population aged 65-74
   36 beds per 1,000 population aged 75-84
   135 beds per 1,000 population aged 85 and older

3. Population Projections: MSDH shall use population projections as presented in Table 2-3 when calculating bed need. These population projections are the most recent projections prepared by the State Data Center of Mississippi, University of Mississippi Center for Population Studies, February 13, 2018.

4. Bed Inventory: MSDH shall review the need for additional nursing home beds using the most recent information available regarding the inventory of such beds.

5. Size of Facility: MSDH shall not approve construction of a new or replacement nursing home care facility for less than sixty (60) beds. However, the number of beds authorized to be licensed in a new or replacement facility may be less than sixty (60) beds.

6. Definition of CCRC: See the Glossary of this *Plan*.

7. Medicare Participation: MSDH strongly encourages all nursing homes participating in the Medicaid program to also become certified for participation in the Medicare program.

8. Alzheimer's/Dementia Care Unit: MSDH encourages all nursing home owners to consider the establishment of an Alzheimer's/Dementia Care Unit as an integral part of their nursing care program.

204.02 Certificate of Need Criteria and Standards for Nursing Home Care Beds

If the legislative moratorium were removed or partially lifted, MSDH would review applications for the offering of nursing home care under the statutory requirements of Sections 41-7-173 (h) subparagraphs (iv) and (vi), 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the applicable policy statements contained in this *Plan*; the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

Certificate of Need review is required for the offering of nursing home care services, as defined, if the capital expenditure exceeds $5,000,000; if the licensed bed capacity is increased through the conversion or addition of beds; or if nursing home care services have not been provided on a regular basis by the proposed provider of such services within the period of twelve (12) months prior to the time such services would be offered. Certificate of Need review is required for the construction, development, or otherwise establishment of new nursing home care beds regardless of capital expenditure.

Need Criterion 1: Nursing Home Care Bed Need
The applicant shall document a need for nursing home care beds using the need methodology as presented herein. The Long-Term Care Planning District wherein the proposed facility will be located must show a need using the following ratio:

0.5 beds per 1,000 population aged 64 and under
10 beds per 1,000 population aged 65- 74
36 beds per 1,000 population aged 75-84
135 beds per 1,000 population aged 85 and older

Need Criterion 2: Number of Beds to be Constructed, Converted, and/or Licensed
The applicant shall document the number of beds that will be constructed, converted, and/or licensed to provide nursing home care services.

Need Criterion 3: Consideration of Statistical Need
MSDH should consider the area of statistical need as one criterion when awarding Certificates of Need in the case of competing applications.

Need Criterion 4: Alzheimer's/Dementia Care Unit
Any applicant applying for nursing home beds who proposes to establish an Alzheimer's/Dementia Care Unit shall affirm that the applicant shall fully comply with all licensure regulations of MSDH for said Alzheimer's/Dementia Care Unit.

204.03 Certificate of Need Criteria and Standards for the Relocation/Transfer of Nursing Home Care Beds

Need Criterion 1: Relocation/Transfer of Nursing Home Care Beds
An applicant proposing to relocate/transfer a portion or all of an existing facility's nursing home care beds to another location shall document the relocation/transfer is within the current facility's LTCPD.

Need Criterion 2: Number of Beds to be Relocated/Transferred
The applicant shall document the number of beds to be relocated/transferred to provide nursing home care services.

Need Criterion 3: Alzheimer's/Dementia Care Unit
Any applicant applying for the relocation/transfer of nursing home beds in an Alzheimer's/Dementia Care Unit shall affirm that the applicant shall fully comply with all licensure regulations of MSDH for said Alzheimer's/Dementia Care Unit.

204.04 Certificate of Need Criteria and Standards for Nursing Home Beds as Part of a Continuing Care Retirement Community (CCRC)

Entities desiring to establish nursing home beds as part of a CCRC shall meet all applicable requirements, as determined by MSDH, of the policy statements and general CON criteria and standards in the *Mississippi Certificate of Need Review Manua*l and the CON criteria and standards for nursing home beds established in this *State Health Plan*.

Map 2-1
Long- Term Care Planning Districts

Source: Mississippi Department of Health

Table 2-2
2018 Projected Nursing Home Bed Need[1]

State of Mississippi												
Long-Term Care Planning District	**Population 0 - 64**	**Bed Need (0.5/1,000)**	**Population 65 - 74**	**Bed Need (10/1,000)**	**Population 75 - 84**	**Bed Need (36/1,000)**	**Population 85+**	**Bed Need (135/1,000)**	**Total Bed Need**	**Beds in Abeyance**	**Licensed**	**Difference**
District I	453,824	227	48,467	485	21,904	789	7,818	1,055	2,556	263	3,225	-932
District II	530,996	265	59,783	598	30,074	1,083	10,963	1,480	3,426	48	4,027	-649
District III	728,429	364	76,776	768	35,229	1,268	13,613	1,838	4,238	227	4,928	-917
District IV	901,367	451	100,344	1,003	47,755	1,719	16,195	2,186	5,360	328	6,124	-1,092
State Total	**2,614,616**	**1,307**	**285,370**	**2,854**	**134,962**	**4,859**	**48,589**	**6,560**	**15,579**	**866**	**18,304**	**-3,591**

[1] Data may not equal totals due to rounding

Note: This count of licensed nursing home beds excludes the following: 120 beds operated by the Mississippi Band of Choctaw Indians; 562 licensed beds operated by the Department of Mental Health and 658 operated by the Mississippi State Veteran's Affairs Board; and 104 beds (which are dedicated to serving patients with special rehabilitative needs, including spinal cord and closed-head injuries) operated by Mississippi Methodist Rehabilitation Center.

Sources: Mississippi State Department of Health, Division of Licensure and Certification; and Division of Health Planning and Resource Development Calculations, 2016

Population Projections: State Data Center of Mississippi, University of Mississippi Center for Population Studies, February 13, 2018.

Table 2-2 (continued)
2018 Projected Nursing Home Bed Need

District I												
County	Population 0 - 64	Bed Need (0.5/1,000)	Population 65 - 74	Bed Need (10/1,000)	Population 75 - 84	Bed Need (36/1,000)	Population 85+	Bed Need (135/1,000)	Total Bed Need	# Beds in Abeyance	Licensed	Difference
Attala	15,635	8	2,205	22	1,090	39	464	63	132	0	120	12
Bolivar	24,941	12	3,229	32	1,146	41	498	67	153	60	350	-257
Carroll	8,081	4	1,439	14	668	24	190	26	68	0	60	8
Coahoma	22,821	11	2,180	22	1,064	38	427	58	129	30	178	-79
DeSoto	150,179	75	13,529	135	6,353	229	1,981	267	707	0	320	387
Grenada	17,038	9	2,354	24	1,023	37	391	53	122	10	247	-135
Holmes	15,090	8	1,559	16	708	25	285	38	87	8	148	-69
Humphreys	7,770	4	767	8	376	14	147	20	45	0	60	-15
Leflore	24,713	12	2,450	25	1,074	39	535	72	148	62	370	-284
Montgomery	7,943	4	1,261	13	572	21	231	31	68	0	120	-52
Panola	30,228	15	3,278	33	1,616	58	550	74	180	0	190	-10
Quitman	6,805	3	801	8	403	15	143	19	45	0	60	-15
Sunflower	23,831	12	2,341	23	1,011	36	403	54	126	0	246	-120
Tallahatchie	14,539	7	1,207	12	557	20	194	26	66	21	98	-53
Tate	27,054	14	3,173	32	1,320	48	398	54	147	14	120	13
Tunica	10,219	5	890	9	352	13	109	15	41	0	60	-19
Washington	37,011	19	4,314	43	1,857	67	655	88	217	58	356	-197
Yalobusha	9,926	5	1,490	15	714	26	217	29	75	0	122	-47
District Total	**453,824**	**227**	**48,467**	**485**	**21,904**	**789**	**7,818**	**1,055**	**2,556**	**263**	**3,225**	**-932**

Table 2-2 (continued)
2018 Projected Nursing Home Bed Need

District II												
County	Population 0 - 64	Bed Need (0.5/1,000)	Population 65 - 74	Bed Need (10/1,000)	Population 75 - 84	Bed Need (36/1,000)	Population 85+	Bed Need (135/1,000)	Total Bed Need	# Beds in Abeyance	Licensed	Difference
Alcorn	31,797	16	4,250	43	2,130	77	681	92	227	0	264	-37
Benton	7,708	4	964	10	472	17	164	22	53	0	60	-7
Calhoun	12,099	6	1,687	17	832	30	300	41	93	0	155	-62
Chickasaw	13,194	7	1,614	16	837	30	274	37	90	0	139	-49
Choctaw	6,024	3	1,019	10	490	18	174	23	54	13	60	-19
Clay	16,022	8	2,116	21	1,016	37	414	56	122	20	160	-58
Itawamba	19,425	10	2,471	25	1,291	46	449	61	142	0	196	-54
Lafayette	48,272	24	4,036	40	2,002	72	764	103	240	0	180	60
Lee	75,014	38	7,887	79	4,124	148	1,534	207	472	0	487	-15
Lowndes	51,902	26	5,567	56	2,728	98	1,067	144	324	0	380	-56
Marshall	32,780	16	3,843	38	1,655	60	598	81	195	0	180	15
Monroe	30,279	15	3,931	39	2,110	76	769	104	234	0	332	-98
Noxubee	9,833	5	1,024	10	520	19	215	29	63	0	60	3
Oktibbeha	44,558	22	3,229	32	1,638	59	636	86	199	0	179	20
Pontotoc	28,134	14	2,919	29	1,327	48	535	72	163	0	164	-1
Prentiss	21,020	11	2,566	26	1,445	52	526	71	159	0	144	15
Tippah	19,494	10	2,350	24	1,190	43	320	43	119	0	240	-121
Tishomingo	15,693	8	2,393	24	1,230	44	411	55	132	15	178	-61
Union	23,733	12	2,834	28	1,360	49	526	71	160	0	180	-20
Webster	8,557	4	1,055	11	572	21	154	21	56	0	155	-99
Winston	15,458	8	2,028	20	1,105	40	452	61	129	0	134	-5
District Total	**530,996**	**265**	**59,783**	**598**	**30,074**	**1,083**	**10,963**	**1,480**	**3,426**	**48**	**4,027**	**-649**

Table 2-2 (continued)
2018 Projected Nursing Home Bed Need

District III												
County	**Population 0 - 64**	**Bed Need (0.5/1,000)**	**Population 65 - 74**	**Bed Need (10/1,000)**	**Population 75 - 84**	**Bed Need (36/1,000)**	**Population 85+**	**Bed Need (135/1,000)**	**Total Bed Need**	**# Beds in Abeyance**	**Licensed**	**Difference**
Adams	25,395	13	3,303	33	1,598	58	670	90	194	20	254	-80
Amite	9,870	5	1,689	17	832	30	285	38	90	0	80	10
Claiborne	8,455	4	907	9	416	15	148	20	48	4	73	-29
Copiah	24,822	12	3,082	31	1,386	50	534	72	165	30	150	-15
Franklin	6,434	3	887	9	453	16	162	22	50	0	60	-10
Hinds	223,398	112	20,114	201	8,956	322	3,633	490	1,126	59	1,518	-451
Issaquena	1,032	1	115	1	77	3	19	3	7	0	0	7
Jefferson	6,261	3	669	7	341	12	126	17	39	0	60	-21
Lawrence	10,720	5	1,323	13	721	26	229	31	75	0	60	15
Lincoln	29,981	15	3,617	36	1,694	61	694	94	206	0	320	-114
Madison	99,184	50	9,932	99	4,042	146	1,834	248	542	0	455	87
Pike	34,705	17	4,161	42	1,933	70	756	102	231	0	315	-84
Rankin	134,240	67	13,893	139	6,402	230	2,148	290	727	91	502	134
Sharkey	3,927	2	489	5	224	8	116	16	31	0	54	-23
Simpson	23,158	12	2,805	28	1,385	50	503	68	157	0	180	-23
Walthall	12,563	6	1,749	17	896	32	328	44	100	8	137	-45
Warren	41,589	21	4,925	49	2,287	82	784	106	258	0	380	-122
Wilkinson	8,045	4	892	9	453	16	169	23	52	15	90	-53
Yazoo	24,650	12	2,224	22	1,133	41	475	64	139	0	240	-101
District Total	**728,429**	**364**	**76,776**	**768**	**35,229**	**1,268**	**13,613**	**1,838**	**4,238**	**227**	**4,928**	**-917**

Table 2-2 (continued)
2018 Projected Nursing Home Bed Need

District IV												
County	Population 0 - 64	Bed Need (0.5/1,000)	Population 65 - 74	Bed Need (10/1,000)	Population 75 - 84	Bed Need (36/1,000)	Population 85+	Bed Need (135/1,000)	Total Bed Need	# Beds in Abeyance	Licensed	Difference
Clarke	12,620	6	1,962	20	917	33	277	37	96	0	120	-24
Covington	16,503	8	1,910	19	1,068	38	402	54	120	0	120	0
Forrest	66,372	33	6,387	64	2,887	104	1,184	160	361	80	536	-255
George	20,111	10	2,236	22	1,153	42	308	42	116	0	101	15
Greene	9,842	5	1,232	12	670	24	217	29	71	0	120	-49
Hancock	38,682	19	5,206	52	2,283	82	677	91	245	29	202	14
Harrison	175,018	88	17,421	174	7,704	277	2,614	353	892	80	932	-120
Jackson	123,313	62	13,481	135	6,448	232	1,910	258	686	0	528	158
Jasper	13,706	7	1,861	19	1,006	36	340	46	108	0	110	-2
Jeff Davis	8,898	4	1,545	15	677	24	239	32	77	0	60	17
Jones	58,640	29	6,818	68	3,357	121	1,145	155	373	10	428	-65
Kemper	8,551	4	1,095	11	596	21	229	31	68	0	60	8
Lamar	54,386	27	4,732	47	2,364	85	788	106	266	3	180	83
Lauderdale	68,825	34	7,902	79	3,882	140	1,512	204	457	77	825	-445
Leake	22,840	11	2,232	22	1,060	38	384	52	124	0	143	-19
Marion	23,417	12	2,891	29	1,414	51	582	79	170	0	297	-127
Neshoba	25,816	13	2,778	28	1,278	46	530	72	158	3	340	-185
Newton	18,408	9	2,085	21	1,105	40	456	62	131	0	180	-49
Pearl River	50,628	25	6,906	69	3,080	111	946	128	333	6	306	21
Perry	10,266	5	1,307	13	686	25	194	26	69	0	60	9
Scott	24,545	12	2,473	25	1,210	44	452	61	142	0	162	-20
Smith	13,616	7	1,840	18	952	34	224	30	90	0	121	-31
Stone	18,729	9	2,035	20	890	32	228	31	93	40	103	-50
Wayne	17,635	9	2,009	20	1,068	38	357	48	116	0	90	26
District Total	**901,367**	**451**	**100,344**	**1,003**	**47,755**	**1,719**	**16,195**	**2,186**	**5,360**	**328**	**6,124**	**-1,092**

205 Policy Statement Regarding Certificate of Need Applications for a Pediatric Skilled Nursing Facility

1. The 1993 Mississippi Legislature authorized MSDH to issue a Certificate of Need for the construction of a pediatric skilled nursing facility not to exceed sixty (60) new beds.

2. A pediatric skilled nursing facility is defined as an institution or a distinct part of an institution that is primarily engaged in providing inpatients skilled nursing care and related services for persons under twenty-one (21) years of age who require medical, nursing care, or rehabilitation services.

3. MSDH will review applications for the construction of pediatric skilled nursing facility beds using the general CON review criteria and standards contained in the *Mississippi Certificate of Need Review Manual*, criteria and standards for nursing homes and ID/DD facilities contained in the *State Health Plan*, and all adopted rules, procedures, and plans of MSDH.

4. Effective April 12, 2002, no health care facility shall be authorized to add any beds or convert any beds to another category of beds without a Certificate of Need under the authority of Miss. Code Ann. Section 41-7-191(1)(c).

5. Effective March 4, 2003, if a health care facility has voluntarily delicensed some of its existing bed complement, it may later relicense some or all of its delicensed beds without the necessity of having to acquire a CON. The facility must submit a letter requesting that the beds be placed in abeyance. MSDH shall maintain a record of the delicensing health care facility and its voluntarily delicensed beds and continue counting those beds as part of the state's total bed count for health care planning purposes.

206 Certificate of Need Criteria and Standards for Nursing Home Care Services for Intellectually Disabled and other Developmentally Disabled Individuals

206.1 Policy Statement Regarding Certificate of Need Applications for the Offering of Nursing Home Care Services for Intellectually Disabled and Other Developmentally Disabled Individuals

1. <u>Legislation</u>

   a. The 1990 Mississippi Legislature imposed a permanent moratorium which prohibits the MSDH from granting approval for or issuing a CON to any person proposing the new construction, addition to, or expansion of an intermediate care facility for the intellectually disabled (ICF/ID).

   b. Effective July 1, 1990, any health care facility defined as a psychiatric hospital, skilled nursing facility, intermediate care facility, intermediate care facility for the intellectually disabled, or psychiatric residential treatment facility which is owned by the State of Mississippi and under the direction and control of the Mississippi Department of Mental Health is exempted from the requirement of the issuance of a CON under Section 41-7-171 et seq., for projects which involve new construction, renovation, expansion, addition of new beds, or conversion of beds from one category to another in any such defined health care facility.

c. Effective April 12, 2002, no health care facility shall be authorized to add any beds or convert any beds to another category of beds without a CON.

d. Effective March 4, 2003, if a health care facility has voluntarily delicensed some of its existing bed complement, it may later relicense some or all of its delicensed beds without the necessity of having to acquire a CON. The facility must submit a letter requesting that the beds be placed in abeyance. MSDH shall maintain a record of the delicensing health care facility and its voluntarily delicensed beds and continue counting those beds as part of the state's total bed count for health care planning purposes.

2. ID/DD Long-Term Care Planning Districts (ID/DD LTCPD): The need for additional ID/DD nursing home care beds shall be based on the ID/DD LTCPDs as outlined on Map 2-2.

3. Bed Need: The need for ID/DD nursing home care beds is established at one bed per 1,000 population less than 65 years of age.

4. Population Projections: MSDH shall use population projections as presented in Table 2-3 when calculating bed need.

5. Bed Limit: No ID/DD LTCPD shall be approved for more than its proportioned share of needed ID/DD nursing home care beds. No application shall be approved which would over-bed the state as a whole.

6. Bed Inventory: MSDH shall review the need for additional ID/DD nursing home care beds utilizing the most recent information available regarding the inventory of such beds.

206.2 Certificate of Need Criteria and Standards for Nursing Home Beds for Intellectually Disabled and Other Developmentally Disabled Individuals

If the legislative moratorium were removed or partially lifted, MSDH would review applications for ID/DD nursing home care beds under the statutory requirements of Sections 41-7-173 (h) subparagraph (viii), 41-7-191, and 41-7-193, Mississippi Code 1972, as amended. MSDH will also review applications for Certificate of Need according to the applicable policy statements contained in this *Plan;* the general criteria as listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

Certificate of Need review is required for the offering of ID/DD nursing home care services, as defined, if the capital expenditure exceeds $5,000,000; if the licensed bed capacity is increased through the conversion or addition of beds; or if ID/DD nursing home care services have not been provided on a regular basis by the proposed provider of such services within the period of twelve (12) months prior to the time such services would be offered. Certificate of Need review is required for the construction, development, or otherwise establishment of new ID/DD nursing home care beds regardless of capital expenditure.

Need Criterion 1: ID/DD Nursing Home Care Bed Need

The applicant shall document a need for ID/DD nursing home care beds using the need methodology as presented below. The applicant shall document in the application the following**:**

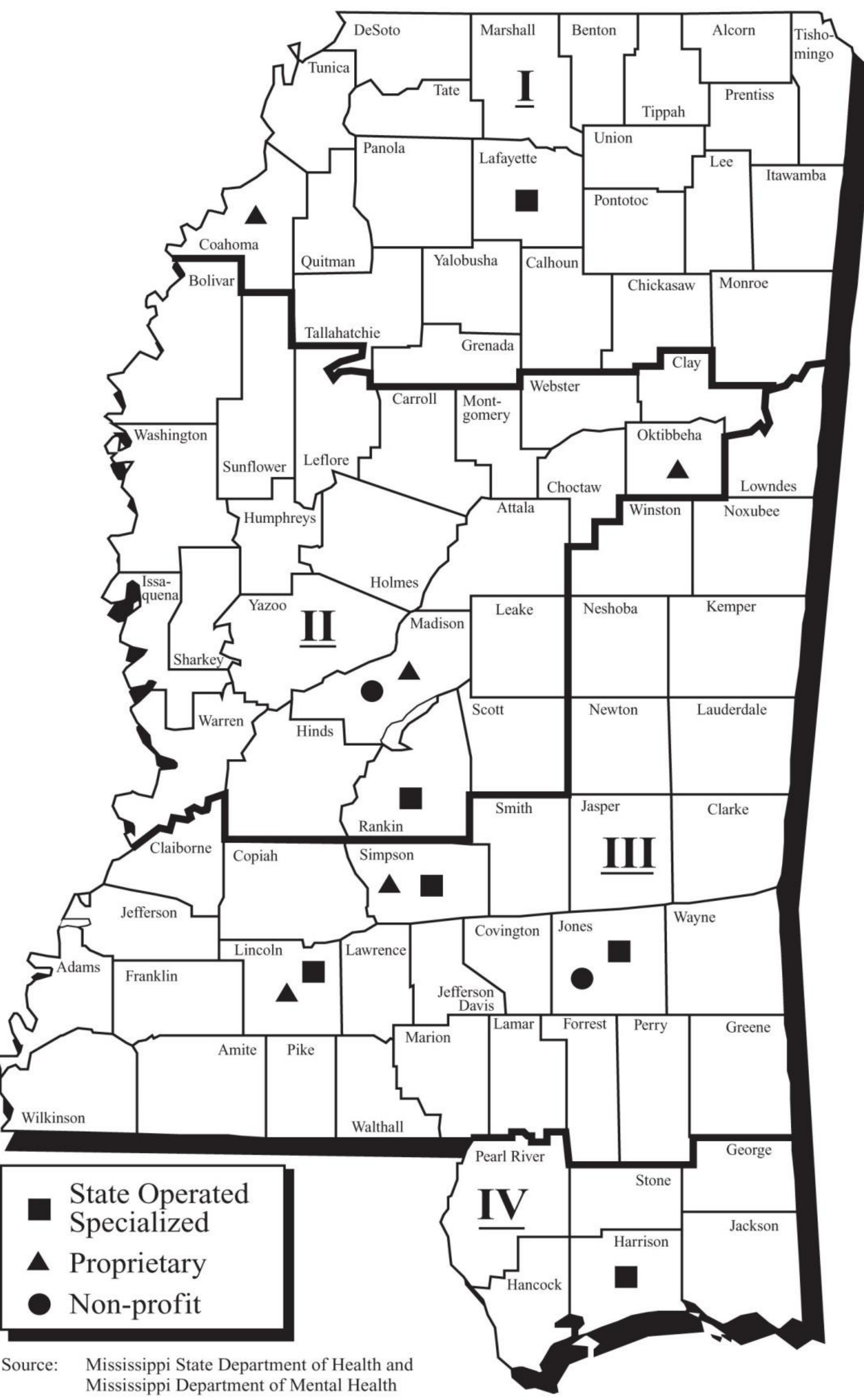
a. Using the ratio of one bed per 1,000 population under sixty-five (65) years of age, the state as a whole must show a need; and

b. The ID/DD Long-Term Care Planning District (LTCPD) where the proposed facility/beds/services are to be located must show a need.

Need Criterion 2: Number of Beds to be Constructed, Converted, and/or Licensed
The applicant shall document the number of beds that will be constructed, converted and/or licensed as offering ID/DD nursing home care services.

Need Criterion 3: Facilities Proposing to Add Fifteen or Less ID/DD Beds
MSDH shall give priority consideration to those CON applications proposing the offering of ID/DD nursing home care services in facilities which are fifteen (15) beds or less in size.

Map 2-2
Intellectually Disabled/Developmentally Disabled Long-Term Care Planning Districts and Location of Existing Facilities (ICF/MR – Licensed)



Source: Mississippi State Department of Health and Mississippi Department of Mental Health

Table 2-3
2018 Projected ID/DD Nursing Home Bed Need
(1 Bed per 1,000 Population Aged 65 and Under)

	2017 Population <65	2016 Licensed Beds	Projected MR/DD Bed Need [1]	Difference [1]
Mississippi	**2,614,616**	**2,434**	**2,615**	**181**
District I	**667,451**	**585**	**667**	**82**
Alcorn	31,797		32	32
Benton	7,708		8	8
Calhoun	12,099		12	12
Chickasaw	13,194		13	13
Coahoma	22,821	132	23	-109
DeSoto	150,179		150	150
Grenada	17,038		17	17
Itawamba	19,425		19	19
Lafayette	48,272	453	48	-405
Lee	75,014		75	75
Marshall	32,780		33	33
Monroe	30,279		30	30
Panola	30,228		30	30
Pontotoc	28,134		28	28
Prentiss	21,020		21	21
Quitman	6,805		7	7
Tallahatchie	14,539		15	15
Tate	27,054		27	27
Tippah	19,494		19	19
Tishomingo	15,693		16	16
Tunica	10,219		10	10
Union	23,733		24	24
Yalobusha	9,926		10	10

[1] Data may not equal totals due to rounding.

Table 2-3 (continued)
2018 Projected ID/DD Nursing Home Bed Need
(1 Bed per 1,000 Population Aged 65 and Under)

	2017 Population <65	2016 Licensed Beds	Projected MR/DD Bed Need [1]	Difference [1]
District II	**867,483**	**707**	**867**	**160**
Attala	15,635		16	16
Bolivar	24,941		25	25
Carroll	8,081		8	8
Choctaw	6,024		6	6
Clay	16,022		16	16
Hinds	223,398		223	223
Holmes	15,090		15	15
Humphreys	7,770		8	8
Issaquena	1,032		1	1
Leake	22,840		23	23
Leflore	24,713		25	25
Lowndes	51,902		52	52
Madison	99,184	152	99	-53
Montgomery	7,943		8	8
Oktibbeha	44,558	140	45	-95
Rankin	134,240	415	134	-281
Scott	24,545		25	25
Sharkey	3,927		4	4
Sunflower	23,831		24	24
Warren	41,589		42	42
Washington	37,011		37	37
Webster	8,557		9	9
Yazoo	24,650		25	25

[1] Data may not equal totals due to rounding.

Table 2-3 (continued)
2018 Projected ID/DD Nursing Home Bed Need
(1 Bed per 1,000 Population Aged 65 and Under)

	2017 Population <65	2016 Licensed Beds	Projected MR/DD Bed Need [1]	Difference [1]
District III	**653,201**	**922**	**653**	**-269**
Adams	25,395		25	25
Amite	9,870		10	10
Claiborne	8,455		8	8
Clarke	12,620		13	13
Copiah	24,822		25	25
Covington	16,503		17	17
Forrest	66,372		66	66
Franklin	6,434		6	6
Greene	9,842		10	10
Jasper	13,706		14	14
Jefferson	6,261		6	6
Jefferson Davis	8,898		9	9
Jones	58,640	482	59	-423
Kemper	8,551		9	9
Lamar	54,386		54	54
Lauderdale	68,825		69	69
Lawrence	10,720		11	11
Lincoln	29,981	176	30	-146
Marion	23,417		23	23
Neshoba	25,816		26	26
Newton	18,408		18	18
Noxubee	9,833		10	10
Perry	10,266		10	10
Pike	34,705		35	35
Simpson	23,158	264	23	-241
Smith	13,616		14	14
Walthall	12,563		13	13
Wayne	17,635		18	18
Wilkinson	8,045		8	8
Winston	15,458		15	15

[1] Data may not equal totals due to rounding.

Table 2-4 (continued)
2018 Projected ID/DD Nursing Home Bed Need
(1 Bed per 1,000 Population aged 65 and Under)

	2017 Population <65	2016 Licensed Beds	Projected MR/DD Bed Need [1]	Difference 1
District IV	**426,481**	**220**	**426**	**206**
George	20,111		20	20
Hancock	38,682		39	39
Harrison	175,018	220	175	-45
Jackson	123,313		123	123
Pearl River	50,628		51	51
Stone	18,729		19	19

[1] Data may not equal totals due to rounding

Chapter 03 Mental Health

This chapter addresses mental illness, alcoholism, drug abuse, and developmental disabilities. These conditions result in social problems of such magnitude that mental health ranks as one of the state's priority health issues. The Mississippi Department of Mental Health (DMH), regional Community Mental Health Centers (CMHCs) and licensed private sector facilities provide most of the state's mental health services. Unless otherwise specified, information in this chapter is limited to the programs and services of private non-governmental entities.

300 Mississippi Department of Mental Health

State law designates DMH as the agency to coordinate and administer the delivery of public mental health services, alcohol/drug abuse services, and services for persons with intellectual/developmental disabilities throughout the state, as well as community-based day programs for individuals with Alzheimer's disease and other dementia. Responsibilities of DMH include: (a) state-level planning and expansion of all types of mental health, intellectual/developmental disabilities and substance abuse services, (b) standard-setting and support for community mental health and intellectual/developmental disabilities and alcohol/drug abuse programs, (c) state liaison with mental health training and educational institutions, (d) operation of the state's psychiatric facilities, and (e) operation of the state's facilities for individuals with intellectual/developmental disabilities.

Regional community mental health centers provide a major component of the state's mental health services. Fourteen centers currently operate in the state's mental health service areas, and most centers have satellite offices in other counties. Each center must meet federal and state program and performance standards. The major objectives of the regional community mental health centers include: (a) providing accessible services to all citizens with mental and emotional problems; (b) reducing the number of initial admissions to state hospitals; and (c) preventing re-admissions through supportive aftercare services. These centers are a vital element in the plan to provide an integrated system of mental health services to all residents of Mississippi.

301 Mental Health Needs in Mississippi

The prevalence of mental illness, although difficult to assess, serves as a good indicator of the volume of need for mental health services in a given population. The negative social stigma associated with the term "mental illness" also obstructs efforts to measure the true incidence/ prevalence of most types of mental illness and behavior disorders and the need for mental health services.

Using the methodology updated by the federal Center for Mental Health Services (CMHS) for estimated prevalence of serious mental illness among adults (*Federal Register*, June 24, 1999) and U.S. Bureau of the Census 2010 population estimates, DMH estimates the prevalence of serious mental illness among adults in Mississippi, ages eighteen (18) years and above, as 5.4 percent or 119,434 individuals. The same methodology estimates the national prevalence for the same age group also as 5.4 percent.

In Fiscal Year 2017, a total of 63,207 adults received mental health services through the fourteen (14) CMHCs and the state's psychiatric hospitals, including East Mississippi State Hospital's group homes and Central Mississippi Residential Center.

301.01 Mental Health Needs of Children/Adolescents

Precise data concerning the size of the country's population of children and adolescents with emotional or mental disorders remain difficult to obtain. The National Institute of Mental Health estimates the prevalence of any mental disorder nationally among adolescents, aged thirteen (13) to eighteen (18), is 49.5 percent with an estimated 22.2 percent having a severe impairment. The methodology adjusts for socio-economic differences across states. In Fiscal Year 2017, the public community mental health system served 34,795 children and adolescents with serious emotional disturbance. (Note: Totals might include some duplication across community mental health centers and other nonprofit programs).

301.02 National Survey on Drug Use and Health for Mississippi

According to the Substance Abuse and Mental Health Administration's (SAMHSA) *2015-2016 National Survey on Drug Use and Health* (most available data), 8.04 percent of Mississippians twelve (12) years or older were past month illicit drug users. Past month marijuana use among Mississippians twelve (12) years and older was four-six percent (46%). Approximately 36.94 percent of Mississippians twelve (12) years and older were past-month alcohol users. Past month binge alcohol use among Mississippians twelve (12) years and older was 19.21 percent.

301.03 Developmental Disabilities

The nationally-accepted prevalence rate estimate used by the Administration on Developmental Disabilities for estimating the state rate is 1.8 percent of the general population. By applying the 1.8 percent prevalence rate to Mississippi's 2023 population projections, the results equal 56,487 individuals who may have a developmental disability. The intellectual and/or developmental disability bed need determinations can be found in Chapter 2 of this *Plan.*

302 Adult Psychiatric Services (State-Operated and Private)

Mississippi's four state-operated hospitals and eight crisis stabilization units provide the majority of inpatient psychiatric care and services throughout the state. In FY 2017, the Mississippi State Hospital at Whitfield reported a total of 154 active psychiatric licensed beds; East Mississippi State Hospital at Meridian reported 150 psychiatric licensed beds, North Mississippi State Hospital in Tupelo reported fifty (50) licensed beds, and South Mississippi State Hospital in Purvis reported forty-five (45) licensed beds. The four facilities reported 2,904 adults received acute psychiatric services at the hospitals in FY 2017, 1,141 at the Mississippi State Hospital at Whitfield, 551 at the East Mississippi State Hospital, 619 at the North Mississippi State Hospital, and 593 at the South Mississippi State Hospital. Additionally, a total of 3,129 adults were served through the eight crisis centers in FY 2017.

Because the medically indigent have difficulty accessing private psychiatric facilities in their respective communities, many private facilities have low occupancy rates. State institutions provide the majority of inpatient care for the medically indigent. To address this problem, the Legislature provided funding for seven state Crisis Intervention Centers to function as satellites to existing facilities operated by DMH. These centers are operational in Brookhaven, Corinth, Newton, Laurel, Cleveland, Grenada, Gulfport, and Batesville. DMH contracted with Life Help (Region VI Community Mental Health Center) to operate the crisis center in Grenada beginning September 1,

2009. This pilot program began with the purpose of studying the potential for increased efficiencies and improved access to services for individuals without them being involuntarily committed.

All of the centers include sixteen (16) beds and one (1) isolation bed. The role of these centers in the regional system is to provide stabilization and treatment services to persons who are in a psychiatric crisis. Beginning July 1, 2010, DMH transitioned five (5) of the remaining state-operated crisis centers (now called Crisis Stabilization Units) to regional community mental health centers located in Batesville, Brookhaven, Cleveland, Corinth and Laurel. In 2017, DMH transitioned the remaining crisis center in Newton to Weems Community Mental Health Center. The Gulfport center is operated by Gulf Coast Mental Health (Region XIII CMHC) and is partially funded by a grant from DMH. Timber Hills operates a Crisis Stabilization Unit (CSU) in Batesville and Corinth. Region 8 Mental Health Services operates the Brookhaven CSU. Delta Community Mental Health (Region V CMHC) operates the Cleveland CSU. Pine Belt Mental Healthcare Resources operates the Laurel CSU. All CSUs accept voluntary and involuntary admissions twenty-four (24) hours a day, seven (7) days a week.

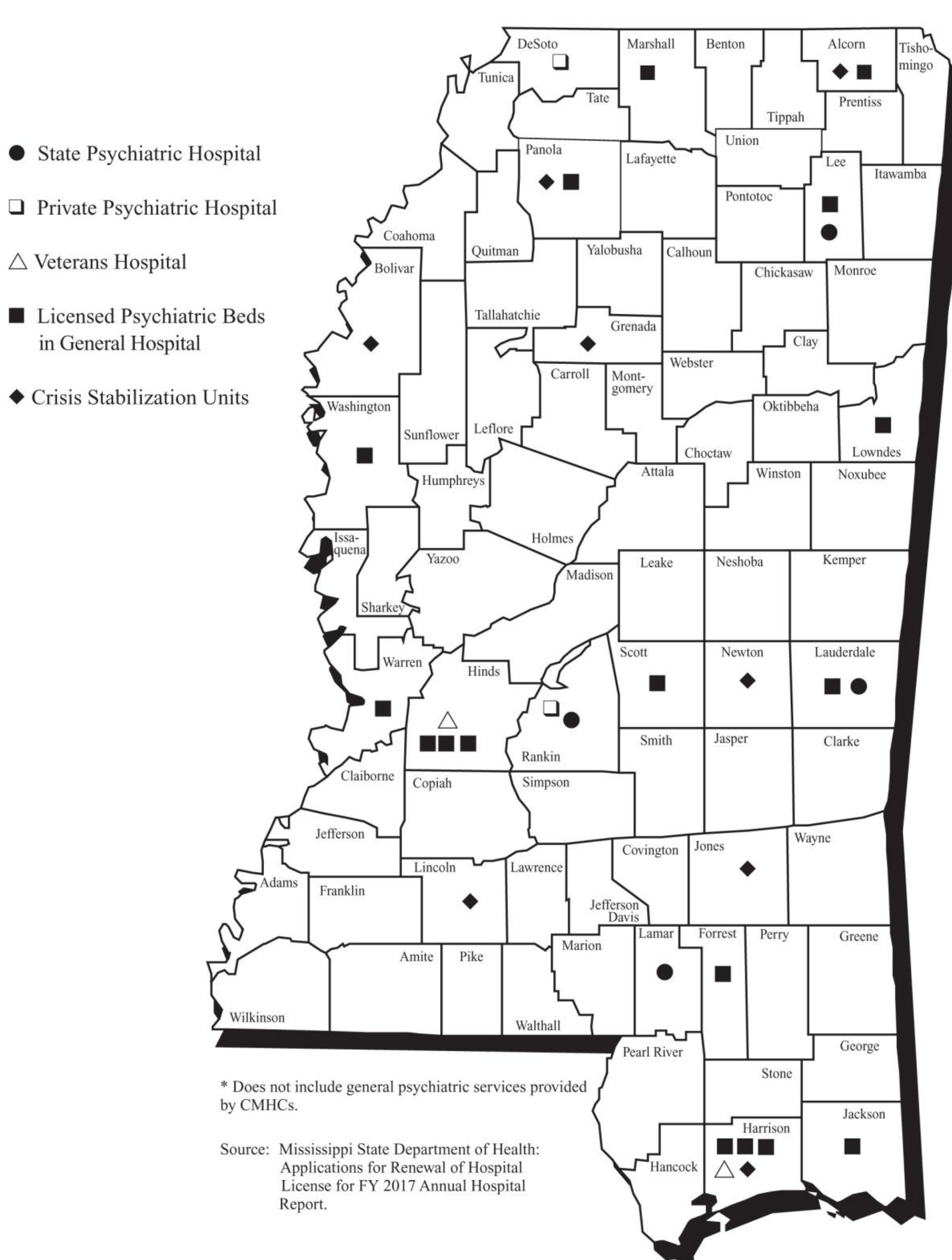
Mississippi has nineteen (19) adult psychiatric facilities, with a capacity of 636 licensed beds for adult psychiatric patients, including fifteen (15) beds held in abeyance by MSDH distributed throughout the state. The criteria and standards section of this chapter provides a full description of the services that private facilities must provide. Map 3-1 shows the location of inpatient facilities in Mississippi serving adult acute psychiatric patients; Table 3-1 shows utilization statistics.

Table 3-1
Acute Adult Psychiatric Bed Utilization
FY 2016

Facility	County	Licensed Beds	CON Beds	Abeyance Beds	Inpatient Days	Occupancy Rate (%)	ALOS
Alliance Health Center	Lauderdale	38			12,693	91.51	8.49
Alliance Healthcare System, Inc. *	Marshall	20			1,335	18.29	11.55
Baptist Memo. Hospital-Golden Triangle	Lowndes	22		13	9,462	117.83	5.34
Brentwood Behavioral Health Care	Rankin	31		2	6,208	54.87	7.39
Delta Regional Medical Center- West	Washington	9			2,188	66.61	4.14
Forrest General Hospital	Forrest	64			11,692	50.05	3.69
Garden Park Medical Center **	Harrison	9			0	0.00	0.00
Magnolia Regional Health Center	Alcorn	19			5,180	74.69	5.89
Memorial Hospital at Gulfport	Harrison	59			3,875	17.99	7.99
Merit Health Biloxi	Harrison	34			10,505	84.65	7.56
Merit Health Central	Hinds	47			10,261	59.81	4.87
Merit Health River Region	Warren	40			4,352	29.81	6.56
North Miss Medical Center	Lee	33			10,561	87.68	6.46
Panola Medical Center	Panola	25			5,771	63.24	6.30
Parkwood Behavorial HS-Olive Branch	DeSoto	42			12,424	81.04	9.49
S.E. Lackey Memorial Hospital	Scott	10			1,682	46.08	11.71
Singing River Hospital	Jackson	30			2,682	24.49	4.29
St. Dominic Jackson- Memorial Hospital	Hinds	83			17,950	59.25	5.25
University of Mississippi Medical Center	Hinds	21			7,150	93.28	5.90
Total/Average Adult Psychiatric Beds Rates		**636**	**0**	**15**	**135,971**	**59.01**	**6.47**

*Alliance Healthcare was CON approved in March 2018 to convert 5 Adult CDU beds to 5 Adult Acute Psychiatric Beds.
**Garden Park Medical Center was CON approved in February 2014 to establish an inpatient program for PTSD and add 9 adult psychiatric beds.
Sources: Applications for Renewal of Hospital License for FY 2016 Annual Hospital Report

Map 3-1
Operational and Proposed Inpatient Facilities
Serving Adult Acute Psychiatric Patients*



303 Child/Adolescent Psychiatric Services

Ten (10) facilities, with a total of 330 licensed beds, provide acute psychiatric inpatient services for children and adolescents. Map 3-2 shows the location of inpatient facilities that serve adolescent acute psychiatric patients; Table 3-2 gives utilization statistics. The criteria and standards section of this chapter provides a further description of the programs that inpatient facilities offering child/adolescent psychiatric services must provide. The Mississippi State Legislature has placed a moratorium on the approval of new Medicaid-certified child/adolescent beds within the state.

DMH operates a separately-licensed sixty (60) bed facility (Oak Circle Center) at Mississippi State Hospital to provide short-term inpatient psychiatric treatment for children and adolescents between the ages of four (4) and seventeen (17). East Mississippi State Hospital operates a fifty (50) bed psychiatric and chemical dependency treatment unit for adolescent males.

Table 3-2
Acute Adolescent Psychiatric Bed Utilization
FY 2016

Facility	County	Licensed Beds	CON Beds	Abeyance Beds	Inpatient Days	Occupancy Rate(%)	ALOS
Alliance Health Center	Lauderdale	30			6,931	63.30	8.59
Brentwood Behavioral Healthcare of MS	Rankin	74	15		19,718	73.00	10.21
Diamond Grove Center	Winston	25	4		7,568	82.94	9.55
Forrest General Hospital	Forrest	16			6,461	110.63	6.43
Memorial Hospital at Gulfport **	Harrison	30			3,542	32.35	5.58
Merit Health Biloxi	Harrison	11			1,141	28.42	7.13
Merit Health River Region	Warren	20			581	7.96	8.10
Oak Circle Center	Rankin	60			9822	44.85	37.87
Parkwood Behavioral Health System	DeSoto	52			11794	62.14	8.35
University of Mississippi Medical Center	Hinds	12			2,693	61.48	11.16
Total/Average Adolescent Psychiatric Beds		**330**	**19**	**0**	**70,251**	**56.71**	**11.30**

**As of May 27, 2018, Memorial Hospital at Gulfport transferred 15 CON approved beds to Brentwood Behavioral Healthcare of MS and 4 CON approved beds to Diamond Grove Center.

Sources: Applications for Renewal of Hospital License for FY 2016 Annual Hospital Report

Map 3-2
Operational and Proposed Inpatient Facilities Serving Adolescent Acute Psychiatric Patients*

- ⬬ State Psychiatric Hospital
- ▲ Private Psychiatric Hosptial
- ■ Licensed Psychiatric Beds General Hospital
- □ CON has been issued

* Does not include general psychiatric services provided by CMHCs.

Source: Mississippi State Department of Health: Applications for Renewal of Hospital License for Calendar Year 2016 and FY 2017 Annual Hospital Report.

304 Psychiatric Residential Treatment Facilities

Psychiatric Residential Treatment Facilities (PRTF) serve emotionally disturbed children and adolescents who are not in an acute phase of illness that requires the services of a psychiatric hospital, but who need restorative residential treatment services. "Emotionally disturbed" in this context means a condition exhibiting certain characteristics over a long period of time and to a marked degree. The criteria and standards section of this chapter describes these facilities more fully. Table 3-3 shows seven (7) facilities are in operation with a total of 318 PRTF beds. Map 3-3 presents the location of the private psychiatric residential treatment facilities throughout the state. Children and adolescents who need psychiatric residential treatment beyond the scope of these residential treatment centers are served in acute psychiatric facilities or sent out of the state to other residential treatment facilities.

Table 3-3
Private Psychiatric Residential Treatment Facility (PRTF)
Utilization
FY 2016

Facility	County	Licensed Beds	CON Approved Beds	Occupancy Rate (%)	Average Daily Census
Parkwood BHS	DeSoto	40	0	94.74	37.90
Canopy Childrens Solution	Harrison	20	0	58.00	11.56
Canopy Childrens Solution - Jackson	Hinds	60	0	96.50	59.90
The Crossings	Lauderdale	60	0	100.00	60.00
Millcreek of Pontotoc	Pontotoc	51	0	100.00	51.00
Millcreek PRTF	Simpson	57	0	99.70	56.84
Diamond Grove Center	Winston	30	0	98.12	29.44
Total PRTF Beds		**318**			

Source: Mississippi State Department of Health, 2016 Report on Institutions for the Aged or Infirm, and Division of Health Planning and Resource Development

DMH operates a specialized thirty-two (32) bed treatment facility (ICF/IID) in Brookhaven for youth with an intellectual and/or developmental disability who are thirteen (13) years, but less than twenty-one (21) years of age. A similar facility, licensed as a psychiatric residential treatment facility, is located in Harrison County for youth who have also been diagnosed with a mental disorder. Adolescents appropriate for admission are thirteen (13) years, but less than twenty-one (21) years of age, who present with a diagnosis of a severe emotional disturbance and need psychiatric residential care.

Map 3-3
Private Psychiatric Residential Treatment Facilities

■ Licensed Psychiatric Residential Treatment Facility

□ CON has been issued

Source: 2016 Report on Institutions for the Aged or Infirm

305 Alcohol and Substance Abuse Disorder Services

305.01 Alcohol and Substance Abuse Disorders

Alcohol and other drug problems cause pervasive effects: biological, psychological, and social consequences for the user; psychological and social effects on family members and others; increased risk of injury and death to self, family members, and others (especially by accidents, fires, or violence); and derivative social and economic consequences for society at large.

The location of facilities with alcohol and substance use programs is shown on Maps 3-4 and 3-5. Each of the fourteen (14) regional community health centers provide a variety of alcohol and drug services, including residential and transitional treatment programs, along with recovery support services. Tables 3-4 and 3-5 show the utilization of these facilities for adult and adolescent chemical dependency services, respectively. A total of 615 residential treatment beds are available throughout the state. The community mental health centers (CMHCs) with whom DMH contracts are the foundation and primary service providers of the public substance use disorders services delivery system. Each CMHC serves a designated number of Mississippi counties. There are sixty-seven (67) community-based satellite centers throughout the state which allow greater access to services by the area's residents. The goal is for each CMHC to have a full range of treatment options available for citizens in its region. Other nonprofit service agencies/organizations, which make up a smaller part of the service system, also receive funding through the DMH to provide community-based services. Many of these free-standing nonprofit organizations receive additional funding from other sources such as grants from other state agencies, community service organizations, donations, etc.

Substance use disorder services usually include: (1) alcohol, tobacco, and other drug prevention services; (2) general outpatient treatment including individual, group, and family counseling; (3) recovery support (continuing care) planning and implementation services; (4) primary residential treatment services (including withdrawal management); (5) transitional residential treatment services; (6) vocational counseling and employment seeking assistance; (7) emergency services (including a 24-hour hotline); (8) educational programs targeting recovery from substance use disorders which include understanding the disease, the recovery process, relapse prevention, and anger management; (9) recreational and social activities presenting alternatives to continued substance use and emphasizing the positive aspects of recovery; (10) 10-15 week intensive outpatient treatment programs for individuals who are in need of treatment but are still able to maintain job or school responsibilities; (11) community-based residential substance use disorders treatment for adolescents; (12) specialized women's services; (13) priority treatment for pregnant/parenting women; (14) services for individuals with a co-occurring disorder of substance use disorder and serious mental illness; and, (15) employee assistance programs.

The Mississippi State Legislature has placed a moratorium on the approval of new Medicaid-certified child/adolescent chemical dependency beds within the state.

Table 3-4
Adult Chemical Dependency Unit
Bed Utilization
FY 2016

Facility	County	Licensed Beds	CON Approved Beds	Average Daily Census	Occupancy Rate (%)	ALOS
Alliance Health Center	Lauderdale	8		8.00	100	5
Baptist Memorial Hospital - Golden Triangle	Lowndes	8		0.00	0.00	0.00
Delta Regional Medical Center- West Campus	Washington	7		0.78	11.15	2.94
Forrest General Hospital	Forrest	8		1.85	23.08	3.58
Merit Health River Region	Warren	28		12.75	45.52	6.86
Mississippi Baptist Medical Center	Hinds	77		0.00	0.00	0.00
North Mississippi Medical Center	Lee	33		3.35	10.14	6.46
Panola Medical Center	Panola	10		4.28	42.77	4.68
Parkwood Behavioral Health System	DeSoto	14		4.85	34.66	5.97
South Central Regional Medical Center	Jones	10		5.50	54.99	4.66
St. Dominic Jackson-Memorial Hospital	Hinds	35		0.00	0.00	0.00
Total/Average Adult CDU Bed Rates		**238**	**0**	**3.76**	**29.30**	**3.65**

*Brentwood Behavioral Healthcare of Rankin County will lease four beds from Mississippi Baptist Medical Center (MBMC). MBMC's licensed bed count will decrease from 77 to 73. MBMC has 13 beds that are not in use.

Sources: Applications for Renewal of Hospital License for FY 2016 Annual Hospital Report

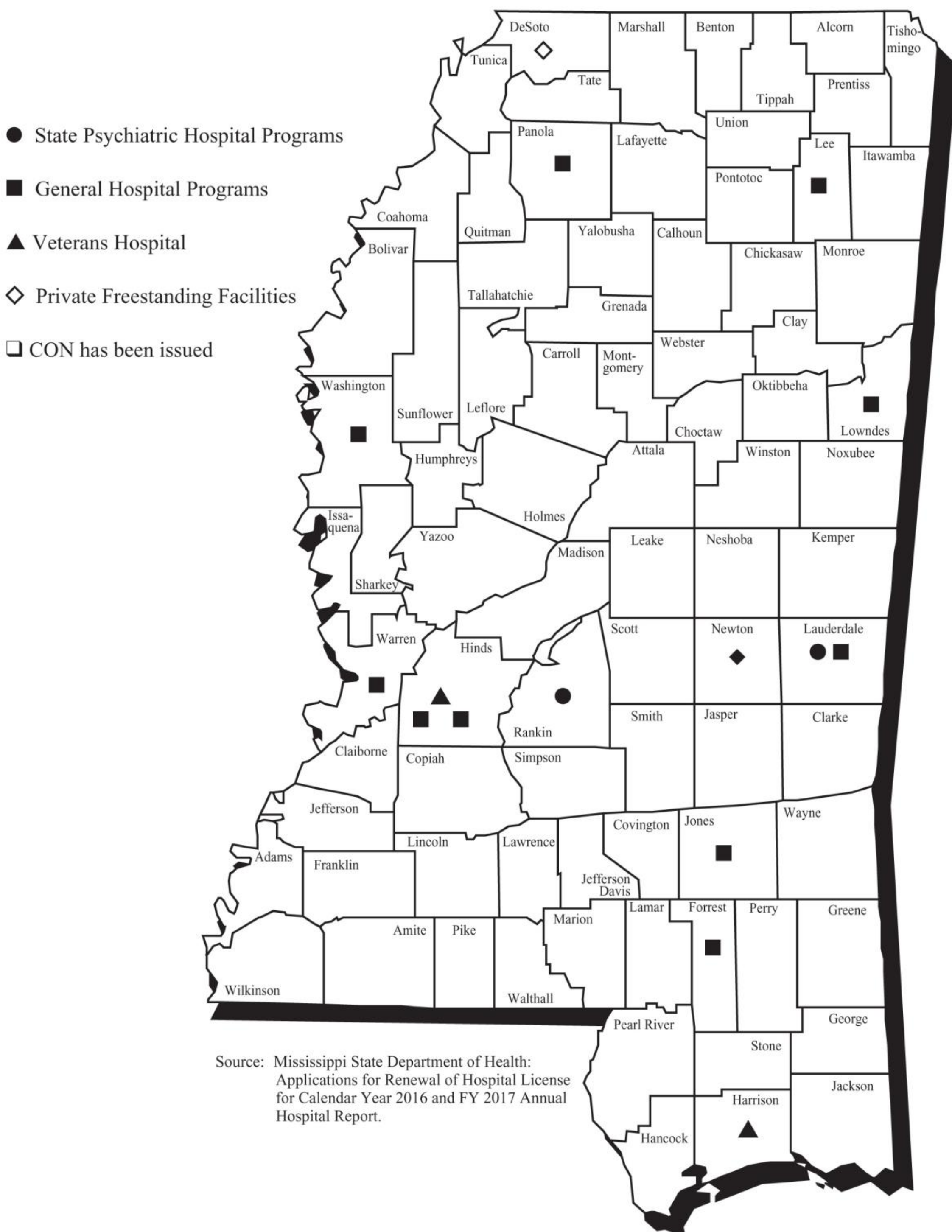
Table 3-5
Adolescent Chemical Dependency Unit
Bed Utilization
FY 2016

Facilities	County	Licensed Beds	CON Approved Beds	Average Daily Census	Occupancy Rate (%) *	ALOS
Memorial Hospital at Gulfport	Harrison	20		1.08	5.41	5.74
Merit Health River Region *	Warren	12		-	-	-
Mississippi Baptist Medical Center *	Hinds	20		-	-	-
Total/ AverageAdolescent CDU Bed Rates		**52**		**1.08**	**5.41**	**5.74**

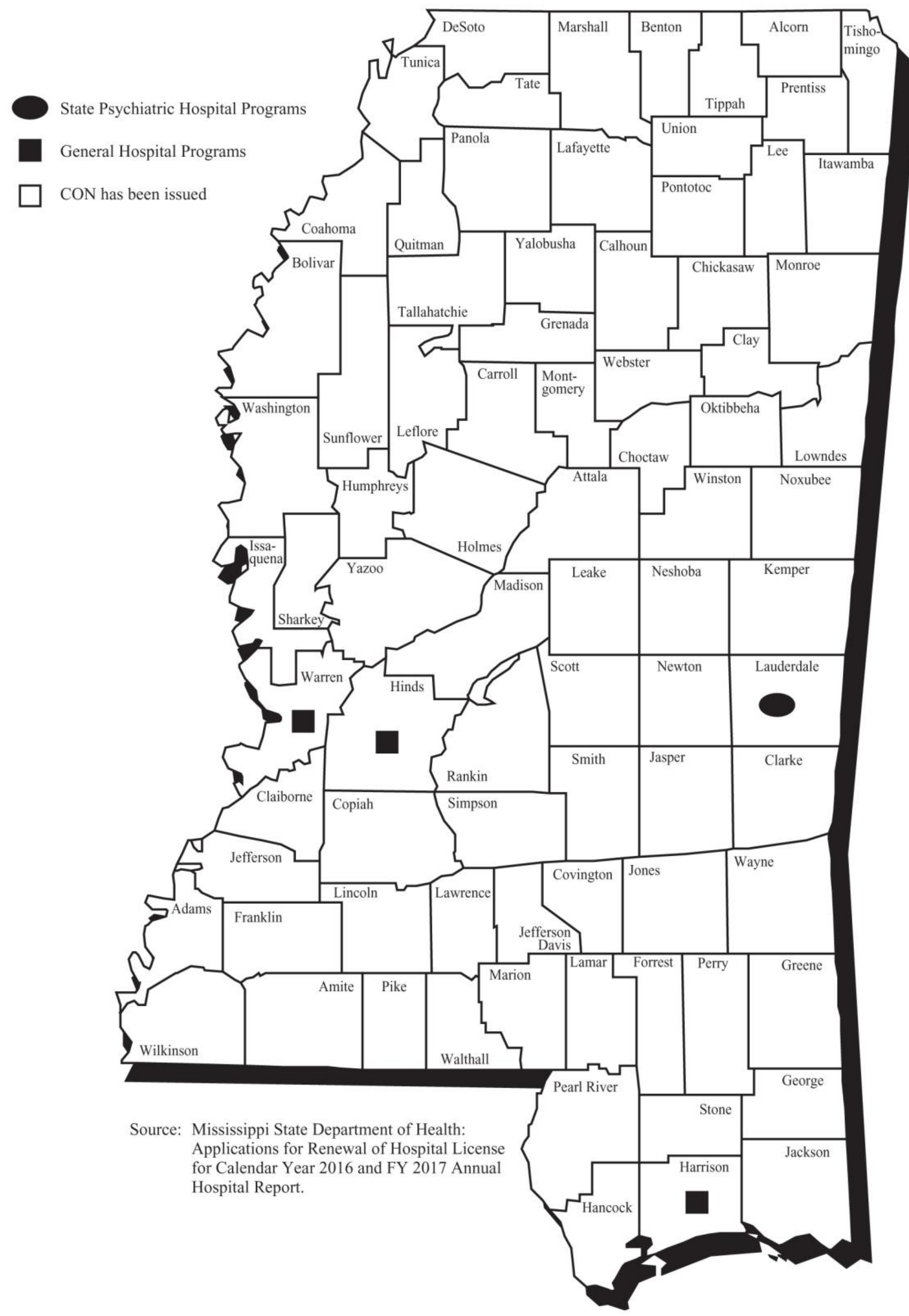
*Mississippi Baptist Medical Center and Merit Health River Region have 20 and 12 licensed adolescent CDU beds, respectively; however, Licensure data was not available for these units. Therefore, the occupancy rate is based on 20 beds instead of 52 beds.

Sources: Applications for Renewal of Hospital License for FY 2016 Annual Hospital Report

Map 3-4
Operational and Proposed Adult Chemical Dependency Programs and Facilities



Map 3-5
Operational and Proposed Adolescent Chemical Dependency Programs and Facilities



Source: Mississippi State Department of Health: Applications for Renewal of Hospital License for Calendar Year 2016 and FY 2017 Annual Hospital Report.

306 Certificate of Need Criteria and Standards for Acute Psychiatric, Chemical Dependency, and Psychiatric Residential Treatment Facility Beds/Services

Should MSDH receive a CON application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until MSDH has developed and adopted CON criteria and standards. If MSDH has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of MSDH.

306.01 Policy Statement Regarding Certificate of Need Applications for Acute Psychiatric, Chemical Dependency, and Psychiatric Residential Treatment Facility Beds/Services

1. Indigent/Charity Care: An applicant must provide a "reasonable amount" of indigent/charity care as described in Chapter 1 of this *Plan*.

2. Mental Health Planning Areas: MSDH shall use the state as a whole to determine the need for acute psychiatric beds/services, chemical dependency beds/ services, and psychiatric residential treatment beds/services. Tables 3-6, 3-7, and 3-8 give the statistical need for each category of beds.

3. Public Sector Beds: Because DMH is a public entity and directly operates facilities providing acute psychiatric, chemical dependency, and psychiatric residential treatment facility beds, the number of licensed beds operated by DMH shall not be counted in the bed inventory used to determine statistical need for additional acute psychiatric, chemical dependency, and psychiatric residential treatment facility beds.

4. Comments from DMH: MSDH shall solicit and take into consideration comments received from DMH regarding any CON application for the establishment or expansion of inpatient acute psychiatric, chemical dependency, and/or psychiatric residential treatment facility beds.

5. Separation of Adults and Children/Adolescents: Child and adolescent patients under eighteen (18) years of age must receive treatment in units that are programmatically and physically distinct from adult (18 plus years of age) patient units. A single facility may house adults as well as adolescents and children if both physical design and staffing ratios provide for separation.

6. Separation of Males and Females: Facilities must separate males and females age thirteen (13) and over for living purposes (e.g., separate rooms and rooms located at separate ends of the halls, etc.).

7. Patients with Co-Occurring Disorders: It is frequently impossible for a provider to totally predict or control short-term deviation in the number of patients with mixed psychiatric/ addictive etiology to their illnesses. Therefore, MSDH will allow deviations of up to twenty-five percent (25%) of the total licensed beds as "swing-beds" to accommodate patients having diagnoses of both psychiatric and substance abuse disorders. However, the provider must demonstrate to the Division of Licensure and Certification that the "swing-

bed" program meets all applicable licensure and certification regulations for each service offered, i.e., acute psychiatric, chemical dependency, and psychiatric residential treatment facility services, before providing such "swing-bed" services.

8. Comprehensive Program of Treatment: Any new mental health beds approved must provide a comprehensive program of treatment that includes, but is not limited to, inpatient, outpatient, and follow-up services, and in the case of children and adolescents, includes an educational component. The facility may provide outpatient and appropriate follow-up services directly or through contractual arrangements with existing providers of these services.

9. Medicaid Participation: An applicant proposing to offer acute psychiatric, chemical dependency, and/or psychiatric residential treatment facility services or to establish, expand, and/or convert beds under any of the provisions set forth in this section or in the service specific criteria and standards shall affirm in the application that:

   a. The applicant shall seek Medicaid certification for the facility/program at such time as the facility/program becomes eligible for such certification; and

   b. The applicant shall serve a reasonable number of Medicaid patients when the facility/program becomes eligible for reimbursement under the Medicaid Program. The application shall affirm that the facility will provide MSDH with information regarding services to Medicaid patients.

10. Licensing and Certification: All acute psychiatric, chemical dependency treatment, co-occurring disorders beds/services, and psychiatric residential treatment facility beds/services must meet all applicable licensing and certification regulations of the Division of Health Facilities Licensure and Certification. If licensure and certification regulations do not exist at the time the application is approved, the program shall comply with such regulations following their effective date.

11. Psychiatric Residential Treatment Facility: A psychiatric residential treatment facility (PRTF) is a non-hospital establishment with permanent licensed facilities that provides a twenty-four (24) hour program of care by qualified therapists including, but not limited to, duly licensed mental health professionals, psychiatrists, psychologists, psychotherapists, and licensed certified social workers, for emotionally disturbed children and adolescents referred to such facility by a court, local school district, or the Department of Human Services, who are not in an acute phase of illness requiring the services of a psychiatric hospital and who are in need of such restorative treatment services. For purposes of this paragraph, the term "emotionally disturbed" means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:

   a. An inability to learn which cannot be explained by intellectual, sensory, or health factors;

   b. An inability to build or maintain satisfactory relationships with peers and teachers;

   c. Inappropriate types of behavior or feelings under normal circumstances;

   d. A general pervasive mood of unhappiness or depression; or

e. A tendency to develop physical symptoms or fears associated with personal or school problems.

An establishment furnishing primarily domiciliary care is not within this definition.

12. Certified Educational Programs: Educational programs certified by the Department of Education shall be available for all school age patients. Also, sufficient areas suitable to meet the recreational needs of the patients are required.

13. Preference in CON Decisions: Applications proposing the conversion of existing acute care hospital beds to acute psychiatric and chemical dependency beds shall receive preference in CON decisions provided the application meets all other criteria and standards under which it is reviewed.

14. Dedicated Beds for Children's Services: It has been determined that there is a need for specialized beds dedicated for the treatment of children less than fourteen (14) years of age. Therefore, of the beds determined to be needed for child/adolescent acute psychiatric services and psychiatric residential treatment facility services, twenty-five (25) beds under each category, for a total of fifty (50) beds statewide, shall be reserved exclusively for programs dedicated to children under the age of fourteen (14).

15. CON Authority: Effective April 12, 2002, no health care facility shall be authorized to add any beds or convert any beds to another category of beds without a CON under the authority of Section 41-7-191(1)(c).

16. Delicensed/Relicensed Beds: Effective March 4, 2003, if a health care facility has voluntarily delicensed some of its existing bed complement, it may later relicense some or all of its delicensed beds without the necessity of having to acquire a CON. MSDH shall maintain a record of the delicensing health care facility and its voluntarily delicensed beds and continue counting those beds as part of the state's total bed count for health care planning purposes.

17. Reopening a Facility: A health care facility has ceased to operate for a period of sixty (60) months or more shall require a CON prior to reopening.

306.02 General Certificate of Need Criteria and Standards for Acute Psychiatric, Chemical Dependency, and/or Psychiatric Residential Treatment Facility Beds/Services

The Mississippi State Department of Health will review applications for a Certificate of Need for the establishment, offering, or expansion of acute psychiatric, chemical dependency treatment, and/or psychiatric residential treatment beds/services under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. The MSDH will also review applications for Certificate of Need according to the policies in this *Plan*; the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of the Mississippi State Department of Health; and the general and service specific criteria and standards listed below.

The offering of acute psychiatric, chemical dependency treatment, and/or psychiatric residential treatment facility services is reviewable if the proposed provider has not offered those services on a regular basis within the period of twelve (12) months prior to the time such services would be

offered. The construction, development, or other establishment of a new health care facility to provide acute psychiatric, chemical dependency treatment, and/or psychiatric residential treatment services requires CON review regardless of capital expenditure.

Need Criterion 1: Bed Need Requirements

a. **New/Existing Acute Psychiatric, Chemical Dependency, and/or Psychiatric Residential Treatment Facility Beds/Services:** The applicant shall document a need for acute psychiatric, chemical dependency, and/or psychiatric residential treatment facility beds using the appropriate bed need methodology as presented in this section under the service specific criteria and standards.

b. **Projects that do not involve the Addition of Acute Psychiatric, Chemical Dependency, and/or Psychiatric Residential Treatment Facility Beds:** The applicant shall document the need for the proposed project. Documentation may consist of, but is not limited to, citing of licensure or regulatory code deficiencies, institutional long-term plans duly adopted by the governing board, recommendations made by consultant firms, and deficiencies cited by accreditation agencies (JCAHO, CAP, etc.).

c. **Projects that Involve the Addition of Beds**: The applicant shall document the need for the proposed project. *Exception:* Notwithstanding the service specific statistical bed need requirements as stated in "a" above, MSDH may approve additional beds for facilities which have maintained an occupancy rate of at least eighty percent (80%) for the most recent twelve (12) month licensure reporting period or at least seventy percent (70%) for the most recent two (2) years.

d. **Child Psychiatry Fellowship Program**: Notwithstanding the service specific statistical bed need requirements as stated in "a" above, MSDH may approve a fifteen (15) bed acute child psychiatric unit at the University of Mississippi Medical Center for children aged four (4) to twelve (12) to provide a training site for psychiatric residents.

e. **Establishment or Addition of Programs for the Exclusive Treatment of Adults for Primary Psychiatric Diagnosis of Post Traumatic Stress Disorder (PTSD)**: Notwithstanding the service specific statistical bed need requirements as stated in "a" above, MSDH may approve service and/or beds for the exclusive treatment of adults for primary psychiatric diagnosis of PTSD from Military Service for those adults covered by Veterans Health Care System or indigent/charity care. The applicant shall document the need for the proposed project and justify the number of inpatient beds to be dedicated for such purpose.

Need Criterion 2: Data Requirements
The application shall affirm that the applicant will record and maintain, at a minimum, the following information regarding charity care and care to the medically indigent and make such information available to MSDH within fifteen (15) business days of request:

a. Source of patient referral;

b. Utilization data, e.g., number of indigent admissions, number of charity admissions, and inpatient days of care;

c. Demographic/patient origin data;

d. Cost/charges data; and

e. Any other data pertaining directly or indirectly to the utilization of services by the medically indigent or charity patients that MSDH request.

Need Criterion 3: Referral/Admission of Charity/Indigent Patients
A CON applicant desiring to provide or to expand chemical dependency, psychiatric, and/or psychiatric residential treatment facility services shall provide copies of signed memoranda of understanding with Community Mental Health Centers and other appropriate facilities within their patient service area regarding the referral and admission of charity and medically indigent patients.

Need Criterion 4: Letters of Commitment
Applicants should also provide letters of comment from the Community Mental Health Centers, appropriate physicians, community and political leaders, and other interested groups that may be affected by the provision of such care.

Need Criterion 5: Non-Discrimination Provision
The application shall document that within the scope of its available services, neither the facility nor its participating staff shall have policies or procedures which would exclude patients because of race, color, age, sex, ethnicity, or ability to pay.

Need Criterion 6: Charity/Indigent Care
The application shall document that the applicant will provide a reasonable amount of charity/indigent care as provided for in Chapter I of this Plan.

306.03 Service Specific Certificate of Need Criteria and Standards for Acute Psychiatric, Chemical Dependency, and/or Psychiatric Residential Treatment Facility Beds/Services

306.03.01 Acute Psychiatric Beds for Adults

Need Criterion 1: Statistical Need for Adult Psychiatric Beds
MSDH shall base statistical need for adult acute psychiatric beds on a ratio of 0.21 beds per 1,000 population aged eighteen (18) and older for 2023 in the state as a whole as projected by the Division of Health Planning and Resource Development. Table 3-6 presents the statistical need for adult psychiatric beds.

Need Criterion 2: Proposed Size of Facility/Unit
The applicant shall provide information regarding the proposed size of the facility/unit. Acute psychiatric beds for adults may be located in either freestanding or hospital-based facilities. Freestanding facilities should not be larger than sixty (60) beds. Hospital units should not be larger than thirty (30) beds. Patients treated in adult facilities and units should be eighteen (18) years of age or older.

Need Criterion 3: Staffing
The applicant shall provide documentation regarding the staffing of the facility. Staff providing treatment should be specially trained for the provision of psychiatric and psychological services. The staff should include both psychiatrists and psychologists and should provide a multi-discipline psychosocial medical approach to treatment.

306.03.02 Acute Psychiatric Beds for Children and Adolescents

Need Criterion 1: Statistical Need for Child/Adolescent Beds
MSDH shall base statistical need for child/adolescent acute psychiatric beds on a ratio of 0.55 beds per 1,000 population aged seven (7) to seventeen (17) for 2023 in the state as a whole as projected by the Division of Health Planning and Resource Development. Table 3-6 presents the statistical need for child/adolescent psychiatric beds. Of the specified beds needed, twenty-five (25) beds are hereby set aside exclusively for the treatment of children less than fourteen (14) years of age.

Need Criterion 2: Proposed Size of Facility/Unit
The applicant shall provide information regarding the proposed size of the facility/unit. Acute psychiatric beds for children and adolescents may be located in freestanding or hospital-based units and facilities. A facility should not be larger than sixty (60) beds. All units, whether hospital-based or freestanding, should provide a homelike environment. Ideally, a facility should provide cottage-style living units housing eight (8) to ten (10) patients. Because of the special needs of children and adolescents, facilities or units which are not physically attached to a general hospital are preferred. For the purposes of this *Plan*, an adolescent is defined as a minor who is at least fourteen (14) years old but less than eighteen (18) years old, and a child is defined as a minor who is at least seven (7) years old but less than fourteen (14) years old.

Need Criterion 3: Staffing
The applicant shall provide documentation regarding the staffing of the facility. Staff should be specially trained to meet the needs of adolescents and children. Staff should include both psychiatrists and psychologists and should provide a multi-discipline psychosocial medical approach to treatment. The treatment program must involve parents and/or significant others. Aftercare services must also be provided.

Need Criterion 4: Structural Design of Facility – Separation of Children and Adolescents
The applicant shall describe the structural design of the facility in providing for the separation of children and adolescents. In facilities where both children and adolescents are housed, the facility should attempt to provide separate areas for each age grouping.

306.03.03 Chemical Dependency Beds for Adults

Need Criterion 1: Statistical Need for Adult Chemical Dependency Beds
MSDH shall base statistical need for adult chemical dependency beds on a ratio of 0.14 beds per 1,000 population aged eighteen (18) and older for 2023 in the state as a whole as projected by the Division of Health Planning and Resource Development. Table 3-7 presents the statistical need for adult chemical dependency beds.

Need Criterion 2: Proposed Size of Facility/Unit
The applicant shall provide information regarding the proposed size of the facility/unit. Chemical dependency treatment programs may be located in either freestanding or hospital-based facilities. Facilities should not be larger than seventy-five (75) beds, and individual units should not be larger than thirty (30) beds. The bed count also includes detoxification beds. Staff should have specialized training in the area of alcohol and substance abuse treatment, and a multi-discipline psychosocial medical treatment approach that involves family and significant others.

Need Criterion 3: Aftercare/Follow-Up Services Provided
The applicant shall describe the aftercare or follow-up services proposed for individuals leaving the chemical dependency program. Chemical dependency treatment programs should include extensive aftercare and follow-up services.

Need Criterion 4: Type of Clients to be Treated at Facility
The applicant shall specify the type of clients to be treated at the proposed facility. Freestanding chemical dependency facilities and hospital-based units should provide services to substance abusers as well as alcohol abusers.

306.03.04 Chemical Dependency Beds for Children and Adolescents

Need Criterion 1: Statistical Need for Child/Adolescent Chemical Dependency Beds
MSDH shall base statistical need for child/adolescent chemical dependency beds on a ratio of 0.44 beds per 1,000 population aged twelve (12) to seventeen (17) for 2023 in the state as a whole as projected by the Division of Health Planning and Resource Development. Table 3-7 presents the statistical need for child/adolescent chemical dependency beds.

Need Criterion 2: Proposed Size of Facility/Unit
The applicant shall provide information regarding the proposed size of the facility/unit. Chemical dependency beds may be located in either freestanding or hospital-based facilities. Because of the unique needs of the child and adolescent population, facilities shall not be larger than sixty (60) beds. Units shall not be larger than twenty (20) beds. The bed count of a facility or unit shall include detoxification beds.

Need Criterion 3: Provision of Home-Like Environment
Facilities or units, whether hospital-based or freestanding, should provide a home-like environment. Ideally, facilities should provide cottage-style living units housing eight (8) to ten (10) patients. Because of the special needs of children and adolescents, facilities or units which are not physically attached to a general hospital are preferred.

Need Criterion 4: Staffing
The applicant shall provide documentation regarding the staffing of the facility. Staff should be specially trained to meet the needs of adolescents and children. Staff should include both psychiatrists and psychologists and should provide a multi-discipline psychosocial medical approach to treatment. The treatment program must involve parents and significant others. Aftercare services must also be provided.

Need Criterion 5: Structural Design of Facility – Separation of Children and Adolescents
The applicant shall describe the structural design of the facility in providing for the separation of children and adolescents. Child and adolescent patients shall be separated from adult patients for treatment and living purposes.

Need Criterion 6: Aftercare/Follow-Up Services Provided
The applicant shall describe the aftercare or follow-up services proposed for individuals leaving the chemical dependency program. Extensive aftercare and follow-up services involving the family and significant others should be provided to clients after discharge from the inpatient program. Chemical dependency facilities and units should provide services to substance abusers as well as alcohol abusers.

306.03.05 Psychiatric Residential Treatment Facility Beds/Services

Need Criterion 1: Statistical Need for Psychiatric Residential Treatment Beds
MSDH shall base statistical need for psychiatric residential treatment beds on a ratio of 0.5 beds per 1,000 population aged five (5) to twenty-one (21) for 2023 in the state as a whole as projected by the Division of Health Planning and Resource Development. Table 3-8 presents the statistical need for psychiatric residential treatment facility beds.

Need Criterion 2: Age Group to be Served
The application shall state the age group that the applicant will serve in the psychiatric residential treatment facility and the number of beds dedicated to each age group (5 to 13, 14 to 17, and 18 to 21).

Need Criterion 3: Structural Design of Facility
The applicant shall describe the structural design of the facility for the provision of services to children less than fourteen (14) years of age. Of the beds needed for psychiatric residential treatment facility services, twenty-five (25) beds are hereby set aside exclusively for the treatment of children less than fourteen (14) years of age. An applicant proposing to provide psychiatric residential treatment facility services to children less than fourteen (14) years of age shall make provision for the treatment of these patients in units which are programmatically and physically distinct from the units occupied by patients older than thirteen (13) years of age. A facility may house both categories of patients if both the physical design and staffing ratios provide for separation.

Need Criterion 4: Bed Count as Authorized by the Legislature
This criterion does not preclude more than twenty-five (25) psychiatric residential treatment facility beds being authorized for the treatment of patients less than fourteen (14) years of age. However, MSDH shall not approve more psychiatric residential treatment facility beds statewide than specifically authorized by legislation (Miss. Code Ann. § 41-7-191 et. seq). This authorization is limited to 334 beds for the entire state. (Note: the 318 licensed and CON approved beds indicated in Table 3-8 were the result of both CON approval and legislative actions).

Need Criterion 5: Proposed Size of Facility/Unit
The applicant shall provide information regarding the proposed size of the facility/unit. A psychiatric residential treatment facility should provide services in a homelike environment. Ideally, a facility should provide cottage-style living units not exceeding

fifteen (15) beds. A psychiatric residential treatment facility should not be larger than sixty (60) beds.

Need Criterion 6: Staffing
The applicant shall provide documentation regarding the staffing of the facility. Staff should be specially trained to meet the treatment needs of the age category of patients being served. Staff should include both psychiatrists and psychologists and should provide a multi-discipline psychosocial medical approach to treatment. The treatment program must involve parents and/or significant others. Aftercare/follow-up services must also be provided.

Table 3-6
Statewide Acute Psychiatric Bed Need
2025

Bed Category and Ratio	2025 Projected Population	Projected Bed Need	Licensed Beds	Difference
Adult Psychiatric: 0.21 beds per 1,000 population aged 20+	2,282,191	479	636	-157
Child/Adolescent Psychiatric: 0.55 beds per 1,000 population aged 5 to 19	633,751	349	330	19

Source(s): Applications for Renewal of Hospital License for Calendar Year 2016; FY 2017 Annual Hospital Report and State Data Center of Mississippi, University of Mississippi Center for Population Studies, February 13, 2018

Table 3-7
Statewide Chemical Dependency Bed Need
2025

Bed Category and Ratio	2025 Projected Population	Projected Bed Need	Licensed Beds	Difference
Adult Chemical Dependency: 0.14 beds per 1,000 population aged 20+	2,282,191	320	395	-75
Child/Adolescent Chemical Dependency: 0.44 beds per 1,000 population aged 5 to 19	633,751	279	77	202

Source(s): Applications for Renewal of Hospital License for Calendar Year 2016; FY 2017 Annual Hospital Report and State Data Center of Mississippi, University of Mississippi Center for Population Studies, February 13, 2018

Table 3-8
Statewide Psychiatric Residential
Treatment Facility Bed Need
2025

Age Cohort	Bed Ratio per 1,000 Population	2023 Projected Population	Projected Bed Need	Licensed/CON Approved Beds	Difference
5 to 19	0.50	633,751	317	318	-1

Source(s): Applications for Renewal of Hospital License for Calendar Year 2016; FY 2017 Annual Hospital Report and State Data Center of Mississippi, University of Mississippi Center for Population Studies, February 13, 2018

307 Private Distinct-Part Geriatric Psychiatric Services

During 2016, thirty-one (31) Mississippi hospitals operated certified distinct-part geriatric psychiatric units (Geropsych DPU) with a total of 393 beds. Geropsych units receive Medicare certification as a distinct-part psychiatric unit but are licensed as short-term acute hospital beds. These Geropsych units served a total of 64,587 inpatient days of psychiatric services to patients aged fifty-five (55) and older.

The industry standard formula for determining Geropsych DPU bed need is 0.5 beds per 1,000 population aged fifty-five (55) and over. The State Data Center of Mississippi under the University of Mississippi Center for Population Studies, projects Mississippi will have 943,320 persons aged fifty-five (55) and older by 2025. This population will need a total of 472 Geropsych DPU beds. The optimum unit size of a Geropsych unit is twelve (12) to twenty-four (24) beds. Table 3-9 shows the state's thirty-one (31) distinct-part geriatric psychiatric units. County population projections can be found in Chapter 1 of this *Plan*.

The following facilities received approval through a Determination of Reviewability for the establishment of a Geriatric Psychiatric Distinct Part (Geriatric-Psychiatric DPU or Gero-psych) Unit/Service:

- Anderson Regional Medical Center-South Campus (16-Beds) - Approved on 08/31/2012
- Pioneer Community Hospital of Choctaw (10-Beds) - Approved 03/08/2013
- Highland Community Hospital, Picayune, Mississippi (10 Bed) - Approved 07/29/2013

Table 3-9
Geriatric Psychiatric Bed Utilization
FY 2016

Facility	County	Licensed Beds	Inpatient Days	Occupancy Rate (%)	Discharges	ALOS	Discharge Days
State Total/Average		**393**	**62,246**	**43.00**	**5,041**	**13.15**	**58,900**
General Hospital Service Area 1		**34**	**3,442**	**29.76**	**303**	**11.78**	**3,480**
North Oak Regional Medical Center	Tate	12	1,605	36.64	121	13.23	1,601
Panola Medical Center	Panola	22	1,837	22.88	182	10.32	1,879
General Hospital Service Area 2		**25**	**4,505**	**48.08**	**324**	**13.38**	**4,428**
Baptist Memorial Hospital - Booneville	Perry	15	2,987	54.56	197	14.74	2,903
Tippah County Hospital	Tippah	10	1,518	41.59	127	12.01	1,525
General Hospital Service Area 3		**51**	**8,161**	**46.56**	**789**	**9.78**	**7,757**
Bolivar Medical Center	Bolivar	12	2,572	58.72	208	10.30	2,143
Delta Regional Medical Center West Campus	Washington	14	1,291	25.26	174	7.40	1,288
Greenwood Leflore Hospital	Leflore	15	1,698	31.01	155	11.05	1,712
North Sunflower Medical Center	Sunflower	10	2,600	71.23	252	10.37	2,614
General Hospital Service Area 4		**49**	**9,104**	**54.49**	**699**	**12.73**	**8,983**
Monroe Regional Hospital	Monroe	10	2,046	56.05	150	13.68	2,052
Trace Regional Hospital	Chickasaw	18	3,428	52.18	256	13.40	3,431
University of MS Medical Center Grenada	Grenada	14	1,654	32.37	144	10.84	1,561
Winston Medical Center	Winston	7	1,976	77.34	149	13.01	1,939
General Hospital Service Area 5		**104**	**17,554**	**46.50**	**1,148**	**31.17**	**14,834**
Claiborne County Hospital	Claiborne	10	1,652	45.26	137	12.15	1,665
Merit Health Rankin	Rankin	20	4,591	62.89	378	-	-
Merit Health River Region	Warren	13	-	-	0	-	-
Mississippi Baptist Medical Center	Hinds	12	3,104	70.87	311	10.38	3,228
Mississippi State Hospital	Rankin	29	4,365	41.24	36	169.72	6,110
Sharkey - Issaquena Community Hospital	Sharkey	10	1,224	33.53	114	10.82	1,234
Simpson General Hospital	Simpson	10	2,618	71.73	172	15.10	2,597
General Hospital Service Area 6		**38**	**6,209**	**45.77**	**546**	**11.34**	**6,235**
Alliance Health Center	Lauderdale	12	1,591	36.32	164	9.89	1,622
Anderson Regional Medical Center South	Lauderdale	16	2,485	42.55	203	12.24	2,485
Neshoba County General Hospital	Neshoba	10	2,133	58.44	179	11.89	2,128
General Hospital Service Area 7		**26**	**3,735**	**39.11**	**374**	**10.06**	**3,778**
Beacham Memorial Hospital	Pike	14	2,167	42.41	217	10.35	2,246
Merit Health Natchez	Adams	12	1,568	35.80	157	9.76	1,532
General Hospital Service Area 8		**32**	**2,778**	**23.40**	**233**	**7.56**	**2,647**
Covington County Hospital	Covington	10	-	-	-	-	-
Jefferson Davis General Hospital	Jeff Davis	10	1,485	40.68	118	12.54	1,480
Merit Health Wesley	Lamar	12	1,293	29.52	115	10.15	1,167
General Hospital Service Area 9		**34**	**6,758**	**53.31**	**625**	**10.51**	**6,758**
Garden Park Medical Center	Harrison	12	3,051	69.66	266	11.48	3,054
Highland Community Hospital	Pearl River	10	1,235	33.84	152	8.05	1,223
Merit Health Biloxi	Harrison	12	2,472	56.44	207	11.99	2,481

Sources: Applications for Renewal of Hospital License for Calendar Year 2015 and FY 2016 Annual Hospital Report; Division of Health Planning and Resource Development calculations

Chapter 4 Perinatal Care

400 Natality Statistics

Mississippi experienced 37,928 live births in 2016. Of these live births, 51.2 percent (19,416) were white non-Hispanic, 41.8 percent (15,868) were black non-Hispanic, 2.6 percent (976) were other non-Hispanic and 4.4 percent (1,665) were Hispanic. A physician attended 97.8 percent of all in-hospital live births delivered in 2016 (37,928). Nurse midwife deliveries accounted for 735 live births.

More than 99 percent of the live births occurred to women 15 to 44 years of age. Births to unmarried women made up 53.2 percent (20,176) of all live births in 2016; of these, 65.6 percent (12,645) were to black women and 32.4 percent (6,250) were to white women and 4.4 percent (883) were to Hispanic women. Mothers under the age of 15 gave birth to 52 children; 67.3 percent (35) were black and 21.2 percent (11) were white and 5.8 (3) percent were Hispanic, and 5.8 (3) percent were other.

The birth rate in 2016 was 12.7 live births per 1,000 population; the fertility rate was 63.5 live births per 1,000 women aged 15-44 years.

Mississippi reported 401 fetal deaths in 2016. The black fetal death ratio, which is the number of deaths per live births to mothers in the specified age group, was more than two times that of whites, with a ratio of 16.7 per 1,000 live births compared to 6.0 for whites. Mothers aged 40 and older, had the highest fetal death ratio at 38.8 per 1,000 live births, followed by mothers aged, 24-29 with a ratio of 11.9. MSDH requires the reporting of fetal deaths with gestation of 20 or more weeks or fetal weight of 350 grams or more. MSDH does not report fetal death rates for an age group if there are less than 100 births.

There were 14 maternal deaths reported during 2016. Maternal mortality refers to deaths resulting from complications of pregnancies, childbirth, or the puerperium within 42 days of delivery.

401 Infant Mortality

Infant mortality remains a critical concern in Mississippi. There was a decline in the infant mortality rate to 8.6 in 2016 from 9.2 in 2015. Table 4-1 shows the infant mortality rate, neonatal, and post-neonatal mortality for blacks all substantially above the rates for whites and Hispanics. (Note: 2016 vital statics data is the most recent available.)

Table 4-1
2016 Mortality Rates (deaths per 1,000 live births)

Category	Overall State Rate	White Rate	Black Rate	Hispanic Rate
Total Infant Mortality (age under one year)	8.6	7.2	11.5	1.8
Neonatal Mortality (age under 28 days)	5.3	4.0	7.6	1.2
Postneonatal Mortality (age 28 days to one year)	3.3	3.2	3.9	0.6

Table 4-2 displays Mississippi's infant mortality rates from 2003 to 2016, along with the rates for Region IV and for the United States. Map 4-1 shows the five-year average infant mortality rate by county for the period 2012 to 2016.

Table 4-2
Infant Mortality Rates
Mississippi, Region IV and USA – All Races
2003-2016

Year	Mississippi	Region IV	USA
2016	8.6	N/A	N/A
2015	9.2	N/A	5.9
2014	8.2	N/A	5.9
2013	9.7	N/A	5.9
2012	8.9	N/A	6
2011	9.4	N/A	N/A
2010	9.6	N/A	N/A
2009	10	N/A	N/A
2008	9.9	7.8	6.6
2007	10	8.0	6.8
2006	10.5	8.1	6.7
2005	11.4	8.1	6.9
2004	9.7	8.1	6.8
2003	10.7	8.2	6.9

N/A – Not Available
Source: Office of Health Informatics, Mississippi State Department of Health 2018

Many factors contribute to Mississippi's high infant mortality rate including: a high incidence of preterm birth, teenage pregnancy, low birthweight, lack of education, socioeconomic status, lack of access for planned delivery services, and lack of adequate perinatal and acute medical care.

More than 97 percent of expectant mothers received some level of prenatal care in 2016. More than 70 percent (28,832) of mothers began prenatal care in the first trimester; 22.0 percent (6,592) began in the second trimester, and 6.7 percent (1,398) during the third trimester. Only 1.7 percent (495) of expectant mothers received no prenatal care prior to delivery. White mothers usually receive prenatal care much earlier in pregnancy than black mothers.

In 2016, 11.5 percent of births were low birthweight (less than 5.5 pounds – 2,500 grams) and 13.6 percent were premature (gestational age less than 37 weeks). These indicators differ markedly by maternal race: 8.3 percent of white births were low birthweight compared to 15.9 percent for blacks. The low birthweight rate for Hispanics was 7.6 percent. The premature birth rate was 10.4 percent for Hispanics, 11.6 percent for whites and 16.6 percent for blacks.

A total of 3,378 Mississippi teenagers gave birth in 2016 — 8.9 percent of the state's 37,928 live births. Teenage births increased each year from 2005 until 2008. The year 2016 saw a 1.9 percent increase from the 3,611 births recorded to teenagers in 2015. Teen pregnancy is cited as one of the major factors contributing to the school dropout rate. In addition, teenage mothers are more likely to be single parents, less likely to get prenatal care before the second trimester, are at a higher risk of having low birthweight babies, are more likely to receive public assistance, are at a greater risk to commit abuse or neglect, and are more likely to have children who will themselves become teen parents. Consequently, in 2016, 12.4 percent of teenage births were low birthweight and 12.6 percent were premature.

Of the 37,928 total births in 2016, 29,257 were associated with "at risk" mothers (77.1 percent). “At risk" factors include mothers who are and/or have:

- under 17 years of age or above 35 years of age;
- unmarried;
- completed fewer than eight years of school;
- had fewer than five prenatal visits;
- begun prenatal care in the third trimester;
- had previous terminations of pregnancy; and/or
- a short inter-pregnancy interval (prior delivery within 11 months of conception for the current pregnancy).

402 Physical Facilities for Perinatal Care

The 55 hospitals that experienced live births reported 36,930 deliveries. Three of these hospitals reported more than 2,000 obstetrical deliveries each in Fiscal Year 2016, accounting for 6,740 deliveries or 18.3 percent of the state's total hospital deliveries: Forest General Hospital with 2,320 deliveries, North Mississippi Medical Center with 2,236 deliveries, and the University of Mississippi Medical Center with 2,191 deliveries. These hospitals with a large number of deliveries are strategically located in north, central and south Mississippi. Map 4-2 shows the Perinatal Planning Areas.

Map 4-1
Infant Mortality Rates by County of Residence
2012 to 2016 (Five – Year Average)

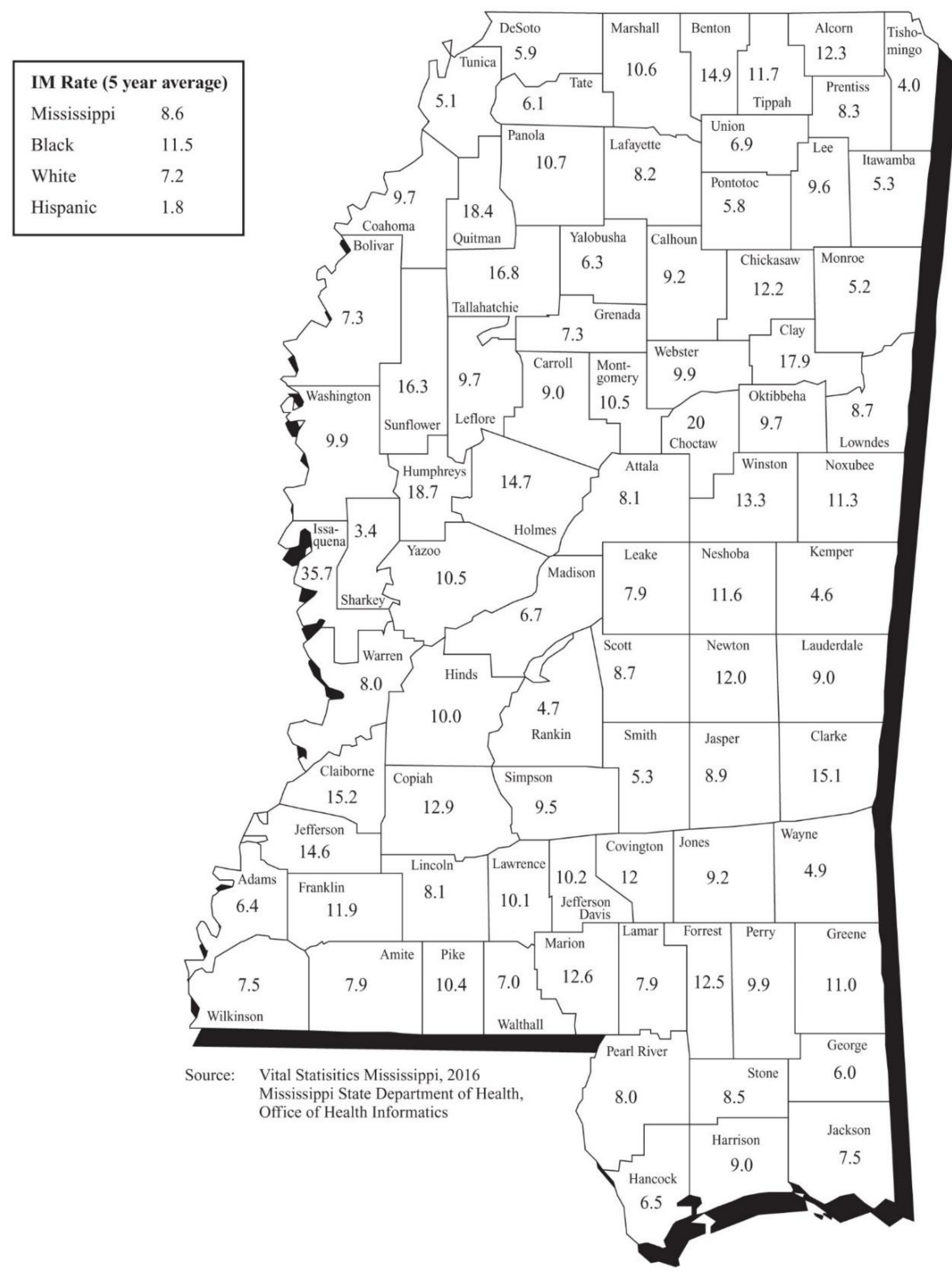


Table 4-3
Utilization Data for Hospitals with Obstetrical Deliveries
FY 2015 and FY 2016

Facility	County	Number of Deliveries 2015	Number of Deliveries 2016
University of Mississippi Medical Center	Hinds	2,147	2,191
Forrest General Hospital	Forrest	2,332	2,320
North Mississippi Medical Center	Lee	2,131	2,236
Baptist Memorial Hospital-DeSoto	DeSoto	1,647	1,678
Merit Health River Oaks	Rankin	1,542	1,479
St. Dominic-Jackson Memorial Hospital	Hinds	1,472	1,560
Merit Health Wesley	Lamar	1,257	1,259
Merit Health Woman's Hospital	Rankin	1,126	1,108
Memorial Hospital at Gulfport	Harrison	1,450	1,450
Anderson Regional Medical Center	Lauderdale	1,263	1,215
Baptist Memorial Hospital - Union County	Union	940	1,020
Mississippi Baptist Medical Center	Hinds	1,756	1,706
Rush Foundation Hospital	Lauderdale	985	964
Baptist Memorial Hospital-Golden Triangle	Lowndes	932	935
OCH Regional Medical Center	Oktibbeha	888	930
Baptist Memorial Hospital - North Miss	Lafayette	945	875
South Central Regional Medical Center	Jones	904	923
Merit Health Northwest Mississippi	Coahoma	790	633
Ocean Springs Hospital	Jackson	838	800
Delta Regional Medical Center-Main Campus	Washington	726	715
Merit Health of Biloxi	Harrison	839	882
Southwest Mississippi Regional Medical Center	Pike	764	740
Merit Health River Region	Warren	709	628
Merit Health Central	Hinds	731	642
University of MS Medical Center Grenada	Grenada	410	435
King's Daughters Medical Center-Brookhaven	Lincoln	596	627
Merit Health Madison	Madison	300	309
Merit Health Natchez	Adams	181	857
Merit Health Natchez- Community Campus**	Adams	721	0
Magnolia Regional Health Center	Alcorn	702	676
Merit Health Gilmore Memorial	Monroe	610	634
Singing River Hospital	Jackson	624	631
Greenwood Leflore Hospital	Leflore	544	495

Table 4-3
Utilization Data for Hospitals with Obstetrical Deliveries
FY 2015 and FY 2016 (continued)

Facility	County	Number of Deliveries 2015	Number of Deliveries 2016
Garden Park Medical Center	Harrison	413	445
Bolivar Medical Center	Bolivar	389	369
North Miss Medical Center-West Point	Clay	360	319
Highland Community Hospital	Pearl River	315	291
Magee General Hospital	Simpson	277	36
South Sunflower County Hospital	Sunflower	194	199
Methodist Olive Branch Hospital	Desoto	296	371
Hancock Medical Center	Hancock	225	192
Wayne General Hospital	Wayne	215	198
George County Regional Hospital	George	258	282
North MS Medical Center- West Point	Clay	360	319
81 Medical Group	Harrison	391	371
Merit Health Rankin	Rankin	2	0
Merit Health Batesville	Panola	239	272
Baptist Medical Center-Leake	Leake	2	3
Marion General Hospital	Marion	1	1
Baptist Medical Center - Attala	Atalla	0	2
Laird Hospital	Newton	0	2
Covington County Hospital	Covington	1	0
Scott Regional Hospital	Scott	1	1
Field Memorial Hospital	Wilkinson	0	2
Baptist Medical Center- Yazoo	Yazoo	2	3
H.C Watkins Memorial Hospital	Clarke	0	1
Jefferson County Hospital	Jefferson	1	0
Lawrence County Hospital	Lawrence	2	1
Choctaw Health Center	Choctaw	1	2
Pioneer Community Hospital of Choctaw	Choctaw	0	1
North Miss Medical Center- Iuka	Tishomingo	1	0
North Miss Medical Center - Eupora	Webster	1	0
North Oak Regional Medical Center	Tate	0	1
North Sunflower County Hospital	Sunflower	1	0
Tallahatchie General Hospital	Tallahatchie	1	0
Hardy Wilson Memorial Hospital	Copiah	1	0
Perry County General Hospital	Perry	1	0
University of MS Medical Center-Holmes	Holmes	1	2
Sharkey-Issaquena Community Hospital	Sharkey	1	0
S.E. Lackey Memorial Hospital	Scott	1	2
Neshoba County General Hospital	Neshoba	1	0
Noxubee General Hospital	Noxubee	0	1
Stone County Hospital	Marion	0	1
Total		**37,757**	**37,248**

Sources: Mississippi State Department of Health, Office of Health Informatics
* N/A – Denotes facility not reported on birth certificates sent to MSDH for the year.
** Facility closed in 2015.

403 Certificate of Need Criteria and Standards for Obstetrical Services

Note: Should the Mississippi State Department of Health receive a Certificate of Need application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until the Department of Health has developed and adopted CON criteria and standards. If the Department has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of the Mississippi State Department of Health.

403.01 Policy Statement Regarding Certificate of Need Applications for the Offering of Obstetrical Services

1. An applicant is required to provide a reasonable amount of indigent/charity care as described in Chapter 1 of this Plan.

2. Perinatal Planning Areas (PPA): MSDH shall determine the need for obstetrical services using the Perinatal Planning Areas as outlined on Map 4-2 at the end of this chapter.

3. Travel Time: Obstetrical services should be available within one (1) hour normal travel time of 95 percent of the population in rural areas and within 30 minutes normal travel time in urban areas.

4. Preference in CON Decisions: The MSDH shall give preference in CON decisions to applications that propose to improve existing services and to reduce costs through consolidation of two basic obstetrical services into a larger, more efficient service over the addition of new services or the expansion of single service providers.

5. Patient Education: Obstetrical service providers shall offer an array of family planning and related maternal and child health education programs that are readily accessible to current and prospective patients.

6. Levels of Care: All hospitals providing obstetric and newborn services will be designated a perinatal level of care by MSDH, based upon its functional capabilities to provide risk-appropriate care for pregnant women and neonates. The levels of care will be divided into four levels defined in accordance with the 2012 policy statement by the American Academy of Pediatrics, (PEDIATRICS Vol. 130, No. 3, September 2012) and maternal standards set forth by the American College of Obstetricians and Gynecologists with modifications approved by MSDH. The levels are:

   Level I- Basic Care, Well newborn nursery
   Level II- Specialty Care, Special care nursery
   Level III- Sub-specialty Care, Neonatal Intensive Care Unit
   Level IV- Regional Care

   Details of the levels are outlined in section 405.03 of the State Health Plan.

7. An applicant proposing to offer obstetrical services shall be equipped to provide perinatal services in accordance with the guidelines contained in the Minimum Standards of Operation for Mississippi Hospitals § 130, Obstetrics and Newborn Nursery. All hospitals offering obstetric and newborn care shall conform to the practice guidelines of the American Academy of Pediatrics, Policy Statement, Levels of Care and professional standards established in the Guidelines for the Operations of Perinatal Units.

8. An applicant proposing to offer obstetrical services shall agree to provide an amount of care to Medicaid mothers/babies comparable to the average percentage of Medicaid care offered by other providers of the requested service within the same, or most proximate, geographic area.

403.02 Certificate of Need Criteria and Standards for Obstetrical Services

The Mississippi State Department of Health will review applications for a Certificate of Need to establish obstetric services under the statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of the Mississippi State Department of Health; and the specific criteria and standards listed below.

The establishment or expansion of Level I- basic or Level II- specialty perinatal services shall require approval under the Certificate of Need statute if the $2,000,000 capital expenditure threshold is crossed. Any hospital proposing to establish or expand existing services to become a Level III-subspecialty or Level IV-regional perinatal center shall require approval under the Certificate of Need statute.

Provision for individual units should be consistent with the regionalized perinatal care system involved. Those facilities desiring to provide obstetric services shall meet the Basic facility minimum standards as listed under *Guidelines for the Operation of Perinatal Units* found at the end of this chapter.

Need Criterion 1: Minimum Procedures
The application shall demonstrate how the applicant can reasonably expect to deliver a minimum of 150 babies the first full year of operation and 250 babies by the second full year. In this demonstration, the applicant shall document the number of deliveries performed in the proposed perinatal planning area (as described in Section 403.01, policy statement 2, by hospital).

Need Criterion 2: Perinatal Services
The application shall document that the facility will provide one of the three types of perinatal services: Basic, Specialty, or Subspecialty.

Need Criterion 3: Staffing Requirements
The facility shall provide full-time nursing staff in the labor and delivery area on all shifts. Nursing personnel assigned to nursery areas in Basic Perinatal Centers shall be under the direct supervision of a qualified registered nurse with extra training such as Neonatal Resuscitation Program (NRP) certification and the S.T.A.B.L.E program.

Need Criterion 4: Policies
Any facility proposing the offering of obstetrical services shall have written policies delineating responsibility for immediate newborn care, resuscitation, transfer to higher-level of care, selection and maintenance of necessary equipment, and training of personnel in proper techniques.

Need Criterion 5: Staff Required for Medical Emergency
The application shall document that the nurse, anesthesia, neonatal resuscitation, and obstetric personnel required for emergency cesarean delivery shall be in the hospital or readily available at all times.

Need Criterion 6: Travel Time
The application shall document that the proposed services will be available within one (1) hour normal driving time of 95 percent of the population in rural areas and within 30 minutes normal driving time in urban areas.

Need Criterion 7: Transfer of Patients in Medical Emergency
The applicant shall affirm that the hospital will have protocols for the transfer of medical care of the neonate in both routine and emergency circumstances.

Need Criterion 8: Data Requirements
The application shall affirm that the applicant will record and maintain, at a minimum, the following information regarding charity care and care to the medically indigent and make it available to the Mississippi State Department of Health within 15 business days of request:

a. source of patient referral;

b. utilization data, e.g., number of indigent admissions, number of charity admissions, and inpatient days of care;

c. demographic/patient origin data;

d. cost/charges data; and

e. Any other data pertaining directly or indirectly to the utilization of services by medically indigent or charity patients, which the Department may request.

Need Criterion 9: Non-Discrimination Provision
The applicant shall document that within the scope of its available services, neither the facility nor its participating staff shall have policies or procedures, which would exclude patients because of race, age, sex, ethnicity, or ability to pay.

404 Certificate of Need Criteria and Standards for Neonatal Special Care Services

Note: Should the Mississippi State Department of Health receive a Certificate of Need application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until the Department of Health has developed and adopted CON criteria and standards. If the Department has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of the Mississippi State Department of Health.

404.01 Policy Statement Regarding Certificate of Need Applications for the Offering of Neonatal Special Care Services

1. An applicant is required to provide a reasonable amount of indigent/charity care as described in Chapter 1 of this Plan.

2. Perinatal Planning Areas (PPA): MSDH shall determine the need for neonatal special care services using the Perinatal Planning Areas as outlined on Map 4-2 at the end of this chapter.

3. Bed Limit: The total number of neonatal special care beds is not to exceed eight (8) per 1,000 live births in a specified PPA as defined below:

   a. Two (2) intensive care beds per 1,000 live births; and

   b. Six (6) intermediate care beds per 1,000 live births.

4. Size of Facility: A single neonatal special care unit (Subspecialty) Level 3 or greater facility should contain a minimum of 15 beds.

5. Levels of Care: MSDH shall determine the perinatal level of care designation of the facility based upon its functional capabilities to provide risk-appropriate care for pregnant women and neonates. Facilities shall be designated as one of four levels of care as outlined in Section 405.03 of the State Health Plan.

   Level I- Basic Care, Well newborn nursery
   Level II- Specialty Care, Special care nursery
   Level III- Sub-specialty Care, Neonatal Intensive Care Unit
   Level IV- Regional Care

6. An applicant proposing to offer neonatal special care services shall agree to provide an amount of care to Medicaid babies comparable to the average percentage of Medicaid care offered by other providers of the requested services.

404.02 Certificate of Need Criteria and Standards for Neonatal Special Care Services

The Mississippi State Department of Health will review applications for a Certificate of Need to establish neonatal special care services under the statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. The MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of the Mississippi State Department of Health; and the specific criteria and standards listed below.

All neonatal intensive care units providing subspecialty care are reviewable under the Certificate of Need law based upon the addition/conversion of hospital beds required to establish such units.

Those facilities desiring to provide neonatal special care services shall meet the capacity and levels of neonatal care for the specified facility (Specialty, Subspecialty or Regional) as outlined by the American Academy of Pediatrics, Policy Statement, Levels of Neonatal Care (PEDIATRICS Vol. 130, No. 3, September, 2012).

Need Criterion 1: Minimum Procedures

The application shall demonstrate that the Perinatal Planning Area (PPA) wherein the proposed services are to be offered had a minimum of 3,600 deliveries for the most recent 12-month reporting period. MSDH shall determine the need for neonatal special care services based upon the following:

a. Two (2) neonatal intensive (subspecialty) care bed per 1,000 live births in a specified Perinatal Planning Area for the most recent 12-month reporting period; and

b. Six (6) neonatal intermediate (specialty) care beds per 1,000 live births in a specified Perinatal Planning Area for the most recent 12-month reporting period.

Neonatal intensive care beds can only be housed within a hospital designated as a Level III facility. Neonatal intermediate or specialty care beds can be housed within either a Level II, Level III or Level IV facility.

Applications submitted by existing providers of neonatal special care services, which seek to expand capacity by adding or converting neonatal special care beds must document the need for the proposed project. The applicant shall demonstrate that the facility in question has maintained an occupancy rate for neonatal special care services of at least seventy percent (70%) for the most recent two (2) years or maintained an eighty percent (80%) neonatal special care services occupancy rate for the most recent year, notwithstanding the neonatal special care bed need outlined in Table 4-4 below. The applicant may be approved for additional or conversion of neonatal special care beds to meet projected demand balanced with optimum utilization rate for the Perinatal Planning Area.

Need Criterion 2: Minimum Bed Requirement for Single Neonatal Special Care Unit

A single neonatal special care unit (Subspecialty or Regional) that is Level 3 or greater should contain a minimum of 15 beds (neonatal intensive care and/or neonatal intermediate care). An adjustment downward may be considered for a specialty unit when travel time to an alternate unit is a serious hardship due to geographic remoteness.

Need Criterion 3: Travel Time
The application shall document that the proposed services will be available within one (1) hour normal driving time of 95 percent of the population in rural areas and within 30 minutes normal driving time in urban areas.

Need Criterion 4: Referral Networks
The application shall document that the applicant has established referral networks to transfer infants requiring more sophisticated care than is available in less specialized facilities.

Need Criterion 5: Data Requirement
The application shall affirm that the applicant will record and maintain, at a minimum, the following information regarding charity care and care to the medically indigent and make it available to the Mississippi State Department of Health within 15 business days of request:

a. source of patient referral;

b. utilization data e.g., number of indigent admissions, number of charity admissions, and inpatient days of care;

c. demographic/patient origin data;

d. cost/charges data; and

e. any other data pertaining directly or indirectly to the utilization of services by medically indigent or charity patients which the Department may request.

Need Criterion 6: Non-Discrimination Provision
The applicant shall document that within the scope of its available services, neither the facility nor its participating staff shall have policies or procedures which would exclude patients because of race, age, sex, ethnicity, or ability to pay.

404.03 Neonatal Special Care Services Bed Need Methodology

The determination of need for neonatal special care beds/services in each Perinatal Planning Area will be based on eight (8) beds per 1,000 live births as defined below.

1. Two (2) neonatal intensive care beds per 1,000 live births in the most recent 12-month reporting period.

2. Six (6) neonatal intermediate care beds per 1,000 live births in the most recent 12-month reporting period.

Table 4-4
Neonatal Special Care Bed Need
2016

Perinatal Planning Areas	Number Live Births[1]	Neonatal Intensive Care Bed Need	Neonatal Intermediate Care Bed Need
PPA I	2,340	5	14
PPA II	3,955	8	24
PPA III	2,415	5	14
PPA IV	4,161	8	25
PPA V	9,715	19	58
PPA VI	2,387	5	14
PPA VII	2,235	4	13
PPA VIII	4,519	9	27
PPA IX	5,411	11	32
State Total	**37,138**	**74**	**223**

[1] 2016 Occurrence Data. Number of beds based upon births rounded to the nearest 1,000.
Sources: Mississippi State Department of Health, Division of Health Planning and Resource Development Calculations, 2016

Source: Bureau of Public Health Statistics

405 Guidelines for the Operation of Perinatal Units (Obstetrics and Newborn Nursery)

405.01 Organization

Obstetrics and newborn nursery services shall be under the direction of a member of the staff of physicians who has been duly appointed for this service and who has experience in maternity and newborn care.

There shall be a qualified professional registered nurse responsible at all times for the nursing care of maternity patients and newborn infants.

Provisions shall be made for pre-employment and annual health examinations for all personnel on this service.

Physical facilities for perinatal care in hospitals shall be conducive to care that meets the normal physiologic and psychosocial needs of mothers, neonates and their families. The facilities provide for deviations from the norm consistent with professionally recognized standards/guidelines.

The perinatal service should have facilities for the following components:

1. Antepartum care and testing
2. Fetal diagnostic services
3. Admission/observation/waiting
4. Labor
5. Delivery/cesarean birth
6. Newborn nursery
7. Newborn special care unit (Level II- Specialty)
8. Newborn Intensive Care Unit (Level III Subspecialty and Level IV –Regional care only
9. Recovery and postpartum care
10. Visitation

405.02 Staffing

The facility must be staffed to meet its patient care commitments based upon its designated level of care, consistent with the American Academy of Pediatrics, Policy Statement, Levels of Care and professional guidelines. Hospitals with Neonatal Intensive Care Units providing subspecialty care must include appropriately trained personnel (neonatologists, neonatal nurses, and respiratory therapists) and equipment to provide life support for as long as necessary.

405.03 Perinatal Levels of Care

Level 1- Basic Care, Well Newborn Nursery

Neonatal Guidelines

1. Provide neonatal resuscitation at every delivery.

2. Evaluate and provide postnatal care to stable term newborn infants.

3. Stabilize and provide care for infants born at 35-37 weeks gestation who remain physiologically stable.

4. Stabilize newborn infants who are ill and those born at less than 35 weeks gestation until transfer to a facility that can provide the appropriate level of care.

5. Maintain a staff of providers including pediatricians, family physicians, nurse practitioners with newborn training, registered nurses with newborn training including being current with Neonatal Resuscitation Program Certification and S.T.A.B.L.E.

Maternal Guidelines

1. Surveillance and care of all patients admitted to the obstetric service, with an established triage system for identifying high-risk patients who should be transferred to a facility that provides specialty or sub-specialty care.

2. Capability to begin an emergency cesarean delivery within 30 minutes of the decision to do so.

3. Mothers that are stable and likely to deliver before 35 weeks gestation or have a fetus that is likely to require specialty services and mothers who themselves are likely to require specialty services should be transferred prior to delivery, when possible.

4. Proper detection and supportive care of known maternal conditions and unanticipated maternal-fetal problems that occur during labor and delivery.

5. Care of postpartum conditions.

6. Maintain a staff of providers certified to perform normal and operative vaginal deliveries and cesarean sections including obstetricians and family physicians with advanced training in obstetrics, providers certified to perform normal vaginal

deliveries including certified nurse midwives, and registered nurses with training in labor and delivery, post-partum care or inpatient obstetrics.

Hospital Resources

1. Availability of anesthesia, radiology, ultrasound, blood bank and laboratory services available on a 24-hour basis.

2. Consultation and transfer agreement with specialty and/or subspecialty perinatal centers.

3. Parent-sibling-neonate visitation.

4. Data collection and retrieval.

5. Quality improvement programs, maximizing patient safety.

Level II- Specialty Care, Special Care Nursery

Neonatal Guidelines

1. Performance of all basic care services as described above.

2. Provide care for infants born at more than 32 weeks and weighing more than 1500g who have physiological immaturity or who are moderately ill with problems that are expected to resolve rapidly and are not anticipated to need subspecialty services on an urgent basis.

3. Provide care for infants convalescent care after intensive care.

4. Provide mechanical ventilation for brief duration (less than24 hours) and/or continuous positive airway pressure.

5. Stabilize infants born before 32 weeks gestation and weighing less than 1500 grams until transfer to a Level III or Level IV neonatal intensive care facility.

6. Maintain a staff of providers including those listed in Basic Care plus pediatric hospitalists, neonatologist, and neonatal nurse practitioners.

7. Referral to a higher level of care for all infants when needed for pediatric surgical or medical subspecialty intervention.

8. Level II nurseries must have equipment (eg, portable x-ray machine, blood gas analyzer) and personal (eg, physicians, specialized nurses, respiratory therapists, radiology technicians and laboratory technicians) to provide ongoing care of admitted infants as well as to address emergencies.

Maternal Guidelines

1. Perform all basic maternal services listed above.

2. Mothers that are stable and likely to deliver before 32 weeks gestation or have a neonate that is likely to require sub-specialty services, or mothers who themselves are likely to require sub-specialty services should be transferred prior to delivery, when possible.

3. Access to maternal fetal medicine consultation and antenatal diagnosis technology including fetal ultrasound.

Level III- Sub-specialty Care/Neonatal Intensive Care Unit

Neonatal Guidelines

1. Provision of all Level I and Level II services.

2. Level III NICUs are defined by having continuously available personnel (neonatologists, neonatal nurses, and respiratory therapists) and equipment to provide life support for as long as necessary.

3. Provide comprehensive care for infants born less than 32 weeks gestation and weighing less than1500 grams and infants born at all gestational ages and birth weights with critical illness.

4. Provide prompt and readily available access to a full range of pediatric medical subspecialists, pediatric surgical specialists, pediatric anesthesiologists or anesthesiologists with experience in neonatal surgical care and pediatric ophthalmologists, on site or by prearranged consultative agreements.

5. Provide a full range of respiratory support and physiologic monitoring that may include conventional and/or high-frequency ventilation and inhaled nitric oxide.

6. Perform advanced imaging with interpretation on an urgent basis, including computed tomography, MRI and echocardiography.

7. Social and family support including social services and pastoral care.

8. If geographic constraints for land transportation exist, the level III facility should ensure availability of rotor and fixed-wing transport services to transfer infants requiring subspecialty intervention from other regions and facilities.

9. Consultation and transfer agreements with both lower level referring hospitals and regional centers, including back-transport agreements.

10. Prompt diagnosis and appropriate referral of all conditions requiring surgical intervention. Major surgery should be performed by pediatric surgical specialists (including anesthesiologists with pediatric expertise) on–site within the hospital or at

a closely related institution, ideally in close geographic proximity if possible. Level III facilities should be able to offer complete care, management, and evaluation for high-risk neonates 24 hours a day. A neonatologist should be available either in-house or on-call with the capacity to be in-house in a timely manner, 24 hours a day.

11. Level III facilities should maintain a sufficient volume of infants less than 1500 grams to meet professionally accepted guidelines to achieve adequate experience and expertise.

12. Enrollment in the Vermont Oxford Network to report and monitor data regarding outcomes of infants born less than 32 weeks and weighing less than 1500 grams.

13. Participation in and evaluation of quality improvement initiatives.

Maternal Guidelines

1. Manage complex maternal and fetal illnesses before, during and after delivery.

2. Maintain access to consultation and referral to Maternal-Fetal Medicine specialists.

Level IV- Regional Care

Neonatal Guidelines

1. All level III capabilities listed above.

2. Located within an institution with the capability to provide surgical repair of complex congenital or acquired conditions.

3. Maintain a full range of pediatric medical subspecialists, pediatric surgical subspecialists and pediatric anesthesiologists at the site.

4. Facilitate transport and provide outreach education including community taught NRP and S.T.A.B.L.E. classes.

Maternal Guidelines

1. All level III capabilities listed above.

2. Maintain a full range of surgical and medical specialists including Maternal-Fetal Medicine specialists at the site.

3. Facilitate maternal transport and provide outreach education.

405.04 Perinatal Care Services

Antepartum Care

There should be policies for the care of pregnant patients with obstetric, medical, or surgical complications and for maternal transfer.

Intra-partum Services: Labor and Delivery

Intra-partum care should be both personalized and comprehensive for the mother and fetus. There should be written policies and procedures in regard to:

1. Assessment
2. Admission
3. Medical records (including complete prenatal history and physical)
4. Consent forms
5. Management of labor including assessment of fetal well-being:
    a. Term patient
    b. Preterm patients
    c. Premature rupture of membranes
    d. Preeclampsia/eclampsia
    e. Third trimester hemorrhage
    f. Pregnancy Induced Hypertension (PIH)
6. Patient receiving oxytocics or tocolytics
7. Patients with stillbirths and miscarriages
8. Pain control during labor and delivery
9. Management of delivery
10. Emergency cesarean delivery (capability within 30 minutes)
11. Assessment of fetal maturity prior to repeat cesarean delivery or induction of labor
12. Vaginal birth after cesarean delivery
13. Assessment and care of neonate in the delivery room
14. Infection control in the obstetric and newborn areas

15. A delivery room shall be kept that will indicate:

    a. The name of the patient
    b. Date of delivery
    c. Sex of infant
    d. Apgar
    e. Weight
    f. Name of physician
    g. Name of person assisting
    h. What complications, if any, occurred
    i. Type of anesthesia used
    j. Name of person administering anesthesia

16. Maternal transfer

17. immediate postpartum/recovery care

18. Housekeeping

Newborn Care

There shall be policies and procedures for providing care of the neonate including:

1. Immediate stabilization period
2. Neonate identification and security
3. Assessment of neonatal risks
4. Cord blood, Coombs, and serology testing
5. Eye care
6. Subsequent care
7. Administration of Vitamin K
8. Neonatal screening
9. Circumcision
10. Parent education

11. Visitation

12. Admission of neonates born outside of facility

13. Housekeeping

14. Care of or stabilization and transfer of high-risk neonates

Postpartum Care

There shall be policies and procedures for postpartum care of mother:

1. Assessment

2. Subsequent care (bed rest, ambulation, diet, care of the vulva, care of the bowel and bladder functions, bathing, care of the breasts, temperature elevation)

3. Postpartum sterilization

4. Immunization: RHIG and Rubella

5. Discharge planning

405.05 Hospital Evaluation and Level of Care Designation

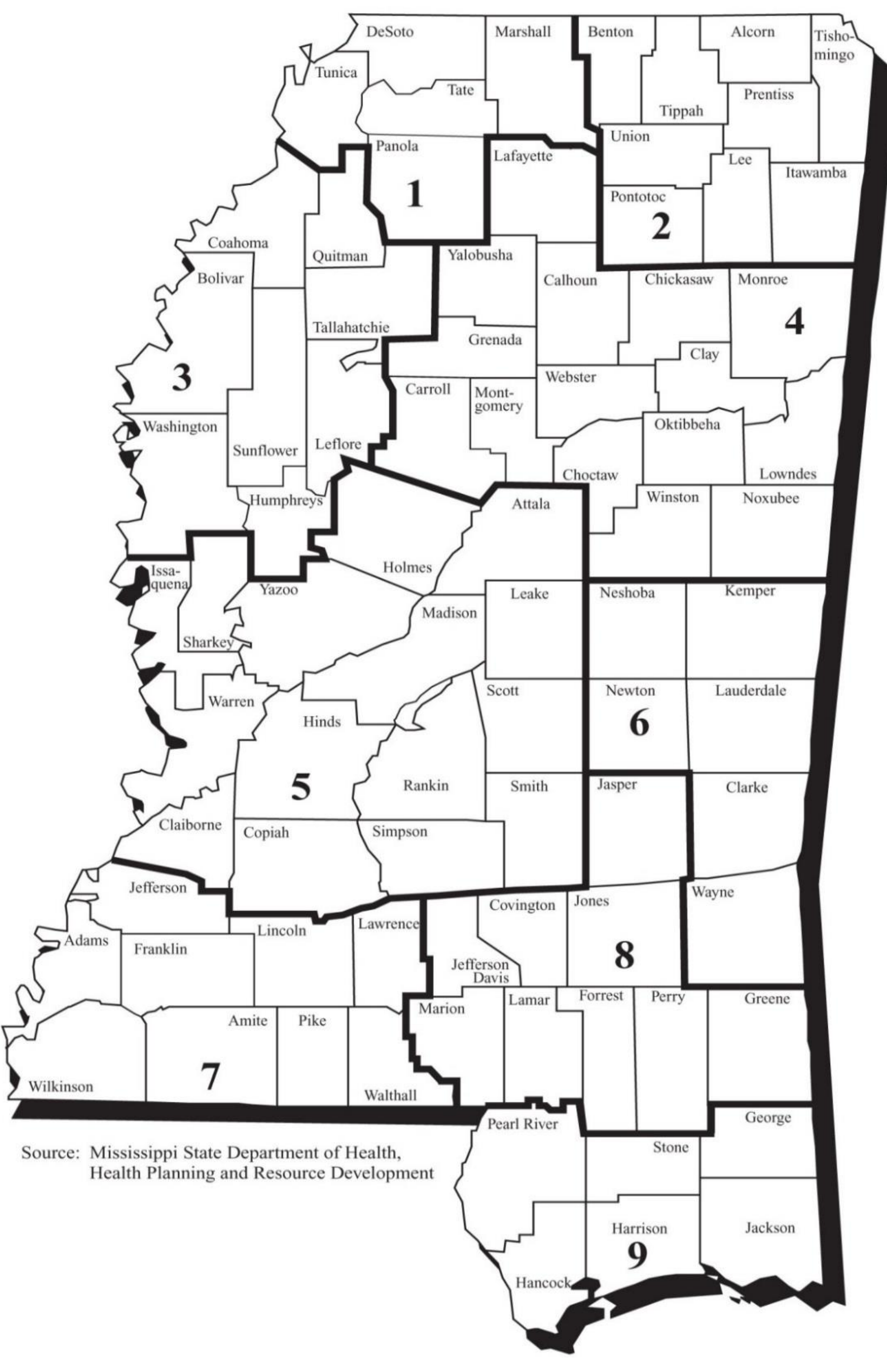
MSDH maintains the authority to evaluate hospitals offering obstetric and newborn services and designate a level of care based upon its clinical services and capacity.

References

American Academy of Pediatrics, Committee on Fetus and Newborn and American College of Obstetricians and Gynecologists Committee on Obstetric Practice, Edited by Kilpatrick, S, Papile, L., Macones, G. Guidelines for Perinatal Care, 8th Edition, Published 2017

American Academy of Pediatrics, Committee on fetus and Newborn; Levels of Neonatal Care. Pediatrics 2012; 130;587 DOI:10.1542/peds.2012-1999

Map 4-2
Perinatal Planning Area



Chapter 5 Acute Care Facilities and Services Overview

Mississippi had 112 non-federal medical/surgical hospitals in FY 2016, with a total of 13,155 licensed acute care beds (plus 573 beds held in abeyance by MSDH). This total includes one OB/GYN hospital but excludes one rehabilitation hospital with acute care beds and Delta Regional Medical Center-West Campus which is licensed as an acute care hospital but is used primarily for other purposes. This total also excludes long-term acute care (LTAC), rehabilitation, psychiatric, chemical dependency, and other special purpose beds. In addition, numerous facilities provide specific health care services on an outpatient basis. Some of these facilities are freestanding, others are closely affiliated with hospitals. Such facilities offer an increasingly wider range of services, many of which were once available only in inpatient acute care settings. Examples include diagnostic imaging, therapeutic radiation, and ambulatory surgery.

500 General Medical/Surgical Hospitals

When calculating the occupancy rate using total licensed bed capacity, the overall occupancy rate drops to 36.27 percent. Using these statistics and 2023 projected population totals, Mississippi had a licensed bed capacity to population ratio of 4.19 per 1,000 and an occupied bed to population ratio of 1.52 per 1,000. Table 5-1 shows the licensed Mississippi hospital beds by service areas.

These statistics indicate an average daily census in Mississippi hospitals of 4768.36 leaving approximately 8377.64 unused licensed beds on any given day. Eighty (80) of the state's hospitals reported occupancy rates of less than 40 percent during FY 2016.

Mississippi requires Certificate of Need (CON) review for all projects that increase the bed complement of a health care facility or exceed a capital expenditure threshold of $2 million. The law requires CON review regardless of capital expenditure for the construction, development, or other establishment of a new health care facility, including a replacement facility; the relocation of a health care facility or any portion of the facility which does not involve a capital expenditure and is more than 5,280 feet from the main entrance of the facility; and a change of ownership of an existing health care facility, unless the MSDH receives proper notification at least 30 days in advance. A health care facility that has ceased to treat patients for a period of sixty (60) months or more must receive CON approval prior to reopening. A CON is required for major medical equipment purchase if the capital expenditure exceeds $1.5 million and is not a replacement of existing medical equipment.

A statewide glut of licensed acute care beds complicates planning for community hospital services. There are far more hospital beds than needed. The average use of licensed beds has been less than fifty percent (50% percent) in recent years. With few exceptions, the surplus is statewide. The continued presence of surplus hospital beds in all planning districts, and in nearly all counties with acute care hospitals, raises a number of basic planning questions:

- Does the "carrying cost" of maintaining unused beds raise operating cost unnecessarily?
- Do the surpluses, and any associated economic burdens, retard the introduction of new and more cost effective practices and services?

- Do existing service~~s~~ providers maintain unwarranted surpluses to shield themselves from competition, as argued by some potential competitors?
- Should the space allocated to surplus beds be converted to other uses, particularly if doing so would avoid construction of new space, or facilities, to accommodate growing outpatient caseloads?
- Do the large surpluses mask need for additional services and capacity in some regions and reduce the sensitivity and responsiveness of planners and regulators to these legitimate community needs?
- Do the continuing surpluses, and the view of them by stakeholders and other interested parties, create an environment that invites policy intervention by legislators and other responsible parties?

These questions are unusually difficult to answer definitively. The fact that they arise frequently suggest the importance of reducing excess capacity where it is possible to do so and is not likely to result in problematic consequences. MSDH urges each hospital to voluntarily reduce the licensed bed capacity to equal its average daily census plus a confidence factor that will assure that an unused hospital bed will be available on any given day.

Table 5-1
Licensed Short-Term Acute Care Hospital Beds by Service Area
FY 2016

Facility	Licensed Beds	Abeyance Beds	Average Daily Census	Occupancy Rate	Average Length of Stay
General Hospital Service Area 1	**688**	**18**	**279.45**	**40.62**	**4.83**
Alliance Healthcare System, Inc.	40		7.85	19.62	6.11
Baptist Memorial Hospital - DeSoto	309		145.51	47.09	4.13
Methodist Healthcare Olive Branch Hospital*	67		16.94	25.29	3.61
North Oak Regional Medical Center - Senatobia	76		11.59	15.25	5.04
Panola Medical Center	102	18	31.21	30.60	4.61
Parkwood Behavioral Health System	94		66.35	70.59	8.90
General Hospital Service Area 2	**1,151**	**45**	**504.01**	**43.79**	**5.12**
Baptist Memorial Hospital - Booneville	104		13.70	13.17	9.70
Baptist Memorial Hospital - Union County	145		23.52	16.22	2.89
Laird Hospital	25		1.85	7.41	3.22
Magnolia Regional Health Center	200		84.66	42.33	4.22
North Mississippi Medical Center	577		324.84	56.30	5.04
North Mississippi State Hospital	50		46.38	92.76	29.54
Pontotoc Health Services	25		1.46	5.83	2.99
Tippah County Hospital	25	45	7.60	30.40	5.54
Tishomingo Health Services, Inc.	48		5.72	11.92	3.13
General Hospital Service Area 3	**983**	**41**	**292.73**	**29.78**	**4.92**
Allegiance Speciality Hospital of Greenville	39		22.21	56.94	18.62
Bolivar Medical Center	164	1	29.76	18.15	3.76
Delta Regional Medical Center	195		63.61	32.62	4.71
Delta Regional Medical Center- West Campus	67	40	9.53	14.23	4.95
Greenwood - AMG Specialty Hospital	40		19.82	49.55	24.12
Greenwood Leflore Hospital	188		60.18	32.01	4.03
Medical/Demtal Facility at Parchman	56		37.93	67.73	12.05
North Sunflower Medical Center	35		22.90	65.44	7.52
Northwest Mississippi Medical Center	171		33.13	19.38	3.88
South Sunflower County Hospital	49		15.13	30.88	4.05
Tallahatchie General Hospital	18		0.74	4.09	1.58
General Hospital Service Area 4	**1,255**	**49**	**324.39**	**25.85**	**4.04**
Baptist Memorial Hospital - North Mississippi	204		71.26	34.93	4.06
Baptist Memorial Hospital - Calhoun	25	4	2.17	8.69	3.34
Baptist Memorial Hospital-Golden Triangle	307		88.73	28.90	4.10
Choctaw Regional Medical Center	25	0	1.55	6.21	3.14
Clay County Medical Corporation	54		8.99	16.65	3.00
Diamond Grove Center	25		20.73	82.94	9.55
Gilmore Memorial Hospital	95		19.67	20.70	3.14
Monroe Regional Hospital	35		8.21	23.46	13.34
Noxubee General Critical Access Hospital	25		6.12	24.47	3.65
Oktibbeha County Hospital	90		20.98	23.32	3.33
Trace Regional Hospital	84	0	10.25	12.20	10.98
Tyler Holmes Memorial Hospital	25		3.06	12.24	3.41
University of Mississippi Medical Center- Grenada	156	4	27.79	17.81	4.17
Webster Health Services, Inc.	38		22.53	59.30	6.17
Winston Medical Center	41	41	10.41	25.39	4.42
Yalobusha General Hospital	26		4.67	17.96	3.39

Table 5-1 (continued)
Licensed Short-Term Acute Care Hospital Beds by Service Area
FY 2016

Facility	Licensed Beds	Abeyance Beds	Average Daily Census	Occupancy Rate	Average Length of Stay
General Hospital Service Area 5	**4,693**	**229**	**1,690.37**	**36.02**	**5.21**
Baptist Medical Center - Attala, Inc.	25	46	3.92	15.67	1.00
Baptist Medical Center - Leake, Inc.	25		5.50	22.01	3.80
Baptist Medical Center - Yazoo, Inc.	25		5.93	23.70	4.38
Brentwood Behavioral Healthcare of MS	105		71.03	67.65	9.35
Claiborne County Hospital	32		4.53	14.14	12.15
Copiah County Medical Center	25	10	13.29	53.16	6.57
Holmes County Hospital and Clinics	25	10	2.35	9.41	2.94
Magee General Hospital	64	20	10.35	16.16	3.99
Merit Health Central	304	143	80.92	26.62	4.86
Merit Health Madison	67		11.72	17.49	3.38
Merit Health Rankin	134		35.56	26.53	3.31
Merit Health River Oaks	130		37.75	29.04	5.00
Merit Health River Region	321		80.01	24.93	5.05
Merit Health Woman's Hospital	109		10.16	9.32	2.66
Mississippi Baptist Medical Center	541		246.46	45.56	4.38
Mississippi Methodist Rehabilitation Center	44		0.00	0.00	0.00
Mississippi State Hospital	1,347		171.95	12.77	57.69
Oak Circle Center	60		26.91	44.85	37.87
Patients' Choice Medical Center of Smith County	29		5.60	19.31	12.96
Promise Hospital of Vicksburg	35		27.82	79.48	25.84
Regency Hospital of Hattiesburg	33		27.61	83.68	27.55
S.E. Lackey Memorial Hospital	35		17.82	50.90	5.34
Select Specialty Hospital - Belhaven, LLC	25		18.59	74.36	32.67
Select Specialty Hospital - Jackson	53		40.27	75.97	25.29
Scott Regional Hospital	25		2.84	11.35	3.52
Sharkey - Issaquena Community Hospital	29		6.07	20.94	4.80
Simpson General Hospital	35		11.22	32.06	6.38
St. Dominic-Jackson Memorial Hospital	500		337.82	67.56	3.73
University of Mississippi Medical Center	479		372.26	77.72	4.69
Whitfield Medical Surgical Hospital	32	11	4.13	12.92	8.08
General Hospital Service Area 6	**1,088**	**111**	**490.01**	**45.04**	**5.48**
Alliance Health Center**	146		64.34	44.07	8.26
Anderson Regional Medical Center	260	71	134.60	51.77	4.06
Anderson Regional Medical Center South Campus	49		6.81	13.89	12.24
East Mississippi State Hospital	151	6	114.21	75.63	8.02
H.C. Watkins Memorial Hospital	25		2.76	11.02	3.90
John C. Stennis Memorial Hospital	25		0.96	3.85	2.78
Neshoba County General Hospital	48	34	17.13	35.68	4.14
Regency Hospital of Meridian	40		26.43	66.07	26.06
Rush Foundation Hospital	215		60.99	23.37	4.07
The Specialty Hospital of Meridian	49		43.66	89.10	27.35
Wayne General Hospital	80		18.13	22.66	4.01
General Hospital Service Area 7	**579**	**16**	**140.39**	**24.25**	**3.39**
Beacham Memorial Hospital	31	6	13.16	42.46	5.20
Field Health System	25		4.10	16.38	3.63
Franklin County Memorial Hospital	25	10	1.17	4.69	2.91
Jefferson County Hospital	30		3.32	11.06	10.41
King's Daughters Medical Center	99		28.20	28.48	2.57
Lawrence County Hospital	25		7.04	28.15	6.48
Merit Health Natchez	159		43.27	27.22	3.83
Southwest Mississippi Regional Medical Center	160		37.54	23.46	2.90
Walthall General Hospital	25		2.59	10.36	3.51

Table 5-1 (continued)
Licensed Short-Term Acute Care Hospital Beds by Service Area
FY 2016

Facility	Licensed Beds	Abeyance Beds	Average Daily Census	Occupancy Rate	Average Length of Stay
General Hospital Service Area 8	**1,180**	**41**	**513.90**	**43.55**	**4.62**
Covington County Hospital	35		2.68	7.67	3.72
Forrest General Hospital	480		283.22	59.00	4.20
Greene County Hospital	7	3	0.58	8.22	2.76
Jasper General Hospital	16		0.06	0.39	4.60
Jefferson Davis General Hospital	35		5.05	14.43	7.39
Marion General Hospital	49	30	9.21	18.79	5.00
Merit Health Wesley	211		83.31	39.48	4.90
Perry County General Hospital	22	8	0.75	3.40	3.22
South Central Regional Medical Center	275		82.93	30.15	4.01
South Mississippi State Hospital	50		46.11	92.22	23.83
General Hospital Service Area 9	**1,529**	45	**533.11**	**34.87**	**4.59**
Garden Park Medical Center	130		42.13	32.41	4.31
George Regional Hospital	48		9.27	19.30	3.36
Hancock Medical Center	102		13.24	12.98	3.39
Highland Community Hospital	60	45	15.50	25.84	3.54
Memorial Hospital at Gulfport	348		185.85	53.41	4.88
Merit Health Biloxi	180		83.87	46.60	5.34
Ocean Springs Hospital	136		73.22	53.84	3.78
Pearl River County Hospital	24		0.20	0.83	2.92
Select Specialty Hospital - Gulf Coast	61		27.17	44.55	24.39
Singing River Hospital	415		79.24	19.09	3.98
Stone County Hospital	25		3.41	13.62	3.66
TOTAL	**13,146**	**595**	**4,768.36**	**36.27**	**4.89**

Notes: Occupancy rate is calculated based on total number of licensed beds and excludes beds in abeyance. As a result, the occupancy rate may not equal the occupancy rate published in the *2016 Mississippi Hospital Report.*

Source: Application for Renewal of Hospital License for Calendar Year 2015 and FY 2016 Annual Hospital Report; Division of Health Planning and Resource Development, Office of Health Policy and Planning.

501 Hospital Outpatient Services

The following table shows the number of visits to hospital emergency rooms and hospital outpatient clinics in FY 2016. These statistics represent an increase over 2013's total of 4,877,339 visits to hospital emergency rooms and outpatient clinics.

Table 5-2
Selected Data for Hospital-Based or Affiliated Outpatient Clinics
by General Hospital Service Area
FY 2016

General Hospital Service Area	Number with Emergency Department	Number of Emergency Room Visits	Number of Hospitals with Outpatient Clinics	Number of Outpatient Clinic Visits	Total Outpatient Visits
Mississippi	**84**	**1,931,303**	**76**	**3,698,269**	**5,629,572**
1	5	132,004	5	74,383	206,387
2	8	203,360	7	357,607	560,967
3	7	147,798	4	248,158	395,956
4	13	219,362	12	511,299	730,661
5	19	481,425	20	1,029,974	1,511,399
6	6	114,467	7	285,068	399,535
7	8	113,616	7	208,541	322,157
8	8	190,306	6	186,975	377,281
9	10	328,965	8	796,264	1,125,229

Source: Applications for Renewals of Hospital License for Calendar Year 2015 and FY 2016 Annual Hospital Report, Mississippi State Department of Health.

502 Certificate of Need Criteria and Standards for General Acute Care Facilities

Should MSDH receive a CON application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until MSDH has developed and adopted CON criteria and standards. If MSDH has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of MSDH.

502.01 Policy Statement Regarding Certificate of Need Applications for General Acute Care Hospitals and General Acute Care Beds

1. Need in Counties Without a Hospital: Ten counties in Mississippi do not have a hospital: Amite, Benton, Carroll, Humphreys, Issaquena, Itawamba, Prentiss Quitman, Smith and Tunica. Most of these counties do not have a sufficient population base to indicate a potential need for the establishment of a hospital, and all appear to receive sufficient inpatient acute care services from hospitals in adjoining counties.

2. Expedited Review: MSDH may consider an expedited review for CON applications that address only license code deficiencies, project cost overruns, and relocation of facilities or services.

3. Capital Expenditure: For the purposes of CON review, transactions which are separated in time but planned to be undertaken within twelve (12) months of each other and which are components of an overall long-range plan to meet patient care objectives shall be reviewed in their entirety without regard to their timing. For the purposes of this policy, the governing board of the facility must have duly adopted the long-range plan at least twelve (12) months prior to the submission of the CON application.

4. Addition or Conversion of Beds: No health care facility shall be authorized to add any beds or convert any beds to another category of beds without a CON.

5. Beds in Abeyance: If a health care facility has voluntarily delicensed some of its existing bed complement, it may later relicense some or all of its delicensed beds without the necessity of having to acquire a CON. MSDH shall maintain a record of the delicensing health care facility and its voluntarily delicensed beds and continue counting those beds as part of the state’s total bed count for health care planning purposes.

6. Break in Services: A health care facility that has ceased to operate for a period of sixty (60) months or more shall require a CON prior to reopening.

502.02 Certificate of Need Criteria and Standards for the Establishment of a General Acute Care Hospital

MSDH will review applications for a CON to construct, develop, or otherwise establish a new hospital under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for a Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

Need Criterion 1: Acute Care Hospital Need Methodology
With the exception of psychiatric, chemical dependency, and rehabilitation hospitals, MSDH will use the following methodologies to project the need for general acute care hospitals:

a. **Counties Without a Hospital**
MSDH shall determine hospital need by multiplying the state's average annual occupied beds per 1,000 population (1.41 in FY 2013) by the estimated 2023 county population to determine the number of beds the population could utilize. A hospital with a maximum of 100 beds may be considered if the following three conditions are met: (i) the number of beds needed is 100 or more; (ii) there is strong community support for a hospital; and (iii) a hospital can be determined to be economically feasible.

b. **Counties With Existing Hospitals**
MSDH shall use the following formula to determine the need for an additional hospital in a county with an existing hospital:

$$ADC + \frac{K}{ADC}$$

ADC = Average Daily Census
K = Confidence Factor of 2.57

The formula is calculated for each facility within a given General Hospital Service Area (GHSA); then beds available and beds needed under the statistical application of the formula are totaled and subtracted to determine bed need or excess within each GHSA. Map 5-1 delineates the GHSAs. A hospital with a maximum of 100 beds may be considered if the following three conditions are met: (i) the number of beds needed is 100 or more; (ii) there is strong community support for a hospital; and (iii) a hospital can be determined to be economically feasible.

c. **Counties with Existing Hospitals Located in an Underdeveloped General Hospital Service Area and With a Rapidly Growing Population**
If the need methodology in b above shows that a need does not exist in that county, an Applicant may further demonstrate need for an acute care hospital not to exceed one hundred (100) beds if the county has a population in excess of 140,000 people; the

county projects a population growth rate in excess of ten percent (10%) over the next ten (10) year period; and the county's GHSA does not presently exceed a factor of three beds per 1,000 population.

Further, any person proposing a new hospital under this criterion must meet the following conditions:

i. Provide an amount of indigent care in excess of the average of the hospitals in the General Hospital Service Area as determined by the State Health Officer;

ii. Provide an amount of Medicaid care in excess of the average of the hospitals in the General Hospital Service Area as determined by the State Health Officer; and

iii. If the proposed hospital will be located in a county adjacent to a county or counties without a hospital, the applicant must establish outpatient services in the adjacent county or counties without a hospital;

iv. Fully participate in the Trauma Care System at a level to be determined by the MSDH for a reasonable number of years to be determined by the State Health Officer. Fully participate means play in the Trauma Care System as provided in the Mississippi Trauma Care System Regulations and the new hospital shall not choose or elect to pay a fee not to participate or participate at a level lower than the level specified in the CON; and

v. The new hospital must also participate as a network provider in the State and School Employees' Health Insurance Plan as defined in Mississippi Code Section 25-15-3 and 25-15-9.

Need Criterion 2: Indigent/Charity Care

The applicant shall affirm that the applicant will provide a "reasonable amount" of indigent/charity care as described in Chapter 1 of this *Plan*.

502.03 Certificate of Need Criteria and Standards for Construction, Renovation, Expansion, Capital Improvements, Replacement of Health Care Facilities, and Addition of Hospital Beds

MSDH will review applications for a Certificate of Need for the addition of beds to a health care facility and projects for construction, renovation, expansion, or capital improvement involving a capital expenditure in excess of $5,000,000 (for clinical health services) or $10,000,000 (for nonclinical health services). MSDH will further review applications under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of the MSDH; and the specific criteria and standards listed below.

The construction, development, or other establishment of a new health care facility, the replacement and/or relocation of a health care facility or portion thereof, and changes of ownership of existing health care facilities are reviewable regardless of capital expenditure.

Need Criterion 1: Acute Care Bed Need

a. **Projects which do not involve the addition of any acute care beds**
The applicant shall document the need for the proposed project. Documentation may consist of, but is not limited to, citing of licensure or regulatory code deficiencies, institutional long-term plans (duly adopted by the governing board), recommendations made by consultant firms, and deficiencies cited by accreditation agencies (JCAHO, CAP, etc.). In addition, for projects which involve construction, renovation, or expansion of emergency department facilities, the applicant shall include a statement indicating whether the hospital will participate in the statewide trauma system and describe the level of participation, if any.

b. **Projects which involve the addition of beds**
The applicant shall document the need for the proposed project. In addition to the documentation required as stated in Need Criterion (1) (a), the applicant shall document that the facility in question has maintained an occupancy rate of at least sixty percent (60%) for the most recent two (2) years or has maintained an occupancy rate of at least seventy percent (70%) for the most recent two (2) years according to the below formula:

Observation patient days/365/ licensed beds + Inpatient Occupancy rate

Note: *An observation patient day is a patient that has NOT been admitted as an inpatient, but occupies an acute care bed (observation bed) and is provided observation services in a licensed, acute care hospital. Hospitals shall follow strict guidelines set forth by The Centers for Medicare & Medicaid Services, health insurance companies, and others in reporting observation bed data to the Department. For definitions that correspond with the above referenced item, please refer to the Glossary included in the Plan.

Need Criterion 2: Bed Service Transfer/Reallocation/Relocation
Applications proposing the transfer, reallocation, and/or relocation of a specific category or sub-category of bed/service from another facility as part of a renovation, expansion, or replacement project shall document that the applicant will meet all regulatory/licensure requirements for the type of bed/service being transferred/reallocated/relocated.

Need Criterion 3: Charity/Indigent Care
The application shall affirm that the applicant will provide a "reasonable amount" of indigent/charity care as described in Chapter 1 of this *Plan*.

Need Criterion 4: Cost of Project
The application shall demonstrate that the cost of the proposed project, including equipment, is reasonable in comparison with the cost of similar projects in the state.

a. The applicant shall document that the cost per square foot (per bed if applicable) does not exceed the median construction costs, as determined by the MSDH, for similar projects in the state within the most recent 12-month period by more than fifteen percent (15%). The Glossary of this *Plan* provides the formulas to be used by MSDH staff in calculating the cost per square foot for construction and/or construction/renovation projects.

b. If equipment costs for the project exceed the median costs for equipment of similar quality by more than fifteen percent (15%), the applicant shall provide justification for the excessive costs. The median costs shall be based on projects submitted during the most recent six-month period and/or estimated prices provided by acceptable vendors.

Need Criterion 5: Project Specifications
The applicant shall specify the floor areas and space requirements, including the following factors:

a. The gross square footage of the proposed project in comparison to state and national norms for similar projects.

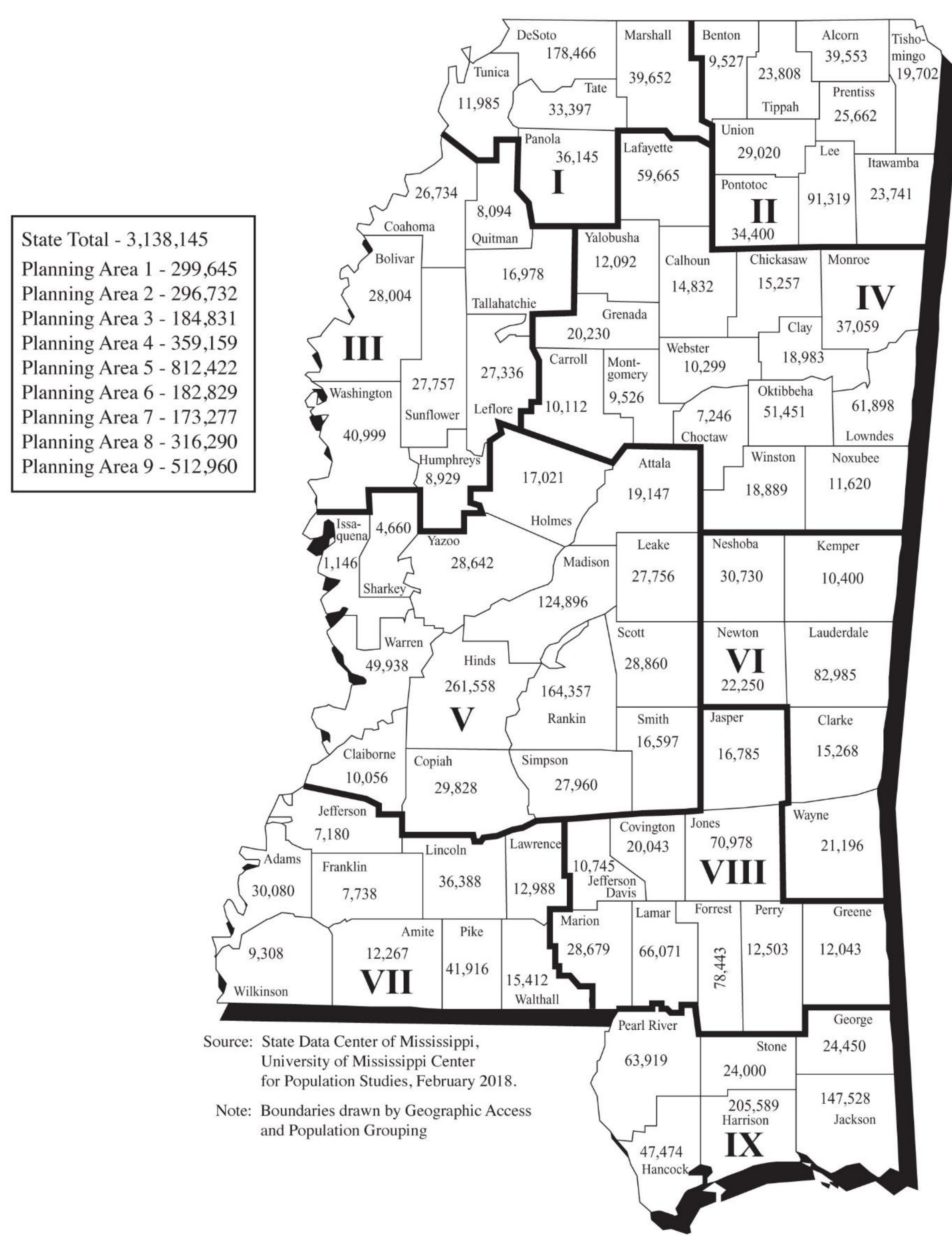
b. The architectural design of the existing facility if it places restraints on the proposed project.

c. Special considerations due to local conditions.

Need Criterion 6: Renovation/Expansion Justification
If the cost of the proposed renovation or expansion project exceeds eighty-five percent (85%) of the cost of a replacement facility, the applicant shall document their justification for rejecting the option of replacing said facility.

Need Criterion 7: Need for Service
The applicant shall document the need for a specific service (i.e. perinatal, ambulatory care, psychiatric, etc.) using the appropriate service specific criteria as presented in this and other sections of the *Plan*.

Map 5-1
General Hospital Service Areas
2023 Population Projections



503 Long-Term Acute Care Hospitals

A long-term acute care (LTAC) hospital is a freestanding, Medicare-certified acute care hospital with an average length of inpatient stay greater than twenty-five (25) calendar days, which is primarily engaged in providing chronic or long-term medical care to patients who do not require more than three (3) hours of rehabilitation or comprehensive rehabilitation per day, and has a transfer agreement with an acute care medical center and a comprehensive medical rehabilitation facility. As of FY 2016, sixteen (16) long-term acute care hospitals were in operation. The following table lists specific LTAC information.

Table 5-3
Long-Term Acute Care Hospitals
2016

Facility	Location	Licensed Beds	Occupancy Rate	Discharges	ALOS
General Hospital Service Area 1		**0**	**0.00**	**0**	**0.00**
NONE					
General Hospital Service Area 2		**0**	**0.00**	**0**	**0.00**
NONE					
General Hospital Service Area 3		**79**	**53.20**	**737**	**20.91**
Allegiance Specialty Hospital Greenville*	- Greenville	39	56.94	430	18.62
Greenwood AMG Specialty Hospital*	- Greenwood	40	49.55	307	24.12
General Hospital Service Area 4		**0**	**0.00**	**0**	**0.00**
NONE					
General Hospital Service Area 5		**88**	**77.37**	**962**	**25.51**
Mississippi Hospital for Restorative Care	- Jackson		0.00		0)
Promise Hospital of Vicksburg	- Vicksburg	35	79.48	377	25.84
Regency Hospital of Jackson	- Jackson		0.00		0.00
Select Specialty Hospital of Jackson	- Jackson	53	75.97	585	25.29
General Hospital Service Area 6		**89**	**78.75**	**964**	**26.86**
Regency Hospital of Meridian	- Meridian	40	66.07	370	26.06
Specialty Hospital of Meridian	- Meridian	49	89.10	594	27.35
General Hospital Service Area 7		**0**	**0.00**	**0**	**0.00**
NONE					
General Hospital Service Area 8		**33**	**83.68**	**365**	**27.55**
Regency Hospital of Southern Mississippi	- Hattiesburg	33	83.68	365	27.55
General Hospital Service Area 9		**61**	**44.55**	**388**	**24.39**
Select Specialty Hospital-Gulfport	- Gulfport	61	44.55	388	24.39
TOTAL		**350**	**67.14**	**3,416**	**24.99**

Note: There are currently no LTAC Hospitals located in GHSA 1, 2, 4, and 7.
Source: Applications for Renewal of Hospital License for Calendar Year 2016; FY 2017 Annual Hospital Report

504 Certificate of Need Criteria and Standards for Long-Term Acute Care Hospitals/Beds

Should MSDH receive a CON application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until MSDH has developed and adopted CON criteria and standards. If MSDH has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of MSDH.

504.01 Policy Statement Regarding Certificate of Need Applications for Long-Term Acute Care Hospitals and Long-Term Acute Care Hospital Beds

1. Restorative Care Admissions: Restorative care admissions shall be identified as patients with one or more of the following conditions or disabilities:

   a. Neurological Disorders

      i. Head Injury

      ii. Spinal Cord Trauma

      iii. Perinatal Central Nervous System Insult

      iv. Neoplastic Compromise

      v. Brain Stem Trauma

      vi. Cerebral Vascular Accident

      vii. Chemical Brain Injuries

   b. Central Nervous System Disorders

      i. Motor Neuron Diseases

      ii. Post Polio Status

      iii. Developmental Anomalies

      iv. Neuromuscular Diseases (e.g. Multiple Sclerosis)

      v. Phrenic Nerve Dysfunction

vi. Amyotrophic Lateral Sclerosis

c. Cardio-Pulmonary Disorders

i. Obstructive Diseases

ii. Adult Respiratory Distress Syndrome

iii. Congestive Heart Failure

iv. Respiratory Insufficiency

v. Respiratory Failure

vi. Restrictive Diseases

vii. Broncho-Pulmonary Dysplasia

viii. Post Myocardial Infarction

ix. Central Hypoventilation

d. Pulmonary Cases

i. Presently Ventilator-Dependent/Weanable

ii. Totally Ventilator-Dependent/Not Weanable

iii. Requires assisted or partial ventilator support

iv. Tracheostomy that requires supplemental oxygen and bronchial hygiene

2. Bed Licensure: All beds designated as long-term care hospital beds shall be licensed as general acute care.

3. Average Length of Stay: Patients' average length of stay in a long-term care hospital must be twenty-five (25) calendar days or more.

4. Size of Facility: Establishment of a long-term care hospital shall not be for less than twenty (20) beds.

5. Long-Term Medical Care: A long-term acute care hospital shall provide chronic or long-term medical care to patients who do not require more than three (3) hours of rehabilitation or comprehensive rehabilitation per day.

6. Transfer Agreement: A long-term acute care hospital shall have a transfer agreement with an acute care medical center and a comprehensive medical rehabilitation facility.

7. Addition or Conversion of Beds: Effective July 1, 1994, no health care facility shall be authorized to add any beds or convert any beds to another category of beds without a CON under the authority of Section 41-7-191(1)(c), unless there is a projected need for such beds in the planning district in which the facility is located.

504.02 Certificate of Need Criteria and Standards for the Establishment of a Long-Term Acute Care Hospital and Addition of Long-Term Acute Care Hospital Beds

MSDH will review applications for a CON for the construction, development, or otherwise establishment of a long-term acute care hospital and bed additions under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for CON according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

Need Criterion 1: Projected Need
The applicant shall document a minimum of 450 clinically appropriate restorative care admissions with an average length of stay of twenty-five (25) days.

Need Criterion 2: Financial Feasibility
A projection of financial feasibility by the end of the third year of operation.

Need Criterion 3: Bed Licensure
The applicant shall document that any beds which are constructed/converted will be licensed as general acute care beds offering long-term acute care hospital services.

Need Criterion 4: Licensure
Applicants proposing the transfer/reallocation/relocation of a specific category or sub-category of bed/service from another facility as part of a renovation, expansion, or replacement project shall document that they will meet all regulatory and licensure requirements for the type of bed/service proposed for transfer/reallocation/relocation.

Need Criterion 5: Indigent/Charity Care
The application shall affirm that the applicant will provide a "reasonable amount" of indigent/charity care as described in Chapter 1 of this *Plan*.

Need Criterion 6: Project Cost

The application shall demonstrate that the cost of the proposed project, including equipment, is reasonable in comparison with the cost of similar projects in the state. The applicant shall document that the cost per square foot (per bed if applicable) does not exceed the median construction costs, as determined by the MSDH, for similar projects in the state within the most recent twelve (12) month period by more than fifteen percent (15%). The Glossary of this *Plan* provides the formulas MSDH staff shall use to calculate the cost per square foot of space for construction and/or construction-renovation projects.

Need Criterion 7: Floor Area and Space Requirements

The applicant shall specify the floor areas and space requirements, including the following factors:

a. The gross square footage of the proposed project in comparison to state and national norms for similar projects.

b. The architectural design of the existing facility if it places restraints on the proposed project.

c. Special considerations due to local conditions.

Need Criterion 8: Transfer Agreement

The applicant shall provide copies of transfer agreements entered into with an acute care medical center and a comprehensive medical rehabilitation facility.

505 Swing -Bed Programs and Extended Care Services

Federal law allows rural hospitals with fewer than 100 hospital beds to utilize its beds as "swing beds" to provide post-acute extended care services. 42 C.F.R. § 482.58. Hospitals must have a Medicare provider agreement and meet several eligibility and skilled nursing facility service requirements to be granted CMS approval to provide post-hospital extended care services and to be reimbursed as a swing-bed hospital.

Swing-bed hospitals have the same Medicare coverage requirements and coinsurance provisions as nursing facilities. In addition to meeting acute care standards, swing-bed hospitals must also substantially comply with the eight skilled nursing facility services standards listed in 42 C.F.R. §482.58(b). These standards include resident rights, admission, transfer, and discharge rights, freedom from abuse, neglect, and exploitation, dental services, specialized rehabilitative services, social services, patient activities, and discharge planning. Because many patients, particularly elderly patients, no longer need acute hospital care but are not well enough to go home, swing-beds enable the hospital to provide nursing care, rehabilitation, and social services with a goal of returning patients to their homes. Many of these patients would become nursing home residents without the extended period of care received in a swing-bed.

Swing-beds provide a link between inpatient acute care and home or community-based services in a continuum for the elderly and others with long-term needs. If it is not possible for the patient to return home, the swing-bed hospital assists the patient and their family with nursing home placement. Ideally, the swing-bed concept should help alleviate low utilization problems in small rural hospitals and provide a new revenue source with few additional expenses while also more efficiently utilizing hospital staff during periods of low acute care occupancy.

505.01 Swing -Bed Utilization

Forty-seven (47) Mississippi hospitals and one specialty hospital participated in the swing bed program during Fiscal Year 2016. They reported 6,980 discharges from their swing beds and an average length of stay of 16.25 days.

Table 5-4
Swing-Bed Utilization
FY 2016

Facility	Licensed Beds	Discharges	ALOS	Average Daily Census
General Hospital Service Area 1	**3**	**33**	**6.79**	**0.57**
Alliance Health Care System	3	33	6.79	0.57
General Hospital Service Area 2	**35**	**1047**	**13.97**	**43.84**
Baptist Memorial Hospital-Union County	0	95	7.73	1.98
Laird Hospital	25	247	11.35	7.71
Pontotoc Health Services	0	343	20.22	19.29
Tippah County Hospital	10	166	16.18	7.16
Tishomingo Health Services, Inc.	10	196	14.35	7.70
General Hospital Service Area 3	**66**	**615**	**28.90**	**23.51**
Bolivar Medical Center	12	127	10.21	3.65
North Sunflower Medical Center	15	322	14.07	12.96
South Sunflower County Hospital	30	107	15.69	4.63
Tallahatchie General Hospital	9	59	75.61	2.27
General Hospital Service Area 4	**151**	**1,782**	**14.65**	**71.71**
Baptist Memorial Hospital- Calhoun	25	100	23.82	6.27
Choctaw Regional Medical Center	15	149	13.62	5.37
Clay County Medical Corporation	10	196	11.56	6.20
Gilmore Memorial Hospital	0	59	6.63	1.07
Monroe Regional Hospital	0	245	15.76	10.37
Noxubee General Critical Access Hospital	25	173	16.11	7.74
Oktibbeha County Hospital	10	124	8.79	3.06
Trace Regional Hospital	10	4	22.25	0.28
Tyler Holmes Memorial Hospital	10	140	17.15	6.87
Webster Health Services	20	349	13.50	12.81
Winston Medical Center	0	13	8.46	0.30
Yalobusha General Hospital	26	230	18.15	11.37
General Hospital Service Area 5	**54**	**1,063**	**15.00**	**54.08**
Baptist Medical Center- Attala, Inc.	0	0	0.00	7.82
Baptist Medical Center - Yazoo, Inc.	10	185	14.17	5.06
Baptist Medical Center- Leake, Inc.	25	281	17.07	12.69
Holmes County Hospital & Clinics	0	69	18.86	4.09
Magee General Hospital	12	158	17.52	7.72
Claiborne County Hospital	7	126	14.41	5.02
Scott Regional Hospital	0	83	23.43	5.14
Simpson General Hospital	0	161	14.56	6.54

Source: Applications for Renewal of Hospital License for Calendar Year 2016; FY 2017 Annual Hospital Report

Table 5-4 (Continued)
Swing-Bed Utilization
FY 2016

Facility	Licensed Beds	Discharges	ALOS	Average Daily Census
General Hospital Service Area 6	**115**	**1,018**	**11.51**	**40.86**
Anderson Regional Medical Center South	25	362	16.45	16.31
H.C. Watkins Memorial Hospital	25	207	16.11	8.98
John C Stennis Memorial Hospital	25	217	11.83	7.13
Neshoba County General Hospital	10	25	11.44	0.79
Speciality Hospital of Meridan	20	0	0	0.01
Wayne General Hospital	10	207	13.20	7.64
General Hospital Service Area 7	**51**	**518**	**18.82**	**28.50**
Field Health System	16	125	16.53	5.55
Franklin County Memorial Hospital	25	194	28.21	14.79
Lawerence County Hospital	10	95	16.08	4.22
Walthall County General Hospital	0	104	14.45	3.94
General Hospital Service Area 8	**57**	**720**	**17.80**	**34.75**
Covington County Hospital	25	248	15.66	10.44
Greene County Hospital	0	75	19.80	4.07
Jasper General Hospital	12	127	20.57	6.99
Jefferson Davis Community Hospital	0	66	13.61	2.50
Marion General Hospital	20	204	19.34	10.75
Ganeral Hospital Service Area 9	**0**	**184**	**18.77**	**13.72**
George Regional Hospital	0	7	10.43	0.20
Stone County Hospital	0	177	27.11	13.52
State Total	**532**	**6,980**	**16.25**	**311.54**

Source: Applications for Renewal of Hospital License for Calendar Year 2016; FY 2017 Annual Hospital Report

Note(s): According to the Applications for Renewal of Hospital License for Calendar Year 2016 and FY 2017 Annual Hospital Report: Baptist Memorial Hospital-Union County, Pontotoc Health Services, Gilmore Memorial Hospital, Monroe Regional Hospital, Winston Medical Center, Baptist Medical Center- Attala, Inc., Holmes County Hospital & Clinics, Scott Regional Hospital, Simpson General Hospital and George Regional Hospital reported zero (0) licensed Swing Beds.

505.02 Certificate of Need Criteria and Standards for Swing-Bed Services

MSDH will review applications for a CON to establish swing-bed services under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for CON according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of the MSDH; and the specific criteria and standards listed below.

Need Criterion 1: Federal Requirements
The application shall document that the hospital will meet all federal regulations regarding the swing-bed concept. However, a hospital may have more licensed beds or a higher average daily census (ADC) than the maximum number specified in federal regulations for participation in the swing-bed program.

Need Criterion 2: Resolution Adopted for Proposed Participation
The applicant shall provide a copy of the Resolution adopted by its governing board approving the proposed participation.

Need Criterion 3: Hospitals Proposing Beds over the Maximum allowed by Federal Law
If the applicant proposes to operate and staff more than the maximum number of beds specified in federal regulations for participation in the swing-bed program, the application shall give written assurance that only private pay patients will receive swing-bed services once the federal threshold is met.

Need Criterion 4: Medicare Recipients
The application shall affirm that upon receiving CON approval and meeting all federal requirements for participation in the swing-bed program, the applicant shall render services provided under the swing-bed concept to any patient eligible for Medicare (Title XVIII of the Social Security Act) who is certified by a physician to need such services.

Need Criterion 5: Limitation on Medicare/Medicaid Patients
The application shall affirm that upon receiving CON approval and meeting all federal requirements for participation in the swing-bed program, the applicant shall not permit any patient who is eligible for both Medicaid and Medicare or is eligible only for Medicaid to stay in the swing-beds of a hospital for more than thirty (30) days per admission unless the hospital receives prior approval for such patient from the Division of Medicaid.

Need Criterion 6: Hospitals with More Licensed Beds or a Higher Average Daily Census
The application shall affirm that if the hospital has more licensed beds or a higher average daily census than the maximum number specified in federal regulations for participation in the swing-bed program, the applicant will develop a procedure to ensure that, before a patient is allowed to stay in the swing-beds of the hospital, there are no vacant nursing home beds available within a fifty (50) mile radius (geographic area) of the hospital. The applicant shall also affirm that if the hospital has a patient staying in the swing-beds of the hospital and the hospital receives notice from a nursing home located within a fifty (50) mile radius that there

is a vacant bed available for that patient, the hospital shall transfer the swing-bed patient to the nursing home within five days, exclusive of holidays and weekends, unless the patient's physician certifies that the transfer is not medically appropriate.

Need Criterion 7: Transfer Agreements
The applicant shall provide copies of transfer agreements entered into with each nursing facility within the applicant's geographic area.

Need Criterion 8: Failure to Comply
An applicant subject to the conditions stated in Need Criterion #5 shall affirm in the application that they will be subject to suspension from participation in the swing-bed program for a reasonable period of time by MSDH, after a hearing complying with due process, MSDH, determines that the hospital has failed to comply with any of those requirements.

506 Therapeutic Radiation Services

Therapeutic radiology (also called radiation oncology, megavoltage radiotherapy, or radiation therapy) is the treatment of cancer and other diseases with radiation. Radiation therapy uses high energy photons (x-ray or gamma rays) or charged particles (electrons, protons or heavy nuclei) to damage critical biological molecules in tumor cells. Radiation in various forms is used to kill cancer cells by preventing them from multiplying. Therapeutic radiation may be used to cure or control cancer, or to alleviate some of the symptoms associated with cancer (palliative care). Radiation therapy services does not include low energy, superficial, external beam x-ray treatment of superficial skin lesions.

In radiation therapy, a non-invasive treatment can be given repetitively over several weeks to months and can be aimed specifically at the area where treatment is needed, minimizing side effects for uninvolved normal tissues. This repetitive treatment is called fractionation because a small fraction of the total dose is given each treatment. Radiotherapy can only be performed with linear accelerator (linac) technology. Conventionally administrated external beam radiation therapy gives a uniform dose of radiation to the entire region of the body affected by the tumor. Only a small variation of the dose is delivered to various parts of the tumor. Radiotherapy may not be as effective as stereotactic radiosurgery, which can give higher doses of radiation to the tumor itself.

Another type of radiation therapy used in Mississippi is brachytherapy. Unlike the external beam therapy, in which high-energy beams are generated by a machine and directed at a tumor from outside the body, brachytherapy involves placing a radioactive material directly into the body.

507 Stereotactic Radiosurgery

Despite its name, stereotactic radiosurgery is a non-surgical procedure that uses highly focused x-rays (or in some cases, gamma rays) to treat certain types of tumors, inoperable lesions, and as a post-operative treatment to eliminate any leftover tumor tissue. Stereotactic radiosurgery treatment involves the delivery of a single high-dose – or in some cases, smaller multiple doses – of radiation beams that converge on the specific area of the brain where the tumor or other abnormality resides.

Stereotactic radiosurgery was once limited to the GammaKnife® for treating intra-cranial lesions and functional issues. With the introduction of CyberKnife® and other LINAC-based radiosurgery systems, there has been rapid growth in total-body radiosurgery. The modified LINAC radiosurgery modality is now being used to treat lung, liver, pancreas, prostate, and other body areas. Some modified full-body LINAC models use full-body frames as a guiding tool and others do not. Therefore, the term "stereotactic radiosurgery" will refer to radiosurgery regardless of whether a full-body frame is used or not. A full course of radiosurgery requires only one to five (5) treatments versus thirty (30) to forty (40) for radiotherapy.

Three (3) basic types of stereotactic radiosurgery are in common use, each of which uses different instruments and sources of radiation:

Cobalt 60 Based (Gamma Knife), which uses 201 beams of highly focused gamma rays. Because of its incredible accuracy, the Gamma Knife is ideal for treating small to medium size lesions.

Linear accelerator (LINAC) based machines, prevalent throughout the world, deliver high-energy x-ray photons or electrons in curving paths around the patient's head. The linear accelerator can perform radiosurgery on larger tumors in a single session or during multiple sessions (fractionated stereotactic radiotherapy). Multiple manufacturers make linear accelerator machines, which have names such as:

Axess®, Clinac®, Cyberknife®, Novalis®, Peacock®, TomoTherapy®, Trilogy®, or X-Knife®. According to Accuray, the CyberKnife® is the world's only robotic radiosurgery system designed to treat tumors anywhere in the body non-invasively and with sub-millimeter accuracy.

Particle beam (photon) or cyclotron based machines are in limited use in North America.

Table 5-5 presents the facilities offering megavoltage therapeutic radiation therapy.

508 Diagnostic Imaging Services

Diagnostic imaging equipment and services, except for magnetic resonance imaging, positron emission tomography, and invasive digital angiography, are reviewable under the state's Certificate of Need law only when the capital expenditure for the acquisition of the equipment and related costs exceeds $1.5 million. The provision of invasive diagnostic imaging services, i.e., invasive digital angiography, positron emission tomography, and the provision of magnetic resonance imaging services require a Certificate of Need if the proposed provider has not offered the services on a regular basis within 12 months prior to the time the services would be offered, regardless of the capital expenditure.

Equipment in this category includes, but is not limited to: ultrasound, diagnostic nuclear medicine, digital radiography, angiography equipment, computed tomographic scanning equipment, magnetic resonance imaging equipment, and positron emission tomography.

Table 5-5
Facilities Reporting Megavoltage Therapeutic Radiation Services
by General Hospital Service Area
FY 2015 and FY 2016

Facility	County	Number of Treatments (Visits)	
		2015	2016
General Hospital Service Area 1		**10,302**	**9,875**
Baptist Memorial Hospital - DeSoto	DeSoto	10,302	9,875
General Hospital Service Area 2		**17,196**	**14,438**
Magnolia Regional Health Center	Alcorn	4,003	3,873
North Miss Medical Center	Lee	13,193	10,565
General Hospital Service Area 3		**9,043**	**10,550**
Alliance Cancer Center-Clarksdale	Coahoma	2,237	2,130
Alliance Cancer Center- Greenville	Washington	3,589	4,058
Greenwood Leflore Hospital	Leflore	3,217	4,362
General Hospital Service Area 4		**24,033**	**22,540**
Baptist Memorial Hospital - Golden Triangle	Lowndes	18,152	15,625
Baptist Memorial Hospital - North Miss	Lafayette	5,881	6,915
Cancer Care at Premier Health Complex[1]	Oktibbeha	DNS	DNS
General Hospital Service Area 5		**47,484**	**44,916**
Vicksburg Oncology Associates[1]	Warren	4,492	4,653
Merit Health Central	Hinds	7,542	6,002
Miss Baptist Medical Center	Hinds	11,561	11,472
Promise Hospital of Vicksburg	Warren	-	-
St. Dominic Jackson- Memorial Hospital	Hinds	12,937	12,015
University of Mississippi Medical Center	Hinds	10,952	10,774
General Hospital Service Area 6		**1**	**1**
Anderson Regional Cancer Center	Lauderdale	1	1
General Hospital Service Area 7		**7,480**	**7,597**
Caring River Cancer Center[1]	Adams	2,814	3,130
Southwest Miss Regional Medical Center	Pike	4,666	4,467
General Hospital Service Area 8		**19,577**	**21,312**
Forrest General Hospital	Forrest	15,580	17,281
Laurel Cancer Care[1]	Jones	3,997	3,942
Regency Hospital of Hattiesburg*	Forrest	-	-
South Central Regional Medical Center****	Jones	-	89
General Hospital Service Area 9		**18,968**	**52,349**
Cedar Lake Oncology Center[1]	Harrison	2,439	3,915
Memorial Hospital at Gulfport	Harrison	9,586	10,611
Merit Health Biloxi	Harrison	2,436	33,316
Ocean Springs Hospital**	Jackson	-	-
Select Specialty Hospital - Gulf Coast***	Harrison	-	-
Singing River Hospital**	Jackson	4,507	4,507
State Total		**154,084**	**183,578**

[1] Indicates freestanding clinics.
*Regency Hospital of Hattiesburg uses Forrest General Hospital's Linear Accelerator Machine.
**Singing River Hospital and Ocean Springs Hospital share one Linear Accelerator Machine.
***Select Specialty Hospital – Gulf Coast uses Memorial Hospital at Gulfport's Linear Accelerator Machine.
****South Central Regional Medical Center uses Laurel Cancer Care's Linear Accelerator Machine.
DNS- Did Not Submit

Sources: Applications for Renewal of Hospital License for Calendar Years 2015 and 2016

509 Certificate of Need Criteria and Standards for Therapeutic Radiation Services

Note: Should MSDH receive a CON application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until MSDH has developed and adopted CON criteria and standards. If MSDH has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of MSDH.

509.01 Policy Statement Regarding Certificate of Need Applications for the Acquisition or Otherwise Control of Therapeutic Radiation Equipment, and/or the Offering of Therapeutic Radiation Services (other than Stereotactic Radiosurgery)

1. Service Areas: MSDH shall determine the need for therapeutic radiation services equipment using the General Hospital Service Areas as presented in this chapter of the *Plan*. MSDH shall determine the need for therapeutic radiation services and equipment within a given service area independently of all other service areas. Map 5-1 shows the General Hospital Service Areas.

2. Equipment to Population Ratio: The need for therapeutic radiation units (as defined) is determined to be one unit per 142,592 population (see methodology in Section 509.02.02 of the *Plan*). MSDH will consider out-of-state population in determining need only when the applicant submits adequate documentation acceptable to MSDH, such as valid patient origin studies.

3. Limitation of New Services: When the therapeutic radiation unit-to-population ratio reaches one to 142,592 in a given general hospital service area, no new therapeutic radiation services may be approved unless the utilization of all the existing machines in a given hospital service area averaged 8,000 treatments or 320 patients per year for the two most recent consecutive years as reported on the "Renewal of Hospital License and Annual Hospital Report." For purposes of this policy Cesium-137 teletherapy units, Cobalt-60 teletherapy units designed for use at less than 80 cm SSD (source to skin distance), old betatrons and van de Graaf Generators, unsuitable for modern clinical use, shall not be counted in the inventory of therapeutic radiation units located in a hospital service area.

4. Expansion of Existing Services: MSDH may consider a CON application for the acquisition or otherwise control of an additional therapeutic radiation unit by an existing provider of such services when the applicant's existing equipment has exceeded the expected level of patient service, i.e., 320 patients per year or 8,000 treatments per year for the two most recent consecutive years as reported on the facility's "Renewal of Hospital License and Annual Hospital Report."

5. Equipment Designated for Backup: Therapeutic radiation equipment designated by an applicant as "backup" equipment shall not be counted in the inventory for CON purposes. Any treatments performed on the "backup" equipment shall be attributed to the primary equipment for CON purposes. “Backup” equipment should only be utilized when the primary equipment is deemed out of service.

6. Definition of a Treatment: For health planning and CON purposes a patient "treatment" is defined as one individual receiving radiation therapy during a visit to a facility which provides megavoltage radiation therapy regardless of the complexity of the treatment or the number of "fields" treated during the visit.

7. Use of Equipment or Provision of Service: Before the equipment or service can be utilized or provided, the applicant desiring to provide the therapeutic radiation equipment or service shall have CON approval or written evidence that the equipment or service is exempt from CON approval, as determined MSDH through a determination of non-reviewability.

509.02 Certificate of Need Criteria and Standards for the Acquisition or Otherwise Control of Therapeutic Radiation Equipment and/or the Offering of Therapeutic Radiation Services (other than Stereotactic Radiosurgery)

MSDH will review CON applications for the acquisition or otherwise control of therapeutic radiation equipment and/or the offering of therapeutic radiation services under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for CON according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

The acquisition or otherwise control of therapeutic radiation equipment is reviewable if the equipment cost exceeds $1,500,000. The offering of therapeutic radiation services is reviewable if the proposed provider has not provided those services on a regular basis within the period of twelve (12) months prior to the time such services would be offered, regardless of the capital expenditure.

Need Criterion 1: Project Need
The applicant shall document a need for therapeutic radiation equipment/service by complying with any one of the following methodologies:

a. the need methodology as presented in this section of the *Plan*;

b. demonstrating that all existing machines in the service area in question have averaged 8,000 treatments per year or all machines have treated an average of 320 patients per year for the two most recent consecutive years; or

c. demonstrating that the applicant's existing therapeutic equipment has exceeded the expected level of patients service, i.e., 320 patients per year/unit, or 8,000 treatments per year/unit for the most recent 24-month period.

Need Criterion 2: Presence of Readily Available Services
The applicant must document that access to diagnostic X-ray, CT scan, and ultrasound services is readily available within fifteen (15) minutes normal driving time of the therapeutic radiation unit's location.

Need Criterion 3: Staffing Requirements
An applicant shall document the following:

a. The service will have, at a minimum, the following full-time dedicated staff:

   i. One board-certified radiation oncologist-in-chief

   ii. One dosimetrist

   iii. One certified radiation therapy technologist certified by the American Registry of Radiation Technologists

   iv. One registered nurse

b. The service will have, at a minimum, access to a radiation physicist certified or eligible for certification by the American Board of Radiology.

Note: One individual may act in several capacities. However, the application shall affirm that when a staff person acts in more than one capacity, that staff person shall meet, at a minimum, the requirements for each of the positions they fill.

Need Criterion 4: Access to Additional Staff
The applicant shall affirm that access will be available as needed to brachytherapy staff, treatment aides, social workers, dietitians, and physical therapists.

Need Criterion 5: Physician Location
Applicants shall document that all physicians who are responsible for therapeutic radiation services in a facility, including the radiation oncologist-in-chief, shall reside within sixty (60) minutes normal driving time of the facility.

Need Criterion 6: Access to a Modern Simulator
The application shall affirm that the applicant will have access to a modern simulator capable of precisely producing the geometric relationships of the treatment equipment to a patient. This simulator must produce high quality diagnostic radiographs. The applicant shall also affirm that the following conditions will be met as regarding the use of the simulator:

a. If the simulator is located at a site other than where the therapeutic radiation equipment is located, protocols will be established which will guarantee that the radiation oncologist who performs the patient's simulation will also be the same radiation oncologist who performs the treatments on the patient.

b. If the simulator uses fluoroscopy, protocols will be established to ensure that the personnel performing the fluoroscopy have received appropriate training in the required techniques related to simulation procedures.

Note: X-rays produced by diagnostic X-ray equipment and photon beams produced by megavoltage therapy units are unsuitable for precise imaging of anatomic structures within the treatment volume and do not adequately substitute for a simulator.

Need Criterion 7: Access to Computerized Treatment Planning System
The application shall affirm that the applicant will have access to a computerized treatment planning system with the capability of simulation of multiple external beams, display isodose distributions in more than one plane, and perform dose calculations for brachytherapy implants.

Note: It is highly desirable that the system have the capability of performing CT based treatment planning.

Need Criterion 8: Supervision of Treatment
The applicant shall affirm that all treatments will be under the control of a board certified or board eligible radiation oncologist.

Need Criterion 9: MSDH Division of Radiological Health Approval
The applicant shall affirm that the proposed site, plans, and equipment shall receive approval from the MSDH Division of Radiological Health before service begins.

Need Criterion 10: Quality Assurance Program
The application shall affirm that the applicant will establish a quality assurance program for the service, as follows:

a. The therapeutic radiation program shall meet, at a minimum, the physical aspects of quality assurance guidelines established by the American College of Radiology (ACR) within 12 months of initiation of the service.

b. The service shall establish a quality assurance program which meets, at a minimum, the standards established by the American College of Radiology.

Need Criterion 11: Failure to Comply
The applicant shall affirm understanding and agreement that failure to comply with Need Criterion#10 (a) and (b) may result in revocation of the CON (after due process) and subsequent termination of authority to provide therapeutic radiation services.

509.02.01 Therapeutic Radiation Equipment/Service Need Methodology

1. Treatment/Patient Load: A realistic treatment/patient load for a therapeutic radiation unit is 8,000 treatments or 320 patients per year.

2. Incidence of Cancer: The American Cancer Society (ACS) estimates that Mississippi will experience 8,130 new cancer cases in 2018. Based on a population of 3,138,145 (year 2023) as estimated by the State Data Center of Mississippi (University of Mississippi Center for Population Studies) is 2.59 cases per 1,000 population.

3. Patients to Receive Treatment: The number of cancer patients expected to receive therapeutic radiation treatment is set at forty-five percent (45%).

4. Population to Equipment Ratio: Using the above stated data, a population of 100,000 will generate 259 new cancer cases each year. Assuming that forty-five percent (45%) will receive radiation therapy, a population of 274,560 will generate approximately 320 patients

who will require radiation therapy. Therefore, a population of 274,560 will generate a need for one therapeutic radiation unit.

509.02.02 Therapeutic Radiation Equipment Need Determination Formula

1. Project annual number of cancer patients:

   General Hospital Service Area Population X $\frac{\text{2.59 cases*}}{\text{1,000 population}}$ = New Cancer Cases

   *Mississippi cancer incidence rate

2. Project the annual number of radiation therapy patients:

   New Cancer Cases X 45% = Patients Who Will Likely Require Radiation Therapy

3. Estimate number of treatments to be performed annually:

   Radiation Therapy Patients X 25 Treatments per Patient (Avg.) = Estimated Number of Treatments

4. Project number of megavoltage radiation therapy units needed:

   $\frac{\text{Est. \# of Treatments}}{\text{8,000 Treatments per Unit}}$ = Projected Number of Units Needed

5. Determine unmet need (if any):

   Projected Number of Units Needed — Number of Existing Units = Number of Units Required (Excess)

509.03 Policy Statement Regarding Certificate of Need Applications for the Acquisition or Otherwise Control of Stereotactic Radiosurgery Equipment, and/or the Offering of Stereotactic Radiosurgery

1. Service Areas: MSDH shall determine the need for stereotactic radiosurgery services and equipment by using the actual stereotactic radiosurgery provider’s service area.

2. Unit-to Population Ratio: The need for stereotactic radiosurgery units is determined to be the same as for radiotherapy, for 2023 a population of 3,138,145. The therapeutic radiation need determination formula is outlined in Section 509.02.02 above.

3. Accessibility: Nothing contained in these CON criteria and standards shall preclude the University Of Mississippi School Of Medicine from acquiring and operating stereotactic radiosurgery equipment, provided the acquisition and use of such equipment is justified by the School's teaching and/or research mission and complies with the teaching exception as outlined in Section 102.01 of this Plan. However, the requirements listed under the section regarding the granting of "appropriate scope of privileges for access to the stereotactic radiosurgery equipment to any qualified physician" must be met.

4. Expansion of Existing Services: MSDH may consider a CON application for the acquisition or otherwise control of an additional stereotactic radiosurgery unit by an existing provider of such services when the applicant's existing equipment has exceeded the expected level of patient service, i.e., 900 treatments per year for the two most recent consecutive years as reported on the facility's "Renewal of Hospital License and Annual Hospital Report."

5. Addition of Services: Facilities requesting approval to add stereotactic radiosurgery services should have an established neurosurgery program and must be able to demonstrate previous radiosurgery service experience.

6. Discharge Planning Policy: All stereotactic radiosurgery services should have written procedures and policies for discharge planning and follow-up care for the patient and family as part of the institution's overall discharge planning program.

7. Referral Policy: All stereotactic radiosurgery services should have established protocols for referring physicians to assure adequate post-operative diagnostic evaluation for radiosurgery patients.

8. Service Cost Comparison: The total cost of providing stereotactic radiosurgery services projected by prospective providers should be comparable to the cost of other similar services provided in the state.

9. Patient Cost Comparison: The usual and customary charge to the patient for stereotactic radiosurgery should be commensurate with cost.

509.04 Certificate of Need Criteria and Standards for the Acquisition or Otherwise Control of Stereotactic Radiosurgery Equipment and/or the Offering of Stereotactic Radiosurgery

MSDH will review CON applications for the acquisition or otherwise control of stereotactic radiosurgery equipment and/or the offering of stereotactic radiosurgery services under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manua*l; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

The acquisition or otherwise control of stereotactic radiosurgery equipment is reviewable if the equipment cost exceeds $1,500,000. The offering of stereotactic radiosurgery services is reviewable if the proposed provider has not provided those services on a regular basis within the period of twelve (12) months prior to the time such services would be offered, regardless of the capital expenditure.

Need Criterion 1: Minimum Procedures
The applicant shall document a need for stereotactic radiosurgery equipment/service by reasonably projecting that the proposed new service will perform at least 900 stereotactic radiosurgery treatments in the third year of operation. No additional new stereotactic

radiosurgery services should be approved unless the number of stereotactic radiosurgery treatments performed with existing units in the state average 900 treatments or more per year.

Need Criterion 2: Staffing Requirements

a. The radiosurgery programs must be established under the medical direction of two co-directors, one with specialty training and board certification in neurosurgery and the other with specialty training and board certification in radiation oncology, with experience in all phases of stereotactic radiosurgery.

b. In addition to the medical co-directors, all stereotactic radiosurgery programs should have a radiation physicist who is certified in radiology, or who holds an advanced degree in physics with two to three years experience working under the direction of a radiation oncologist, and a registered nurse present for each stereotactic radiosurgery performed.

c. The applicant shall document that the governing body of the entity offering stereotactic radiosurgery services will grant an appropriate scope of privileges for access to the stereotactic radiosurgery equipment to any qualified physician who applies for privileges. For the purpose of this criterion, "Qualified Physician" means a doctor of medicine or osteopathic medicine licensed by the State of Mississippi who possesses training in stereotactic radiosurgery and other qualifications established by the governing body.

Need Criterion 3: **Equipment**

a. Facilities providing stereotactic radiosurgery services should have dosimetry and calibration equipment and a computer with the appropriate software for performing stereotactic radiosurgery.

b. The facility providing stereotactic radiosurgery services should also have access to magnetic resonance imaging, computed tomography, and angiography services.

510 Computed Tomographic (CT) Scanning

Should the capital expenditure for the acquisition of fixed or mobile CT scanning services, equipment, and related costs exceed $1.5 million, the CON proposal will be reviewed under the general review criteria outlined in the most recent Certificate of Need Review Manual adopted by the Mississippi State Department of Health and the following utilization standards:

- A proposed unit must be able to generate a minimum of 2,000 HECTs (See Table 5-6 for HECT conversion table) by the second year of operation.
- Providers desiring CT capability must be properly utilizing 20,000 general radiographic imaging procedures per year.

510.01 Magnetic Resonance Imaging (MRI)

Magnetic resonance imaging (MRI) is a diagnostic imaging technique that employs magnetic and radio-frequency fields to produce images of the body non-invasively. Magnetic resonance imaging is similar to CT scanning in that it produces cross-sectional and digital images without potentially harmful ionizing radiation, producing an image not distorted by bone mass. The equipment and its operational specifications continue to be refined.

Sixty-four (64) facilities (hospitals and free-standing) in Mississippi operated fixed or mobile based MRI units in FY 2016. These facilities performed a total of data to be inserted] MRI procedures during the year. Table 5-6 presents the location, type (fixed or mobile and number of units per facility), and utilization of MRI equipment throughout the state in fiscal years 2015 and 2016.

Table 5-6
Location and Number of MRI Procedures by General Hospital Service Area
FY 2015 and FY 2016

	Type of Providers	County	Type of Equipment	Number of MRI Procedures		Days/Hours of Operation
				2015	2016	2016
General Hospital Service Area 1				**13,436**	**13,416**	
Baptist Memorial Hospital - DeSoto	H	DeSoto	F(3)	8,022	7,502	M-Sun.72 Hrs.
Desoto Imaging Specialists	FS	DeSoto	F	3,366	3,060	M-F, 60 Hrs.
Methodist Healthcare Olive Branch Hospital	H	DeSoto	F	1,394	2,106	M-F, 40 Hrs.
Panola Medcial Center	H	Panola	M	654	748	M, Th, F 25 Hrs.
Superior MRI Services	MP	Panola	M	-	-	N/A
General Hospital Service Area 2				**29,868**	**31,182**	
Baptist Memorial Hospital - Booneville	H	Prentiss	F	817	725	M-F, 40 Hrs
Baptist Memorial Hospital - Union	H	Union	F M(4)	2,353	2,831	Mon-Sat., 168 Hrs.
Imaging Center of Gloster Creek Village ****	FS	Lee	F			M-F,40 Hrs.
Magnolia Regional Health Center	H	Alcorn	F(2)	6,727	6,311	M-F- 40 Hrs.
Medical Imaging at Barnes Crossing	FS	Lee	F	3,664	3,595	M-F, 40 Hrs.
Medical Imaging at Crossover Road	FS	Lee	F	2,249	2,614	M-F, 40 Hrs.
North Miss. Medical Center	H	Lee	F(4)	13,217	14,327	M-F, 240 Hrs.
Tishomingo Health Services, Inc.	H	Tishomingo	M	841	779	M-F, 40 Hrs.
General Hospital Service Area 3				**10,398**	**10,738**	
Allegiance Specialty House of Greenville	H	Washington	F	61	62	M-F. 40 Hrs.
Bolivar Medical Center	H	Bolivar	M	1,038	1,208	M-F, 40 Hrs.
Delta Regional Med. Center-Main Campus	H	Washington	F	2,548	2,497	M-F, 40 Hrs.
Greenwood Leflore Hospital	H	Leflore	F	3,366	3,479	M-F, 50+ Hrs.
North Sunflower Medical Center	H	Sunflower	F	706	645	Tu, Th. 8 Hrs.
Northwest Miss. Regional Medical Center	H	Coahoma	F	1,509	1,601	M-F, 40 Hrs.
South Sunflower County Hospital	H	Sunflower	M	441	369	W., 4 Hrs.
Superior- North Sunflower Medical Center [1]	MP	Sunflower	M	517	664	Tu, Th., 8 Hrs.
Tallahatchie General Hospital	H	Tallahatchie	M	212	213	M, 4 Hrs.
General Hospital Service Area 4				**21,758**	**22,586**	
Baptist Memorial Hospital - Golden Triangle	H	Lowndes	F(2)	2,845	2,942	M-Sun, 168 Hrs.
Baptist Memorial Hospital - North MS	H	Lafayette	FM	2,698	2,759	Mon.- Sun., 168 Hrs.
Baptist Memorial Hospital - Calhoun	H	Calhoun	M	192	255	M. & Thr., 10 Hrs.
Clay County Medical Corporation	H	Clay	M	DNS	548	DNS
Gilmore Memorial Hospital, Inc.	H	Monroe	M	996	974	M-F, 40 Hrs.
Imaging Center of Columbus	FS	Lowndes	F(2)	6,156	6,496	M-F, 50 Hrs.
Imaging Ctr. of Excellence Institute - MSU	FS	Oktibbeha	F	1,396	1,600	M-F, 45 Hrs.
Monroe Regional Hospital *	H	Monroe	M	303	268	M,T, F 12 Hrs.
North Miss. Medical Center - Eupora ***	H	Webster	M	637	574	M, Tu, & W 24 Hrs.
North Miss. Medical Center - West Point	H	Clay	M	560	548	M-F, 40 Hrs.
Oktibbeha County Hospital	H	Oktibbeha	F	2,616	2,620	M-F, 40 Hrs.
Trace Regional Hospital	H	Chickasaw	M	309	316	Tu., Th. 16 Hrs.
SMI- Tyler Holmes Memorial Hospital	H	Montgomery	M	237	235	W, 4 Hrs.
University of MS Medical Center - Grenada**	H	Grenada	F	2,586	2,406	M-F, 40 Hrs.
SMI- Yalobusha Hospital	H	Yalobusha	M	227	45	W, 4 Hrs.

F- Fixed unit
M-Mobile Unit
Type of Providers: H-Hospital, FS-Freestanding, and MP- Mobile Provider
Note: [1]Indicates Superior is the approved service provider.
[2] Indicates Scott Medical Imaging is the approved service provider.
*Pioneer Community Hospital changed its name to Monroe Regional Hospital.
**Grenada Lake Medical Center changed its name to University of MS Medical Center-Grenada.
***Webster Health Services changed its name to North MS Medical Center- Eupora.
**** Imaging Center of Gloster Creek Village did not start data collection until February 2017.

Table 5-6 (continued)
Location and Number of MRI Procedures by General Hospital Service Area
FY 2015 and FY 2016

Facility	Type of Providers	County	Type of Equipment	Number of MRI Procedures 2015	Number of MRI Procedures 2016	Days/Hours of Operation 2016
General Hospital Service Area 5				**81,775**	**91,524**	
Baptist Medical Center - Attala, Inc. *	H	Attala	F	-	-	M, F 30 Hrs.
Baptist Medical Center - Leake, Inc.	H	Leake	M	325	435	Tu., 4 Hrs.
Baptist Medical Center- Yazoo, Inc.	H	Yazoo	M	572	614	Tu., Th., 8 Hrs.
Central MS Diagnostics, LLC	FS	Rankin	F	1,044	1,042	M-F, 40 Hrs.
Copiah County Medical Center	H	Copiah	M	499	391	M,W,F 12 Hrs.
King's Daughters Medical Center	H	Yazoo	F	2,650	2,831	Tues. & Th., 8 Hrs
Kosciusko Medical Clinic	FS	Attala	F	2,447	2,359	M-F, 45 Hrs.
Madison Radiological Group, LLC	FS	Madison	F	2,038	2,328	M-F, 40 Hrs.
Magee General Hospital	H	Simpson	F	706	656	M-F, 40 Hrs.
Merit Health Central	H	Hinds	F(2)	3,609	2,182	M-Sun, 90+ Hrs.
SMI- Merit Health Madison [2]	H	Madison	F	220	304	M, W 8 Hrs.
Merit Health Rankin	H	Rankin	F	610	762	M-F 40 Hrs.
Merit Health River Oaks	H	Rankin	F	2,912	3,610	M-F, 50 Hrs.
Merit Health River Region	H	Warren	F	2,466	2,526	M-F, 40 Hrs.
Miss. Baptist Medical Center	H	Hinds	F(2)	7,402	8,289	M-Sat., M-F, 104 Hrs.
Miss. Diagnostic Imaging Center	FS	Rankin	F	2,233	2,237	M-F, 40 Hrs.
Mission Primary Care Clinic	FS	Warren	M	665	521	M- Th. 40 Hrs.
Miss. Sports Medicine & Orthopedic	FS	Hinds	F(2)	6,218	6,218	M-F, 90 Hrs.
Open MRI of Jackson	FS	Rankin	F	DNS	DNS	DNS
SE Lackey Memorial Hospital	H	Scott	M	526	526	M, W, & Th, 24 Hrs.
Sharkey/Issaquena Community Hospital	H	Sharkey	M	170	159	W., 4 hrs.
Southern Diagnostic Imaging	FS	Rankin	F	4,863	5,781	M-F, 80 Hrs.
SMI-Hardy Wilson Memorial Hospital [2]	H	Copiah	M	469	361	M, Th.,& Fri. 12 Hrs.
SMI- Holmes County Hospital & Clinics	H	Holmes	M	0	345	Thurs., 4 Hrs.
SMI- Leake Memorial Hospital	H	Leake	M	327	429	Tu. 4 Hrs.
SMI- Madison River Oaks Medical Center	H	Madison	M	208	289	Tu. Th., 8 Hrs
SMI-Ridgeland Diagnostic Center [2]	FS	Madison	M	739	627	M, W, & Th. 12 Hrs.
SMI- Scott County Hospital [2]	MP	Scott	M	18	145	F, 4 Hrs.
SMI-Simpson General Hospital [2]	MP	Simpson	M	28	114	Th., 4 Hrs.
St. Dominic's Jackson- Memorial Hospital	H	Hinds	F(3)/M(1)	16,421	22,807	M-Sun., 328 Hrs.
St. Dominic's Madison Medical Imaging	FS	Madison	F	2,143	2,430	M-F, 40 Hrs.
University of MS Medical Center	H	Hinds	F(6)	19,247	20,206	M-F 504 Hrs.
General Hospital Service Area 6				**13,614**	**14,183**	
Anderson Regional Medical Center **	H	Lauderdale	F(3)	4,705	4,393	M-F, 40 Hrs.
Anderson Regional Medical Center-South Campus	FS	Lauderdale	F(2)	33	26	
H. C. Watkins Memorial Hospital	H	Clarke	M	0	141	Thr., 8 Hrs.
Imaging Center of Meridian, LLC	FS	Lauderdale	M	2,698	2,825	M-F, 45 Hrs.
John C Stennis Memorial Hospital	H	Kemper	M	79	63	M-F, 45 Hrs.
Laird Hospital	H	Newton	M	449	431	M,W, & F, 20 Hrs.
Neshoba County General Hospital	H	Neshoba	F(4) M	1,342	1,507	M-F., 40Hrs.
Rush Foundation Hospital	FS	Lauderdale	F(2)	3,812	4,452	M-F, 130 Hrs.
SMI-- Newton Regional Hospital [2]	MP	Newton	M	176	29	M, 4 Hrs.
SMI-Wayne General Hospital[2]	MP	Wayne	M	320	316	M, 4 hrs.

F- Fixed unit
M-Mobile Unit
Type of Providers: H-Hospital, FS-Freestanding, and MP- Mobile Provider
Note: [1]Indicates Superior is the approved service provider.
[2] Indicates Scott Medical Imaging is the approved service provider.
*Baptist Medical Center- Attala shares an MRI with Kosciusko Medical Clinic
**Anderson Regional Medical Center South Campus uses Anderson Regional Medical Center's MRI

Table 5-6 (continued)
Location and Number of MRI Procedures by General Hospital Service Area
FY 2015 and FY 2016

Facility	Type of Providers	County	Type of Equipment	Number of MRI Procedures		Days/Hours of Operation
				2015	2016	2016
General Hospital Service Area 7				**7,265**	**8,521**	
King's Daughters Medical Center	H	Lincoln	F	2,650	2,831	M-F, 48 Hrs.
Merit Health Natchez	MP	Adams	F(2)	1,930	2,509	M-F, 50 Hrs.
SMI-Lawrence County Hospital [2]	MP	Lawrence	M	5	114	W, 4 Hrs.
SMI - Walthall County Hospital [2]	MP	Walthall	M	158	162	W, 4 Hrs.
Southwest MS Regional Medical Center	H	Pike	F	2,522	2,905	M-F, 40 Hrs.
General Hospital Service Area 8				**31,516**	**32,759**	
Forrest General Hospital	H	Forrest	F(2)	5,514	6,061	M-Sun., 168 Hrs.
Hattiesburg Clinic, P.A.	FS	Forrest	F(4)	11,123	11,888	M-F 40 Hrs. & Sat. 38 Hrs.
Jefferson Davis Comm. Hospital	MP	Jeff Davis	M	121	105	Th., 4 Hrs.
Merit Health Wesley	H	Lamar	F	2,426	2,325	M-F, 50 Hrs.
Open Air MRI of Laurel	FS	Jones	F	3,818	3,507	M-F, 40+ Hrs.
SMI- Marion General Hospital [2]	MP	Marion	M	275	280	Tu., 4 Hrs.
South Central Regional Medical Center	H	Jones	F	2,229	2,229	M-F, 50 Hrs.
Southern Bone & Joint Specialist, PA	FS	Forrest	F(2)	6,010	6,364	M-Sat., 140 Hrs.
General Hospital Service Area 9				**29,142**	**31,290**	
Cedar Lake MRI-Open MRI LLC	FS	Harrison	F	4,565	5,170	M-Sat, 78 Hrs.
Compass Imaging, LLC	FS	Harrison	M	534	633	M. & F, 16 Hrs.
Garden Park Medical Center	H	Harrison	F	1,225	1,815	M-F, 40 Hrs.
George County Hospital	H	George	F	773	749	M-F, 40 Hrs.
Hancock Medical Center	H	Hancock	F	913	1,075	M-F, 40 Hrs.
Highland Community Hospital*	H	Pearl River	M	1,513	1,657	M-Fri, 45 Hrs.
Memorial Hospital at Gulfport	H	Harrison	F(2)	7,994	8,908	M-Sun, 154 Hrs.
Merit Health Biloxi	H	Harrison	FM	1,937	1,876	M-F, 40 Hrs.
Ocean Springs Hospital	H	Jackson	F (2)	4,296	4,135	M-F, 115+ Hrs.
OMRI, Inc. dba Open MRI	MP	Jackson	M(3)	N/A	N/A	M, Thr. 120 & F 160 Hrs.
Singing River Hospital	H	Jackson	F(2) M	5,136	5,016	M-F, 155+ Hrs.
SMI- Stone County Hospital	H	Stone	M	256	256	Tues., 4 Hrs.
State Total				**238,772**	**256,199**	

F- Fixed unit
M-Mobile Unit
Type of Providers: H-Hospital, FS-Freestanding, and MP- Mobile Provider
Note: [2] Indicates Scott Medical Imaging is the approved service provider.

Sources: Applications for Renewal of Hospital License for Calendar Years 2015; Fiscal Year 2016; FY 2017 MRI Utilization Survey

511 Invasive Digital Angiography (DA)

Invasive Digital Angiography (DA) is a diagnostic and catheter based therapeutic intravascular intervention imaging procedure that combines a digital processing unit with equipment similar to that used for standard fluoroscopic procedures.

Most invasive DA studies are appropriate as an outpatient procedure in a freestanding facility, where proper protocols have been met.

512 Positron Emission Tomography (PET)

Positron emission tomography (PET) is a minimally invasive imaging procedure in which positron-emitting radionuclides, produced either by a cyclotron or by a radio-pharmaceutical producing generator, and a gamma camera are used to create pictures of organ function rather than structure. PET scans provide physicians a crucial assessment of the ability of specific tissues to function normally.

PET can provide unique clinical information in an economically viable manner, resulting in a diagnostic accuracy that affects patient management. PET scans provide diagnostic and prognostic patient information regarding cognitive disorders; for example, identifying the differences between Alzheimer's, Parkinson's, dementia, depression, cerebral disorders, and mild memory loss. PET scans also provide information regarding psychiatric disease, brain tumors, epilepsy, cardiovascular disease, movement disorders, and ataxia. Research shows that clinical PET may obviate the need for other imaging procedures.

PET installations generally take one of two forms: a scanner using only generator-produced tracers (basic PET unit) or a scanner with a cyclotron (enhanced PET unit). The rubidium-82 is the only generator approved by the FDA to produce radiopharmaceuticals. Rubidium limits PET services to cardiac perfusion imaging.

A PET scanner supported by a cyclotron can provide the capabilities for imaging a broader range of PET services, such as oncology, neurology, and cardiology. Manufacturers of PET equipment are providing more user-friendly cyclotrons, radiopharmaceutical delivery systems, and scanners which have drastically reduced personnel and maintenance requirements. These changes have made the cost of PET studies comparable to those of other high-technology studies.

Cardiology Associates of North Mississippi located in Tupelo, Mississippi (Lee County) has a fixed PET unit and performs Cardiac/PET procedures (pet scans/imaging of the heart). For FY 2013, Cardiology Associates of North Mississippi performed 1,596 procedures.

Table 5-7 presents the location, type (fixed or mobile), and utilization of PET equipment throughout the state in 2016.

Table 5-7
Location and Number of PET Procedures by Service Area
FY 2016

Facility	County	Type of Equipment	Number of PET Procedures
General Hospital Service Area 1			**416**
Baptist Memorial Hospital - DeSoto	DeSoto	M	416
General Hospital Service Area 2			**1,241**
Magnolia Regional Health Center	Alcorn	M	344
North Mississippi Medical Center	Lee	F	897
General Hospital Service Area 3			**605**
Alliance Cancer Center- Clarksdale	Coahoma	M	DNS
Delta Regional Medical Center (Main Campus)	Washington	M	428
Greenwood Leflore Hospital	Leflore	M	177
General Hospital Service Area 4			**1,374**
Baptist Memorial Hospital - Golden Triangle	Lowndes	F	654
Baptist Memorial Hospital - North Miss	Lafayette	F	576
University of MS Medical Center- Grenada	Grenada	M	144
General Hospital Service Area 5			**5,552**
Merit Health Central	Hinds	F	166
Mississippi Baptist Medical Center	Hinds	F (2)	1,264
St. Dominic Jackson- Memorial Hospital	Hinds	F	1,731
University of MS Medical Center	HInds	F	2,391
Baptist Medical Center-- Attala *	Atttala	M	-
General Hospital Service Area 6			**306**
Anderson Regional Medical Center	Lauderdale	M	306
General Hospital Service Area 7			**645**
Merit Health Natchez	Adams	M	271
Southwest MS Regional Medical Center	Pike	M	374
General Hospital Service Area 8			**3,965**
Forrest General Hospital	Forrest	M	8
Hattiesburg Clinic, P.A.[1]	Forrest	F (2)	3,257
South Central Regional Medical Center	Jones	M	606
Merit Health Wesley	Lamar	M	94
General Hospital Service Area 9			**1,927**
Merit Health Biloxi	Harrison	M	130
Garden Park Medical Center	Harrison	M	75
Memorial Hospital at Gulfport	Harrison	F	1,001
Ocean Springs Hospital	Jackson	M	345
Singing River Hospital	Jackson	M	376
State Total			**16,031**

Note: [1] Indicates freestanding clinics.
*Baptist Medical Center- Attala is CON approved for a mobile PET but did not utilize the service in 2016.

Sources: Applications for Renewal of Hospital License for Calendar Years 2015; Fiscal Year 2016 Annual Hospital Report; FY 2017 PET Utilization Survey

512.01 Certificate of Need Criteria and Standards for Magnetic Resonance Imaging Services (MRI)

Note: Should MSDH receive a CON application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until MSDH has developed and adopted CON criteria and standards. If MSDH has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of MSDH.

512.01.01 Policy Statement Regarding Certificate of Need Applications for the Acquisition or Otherwise Control of Magnetic Resonance Imaging (MRI) Equipment and/or the Offering of MRI Services

1. CON Review Requirements: The CON process regarding the acquisition or otherwise control of MRI equipment and/or the offering of MRI services involves separate requirements for CON review: (a) an entity proposing to acquire or otherwise control MRI equipment must obtain a CON to do so if the capital expenditure for the MRI unit and related equipment exceeds $1,500,000; and (b) an entity proposing to offer MRI services which has not provided the service on a regular basis within the last twelve (12) months must obtain a CON before providing such services, regardless of the capital expenditure.

2. CON Approval Preference: MSDH shall give preference to those applicants proposing to enter into joint ventures utilizing mobile and/or shared equipment. However, the applicant must meet the applicable CON criteria and standards provided herein and the general criteria and standards contained in the currently approved *Mississippi Certificate of Need Review Manual*.

3. Mobile MRI: For purposes of this Plan, a mobile MRI unit is defined as an MRI unit operating at two or more host sites and that has a central service coordinator. The mobile MRI unit shall operate under a contractual agreement for the provision of MRI services at each host site on a regularly scheduled basis.

4. Conversion to Fixed: The conversion from mobile MRI service to fixed MRI service is considered the establishment of a new MRI service and requires CON review.

5. Utilization of Existing Units: No new MRI services shall be approved unless all existing MRI service in the applicant's defined service area performed an average of 1,700 MRI procedures per existing and approved MRI scanner during the most recent twelve (12) month reporting period and the proposed new services would not reduce the utilization of existing providers in the service area.

6. Population-Based Formula: MSDH shall use a population-based formula as presented at the end of this chapter when calculating MRI need. Also, the formula will use historical and projected use rates by service area and patient origin data. The population-based formula is based on the most recent population projections prepared by the State Data Center (University of Mississippi Center for Population Studies). The applicant shall project a reasonable population base to justify the provision of 2,700 procedures (or 1,700 procedures for rural hospitals) by the second year of operation.

7. Mobile Service Volume Proration: The required minimum service volumes for the establishment of services and the addition of capacity for mobile services shall be prorated on a "site by site" basis based on the amount of time the mobile services will be operational at each site.

8. Addition of a Health Care Facility: An equipment vendor who proposes to add a health care facility to an existing or proposed route must notify MSDH through the filing of a Determination of Non Reviewability of any proposed changes, i.e., additional health care facilities or route deviations, from those presented in the Certificate of Need application prior to such change.

512.01.02 Certificate of Need Criteria and Standards for the Acquisition or Otherwise Control of Magnetic Resonance Imaging (MRI) Equipment and/or the Offering of MRI Services

MSDH will review applications for a CON for the acquisition or otherwise control of MRI equipment and/or the offering of MRI services under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans MSDH; and the specific criteria and standards listed below.

The acquisition or otherwise control of MRI equipment is reviewable if the equipment cost is in excess of $1,500,000; if the equipment and/or service is relocated; and if the proposed provider of MRI services has not provided such services on a regular basis within the period of twelve (12) months prior to the time such services would be offered, regardless of the capital expenditure.

512.01.03 Certificate of Need Criteria and Standards for the Acquisition or Otherwise Control of MRI Equipment

Need Criterion 1: Minimum Procedures/Population

The entity desiring to acquire or otherwise control the MRI equipment shall demonstrate a minimum of 2,700 procedures per year by the end of the second year of operation; provided, however, that MRI equipment exclusively servicing rural hospitals (those located outside U.S. Census Bureau Metropolitan Statistical Areas with 75 or less beds) shall be required to demonstrate a minimum of 1,700 procedures per year by the end of the second year of operation. This criterion includes both fixed and mobile MRI equipment. The applicant must show the methodology used for the projections.

a. Applicants for non-hospital based MRI facilities may submit affidavits from referring physicians. MRI procedures projected in affidavits shall be based on actual MRI procedures referred during the year.

b. The applicant shall document a reasonable population base to document that a minimum of 2,700 procedures will be performed per proposed MRI unit (or 1,700 procedures per year for a mobile MRI route exclusively serving rural hospitals).

c. The applicant shall demonstrate that all existing units within its defined service area have performed an average of 1,700 procedures for the most recent 12-month period.

It is recognized that an applicant desiring to acquire or otherwise control an MRI unit may make or propose to make the MRI unit available to more than one provider of MRI services, some of which may be located outside of Mississippi. In such cases all existing or proposed users of the MRI unit must jointly meet the required service volume of 2,700 (or 1,700 for mobile MRI route exclusively serving rural hospitals) procedures annually. If the MRI unit in question is presently utilized by other providers of MRI services, the actual number of procedures performed by them during the most recent twelve (12) month period and/or documented projections of physician referrals may be used.

Need Criterion 2: Equipment Requirements
In order to receive CON approval to acquire or otherwise control MRI equipment, the applicant shall provide a copy of the proposed contract and document the following:

a. that the equipment is FDA approved;

b. that only qualified personnel will be allowed to operate the equipment; and

c. that if the equipment is to be rented, leased, or otherwise used by other qualified providers on a contractual basis, no fixed/minimum volume contracts will be permitted.

Need Criterion 3: Data Requirements
Applicants shall provide written assurance that they will record and maintain, at a minimum, the following information and make it available to MSDH:

a. All facilities which have access to the equipment;

b. Utilization by each facility served by the equipment, e.g., days of operation, number of procedures, and number of repeat procedures;

c. Financial data, e.g., copy of contracts, fee schedule, and cost per scan; and

d. Demographic and patient origin data for each facility.

In addition, if required by the Department, the above referenced information and other data pertaining to the use of MRI equipment will be made available to the MSDH within fifteen (15) business days of request. The required information may also be requested for entities outside of Mississippi that use the MRI equipment in question.

Need Criterion 4: Business Registration
The entity desiring to acquire or otherwise control the MRI equipment must be a registered entity authorized to do business in Mississippi.

Need Criterion 5: CON Approval/Exemption for MRI Equipment
Before the specified equipment can be utilized, the applicant desiring to provide the MRI equipment shall have CON approval or written evidence that the equipment is exempt from CON approval, as determined by MSDH through a determination of reviewability. Each specified piece of equipment must be exempt from or have CON approval.

512.01.04 Certificate of Need Criteria and Standards for the Offering of Fixed or Mobile MRI Services

An entity proposing to offer MRI services shall obtain Certificate of Need (CON) approval before offering such services.

Need Criterion 1: Minimum Procedures/Population
The entity desiring to offer MRI services must document that the equipment shall perform a minimum of 2,700 procedures (or 1,700 procedures for rural hospitals) by the end of the second year of operation. This criterion includes both fixed and mobile MRI equipment. The applicant must show methodology used for the projections.

a. Applicants for non-hospital based MRI facilities may submit affidavits from referring physicians. MRI procedures projected in affidavits shall be based on actual MRI procedures referred during the year.

b. The applicant shall document a reasonable population within its service area to justify 2,700 procedures per year per proposed MRI unit (1,700 procedures per year per proposed mobile MRI unit on a route exclusively serving rural hospitals).

c. The applicant shall demonstrate that all existing units within its defined service area have performed an average of 1,700 procedures for the most recent 12-month period.

It is recognized that a particular MRI unit may be utilized by more than one provider of MRI services, some of which may be located outside of Mississippi. In such cases all existing or proposed providers of MRI services must jointly meet the required service volume of 2,700 (or 1,700 for mobile MRI route exclusively serving rural hospitals) procedures annually by the end of the second year of operation. If the MRI unit in question is presently utilized by other providers of MRI services, the actual number of procedures performed by them during the most recent 12-month period and/or documented projection of physician referrals may be used instead of the formula projections.

Need Criterion 2: Availability of Diagnostic Imaging Modalities
An applicant desiring to offer MRI services must document that a full range of diagnostic imaging modalities for verification and complementary studies will be available at the time MRI services begin. These modalities shall include, but not be limited to, computed tomography (full body), ultrasound, angiography, nuclear medicine, and conventional radiology.

Need Criterion 3: Non-Discrimination
All applicants proposing to offer MRI services shall give written assurance that, within the scope of its available services, neither the facility where the service is provided nor its participating medical personnel shall have policies nor procedures which would exclude patients because of race, color, age, sex, ethnicity, or ability to pay.

Need Criterion 4: Staffing Requirements
The applicant must document that the following staff will be available:

a. Director - A full-time, board eligible radiologist or nuclear medicine imaging physician, or other board eligible licensed physician whose primary responsibility during the prior three years has been in the acquisition and interpretation of clinical images. The Director shall have knowledge of MRI through training, experience, or documented post-graduate education. The Director shall document a minimum of one week of full-time training with a functional MRI facility.

b. One full-time MRI technologist radiographer or a person who has had equivalent education, training, and experience, who shall be on-site at all times during operating hours. This individual must be experienced in computed tomography or other cross sectional imaging methods, or must have equivalent training in MRI spectroscopy.

Need Criterion 5: Experimental Procedures
The applicant shall document that when an MRI unit is to be used for experimental procedures with formal/approved protocols, a full-time medical physicist or MRI scientist (see definition in Glossary) with at least one year of experience in diagnostic imaging shall be available in the facility.

Need Criterion 6: Data Requirements
The applicant shall provide assurances that the following data regarding its use of the MRI equipment will be kept and made available to MSDH upon request:

a. Total number of procedures performed

b. Number of inpatient procedures

c. Number of outpatient procedures

d. Average MRI scanning time per procedure

e. Average cost per procedure

f. Average charge per procedure

g. Demographic/patient origin data

h. Days of operation

In addition to the above data recording requirements, the facility should maintain the source of payment for procedures and the total amounts charged during the fiscal year when it is within the scope of the recording system.

Need Criterion 7: CON Approval/Exemption for MRI Equipment
Before the service can be provided, the CON applicant desiring to offer MRI services shall provide written evidence that the specified MRI equipment provider has received CON approval or is exempt from CON approval as determined by through a determination of non-reviewability. Each specified piece of equipment must be exempt from or have CON approval.

512.01.05 Population-Based Formula for Projection of MRI Service Volume

$X * Y \div 1{,}000 = V$

Where, X = Applicant's Defined Service area population

Y = Mississippi MRI Use Rate*

V = Expected Volume

* Use Rate shall be based on information in the State Health Plan

513 Certificate of Need Criteria and Standards for Diagnostic and Therapeutic Imaging Services

Note: Should MSDH receive a CON application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until MSDH has developed and adopted CON criteria and standards. If MSDH has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of MSDH.

513.01 Digital Angiography Equipment and Services

513.01.01 Policy Statement Regarding Certificate of Need Applications for the Acquisition or Control of Digital Angiography Equipment and/or the Offering of Invasive Digital Angiography Services

1. Digital Angiography Equipment and Services in Ambulatory Surgery Centers: Applicants proposing the acquisition or otherwise control of Digital Angiography equipment and/or the offering of invasive digital angiography services in a single specialty ambulatory surgery center must apply for a certificate of need before providing such services.

513.01.02 Certificate of Need Criteria and Standards for Invasive Digital Angiography in a Hospital

MSDH will review applications for a CON for the acquisition or otherwise control of Digital Angiography (DA) equipment and associated costs under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the Mississippi Certificate of Need Review Manual; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

CON review is required when the capital expenditure for the purchase of Digital Angiography equipment and associated costs exceed $1,500,000, or when the equipment is to be used for invasive procedures, i.e., the use of catheters. The offering of diagnostic and therapeutic intravascular intervention imaging services of an invasive nature, i.e. invasive digital angiography, is reviewable if those services have not been provided on a regular basis by the proposed provider of such services within the period of twelve (12) months prior to the time such services would be offered regardless of the capital expenditure.

Need Criterion 1: **Staffing Requirements**

The applicant for invasive DA services shall demonstrate that proper protocols for screening and medical specialty backup are in place before services are rendered by personnel other than those with specialized training.

For example, if a radiologist without specialized training in handling cardiac arrhythmia is to perform a procedure involving the heart, a cardiologist/cardiosurgeon must be available for backup.

The protocols shall include, but are not limited to, having prior arrangements for backup from:

a. a cardiologist/cardiosurgeon for procedures involving the heart;

b. a neurologist/neurosurgeon for procedures involving the brain; and

c. a vascular surgeon, cardiologist, radiologist or nephrologist credentialed and accredited for interventional peripheral vascular procedures.

Need Criterion 2: **CON Exemption**

Before utilizing or providing the equipment or service, the applicant desiring to provide the digital angiography equipment or invasive DA services shall have CON approval or written evidence that the equipment or service is exempt from CON approval as determined by MSDH through a determination of reviewability.

513.01.03 Certificate of Need Criteria and Standards for Invasive Digital Angiography (DA) in a Freestanding Facility

Need Criterion 1: Staffing Requirements

a. The applicant for invasive DA services shall demonstrate that proper protocols for screening and medical specialty backup are in place before services are rendered by personnel other than those with specialized training. The protocols shall include, but are not limited to, having prior arrangements for consultation/backup from a vascular surgeon, cardiologist, radiologist or nephrologist credentialed and accredited for interventional peripheral vascular procedures.

b. Identify physicians in the group and state which physicians(s) will perform intravascular interventions using DA. Certify that:

   i. Each physician will maintain medical staff privileges at a full service hospital; or

   ii. At least one member of the physician group has staff privileges at a full service hospital and will be available at the facility or on call within a 30-minute travel time of the full service hospital during the hours of operation of the facility.

Need Criterion 2: Types of Procedures

a. Procedures in a freestanding facility are generally non-emergent nor life threatening in nature and require a patient stay of less than 24 consecutive hours. The procedures shall not be of a type that:

   i. Generally result in blood loss of more than ten percent of estimated blood volume in a patient with a normal hemoglobin;

   ii. Require major or prolonged intracranial, intrathoracic, abdominal, or major joint replacement procedures, except for laparoscopic procedures; or

   iii. Involve major blood vessels.

      1. Major blood vessels are defined as the group of critical arteries and veins including the aorta, coronary arteries, pulmonary arteries, superior and inferior vena cava, pulmonary veins, carotid arteries, and any intra-cerebral artery or vein.

b. Percutaneous endovascular interventions of the peripheral vessels not excluded in a.iii.1. above are permitted to be performed in a freestanding facility. These procedures are defined as procedures performed without open direct visualization of the target vessel, requiring only needle puncture of an artery or vein followed by insertion of catheters, wires, or similar devices which are then advanced through the blood vessels using imaging guidance. Once the catheter reaches the intended location, various maneuvers to address the diseased area may be performed which include, but are not limited to, injection of contrast for imaging, ultrasound of the vessel, treatment of vessels with angioplasty, artherectomy, covered or uncovered stenting, intentional occlusion of vessels or organs (embolization), and delivering of medications, radiation, or other energy such as laser, radiofrequency, or cryo.

Need Criterion 3: Transfer Agreement

The applicant must certify that the proposed facility will have a formal transfer agreement with a full service hospital to provide services which are required beyond the scope of the freestanding facility's programs.

Need Criterion 4: CON Exemption

Before utilizing or providing the equipment or service, the applicant desiring to provide the digital angiography equipment or invasive DA services shall have CON approval or written evidence that the equipment or service is exempt from CON approval as determined by MSDH through a determination of reviewability.

513.02 Positron Emission Tomography (PET) Equipment and Services

513.02.01 Policy Statement Regarding Certificate of Need Applications for the Acquisition or Otherwise Control of a Positron Emission Tomography (PET) Scanner and Related Equipment including Cardiac only PET Scanner

1. CON Review Requirements: Applicants proposing the acquisition or otherwise control of a PET scanner shall obtain a CON to do so if the capital expenditure for the scanner and related equipment exceeds $1,500,000.

2. Indigent/Charity Care: An applicant shall be required to provide a "reasonable amount" of indigent/charity care as described in Chapter 1 of this Plan.

3. Service Areas: The state as a whole shall serve as a single service area in determining the need for a PET scanner. In the case of Cardiac only PET Scanner, the service area will be the General Hospital Service Areas.

4. Equipment to Population Ratio: The need for a PET scanner is estimated to be one scanner per 300,000 population. MSDH will consider out-of-state population in determining need only when the applicant submits adequate documentation acceptable to MSDH, such as valid patient origin studies. In the case of Cardiac only PET Scanner, this policy will not apply.

5. Access to Supplies: Applicants must have direct access to appropriate radio-pharmaceuticals.

6. Services and Medical Specialties Required: The proposed PET units must function as a component of a comprehensive inpatient or outpatient diagnostic service. The proposed PET unit must have the following modalities (and capabilities) on-site or through contractual arrangements:

   a. Computed tomography – (whole body)

   b. Magnetic resonance imaging – (brain and whole body)

   c. Nuclear medicine – (cardiac, SPECT)

   d. Conventional radiography

   e. The following medical specialties during operations hours:

      i. Cardiology

      ii. Neurology

      iii. Neurosurgery

      iv. Oncology

      v. Psychiatry

      vi. Radiology

7. Hours of Operation: PET facilities should have adequate scheduled hours to avoid an excessive backlog of cases.

8. CON Approval Preference: MSDH may approve applicants proposing to enter ventures utilizing mobile and/or shared equipment.

9. CON Requirements: The criteria and standards contained herein pertain to both fixed and/or mobile PET scanner equipment.

10. CON Exemption: Nothing contained in these CON criteria and standards shall preclude the University of Mississippi School of Medicine from acquiring and operating a PET scanner and a Cardiac only PET Scanner, provided the acquisition and use of such equipment is justified by the School's teaching and/or research mission and complies with the teaching exception as outlined in section 102.02 of this Plan. However, the requirements listed under the section regarding the granting of "appropriate scope of privileges for access to the scanner to any qualified physician" must be met. MSDH shall not consider utilization of equipment/services at any hospital owned and operated by the state or its agencies when reviewing CON applications.

11. Addition to a Health Care Facility: An equipment vendor who proposes to add a health care facility to an existing or proposed route must notify MSDH by submitting a determination

of reviewability for any proposed changes from those presented in the CON application prior to such change, i.e., additional health care facilities or route deviations.

12. Equipment Registration: The applicant must provide the Department with the registration/serial number of the CON-approved PET scanner.

13. Certification: If a mobile PET scanner, the applicant must certify that only the single authorized piece of equipment and related equipment vendor described in the CON application will be utilized for the PET service by the authorized facility/facilities.

14. Conversion from mobile to fixed service: The conversion from mobile PET service site to a fixed PET service site is considered the establishment of a new service and requires CON review.

513.02.02 Certificate of Need Criteria and Standards for the Acquisition or Otherwise Control of a Positron Emission Tomography (PET) Scanner and Related Equipment including Cardiac only PET Scanner

MSDH will review applications for a Certificate of Need for the acquisition or otherwise control of a PET scanner and related equipment under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the general review criteria listed in the Mississippi Certificate of Need Review Manual; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

The acquisition or otherwise control of a PET scanner and related equipment is reviewable if the equipment cost is in excess of $1,500,000, or if the equipment is relocated. The offering of PET services is reviewable if the proposed provider has not provided those services on a regular basis within the period of twelve (12) months prior to the time such services would be offered, regardless of the capital expenditure.

Need Criterion 1: **Minimum Procedures/Population**

a. The entity desiring to acquire or to otherwise control the PET scanner must project a minimum of 1,000 clinical procedures per year and must show the methodology used for the projection.

b. The applicant shall document a minimum population of 300,000 per PET scanner unit. The Division of Health Planning and Resource Development population projections shall be used. In the case of Cardiac only PET Scanner, this Criterion will not apply.

Need Criterion 2: **Business Registration**

The entity desiring to acquire or otherwise control the PET equipment must be a registered entity authorized to do business in Mississippi.

Need Criterion 3: **Approval of Additional PET Equipment**
MSDH will approve additional PET equipment in a service area with existing equipment only when it is demonstrated that the existing PET equipment in that service area is performing an average of 1,500 clinical procedures per PET unit per year (six clinical procedures per day x 250 working days per year). For purposes of this Criterion, PET and Cardiac only PET are to be evaluated separately.

Need Criterion 4: **Division of Radiological Health Approval**
The application shall affirm that the applicant shall receive approval from the Division of Radiological Health for the proposed site, plans, and equipment before service begins.

Need Criterion 5: **Data Requirements**
The applicant shall provide assurances that the following data regarding the PET equipment will be kept and made available to MSDH upon request:

a. Total number of procedures performed;

b. Total number of inpatient procedures (indicate type of procedure);

c. Total number of outpatient procedures (indicate type of procedure);

d. Average charge per specific procedure;

e. Hours of operation of the PET unit;

f. Days of operation per year; and

g. Total revenue and expense for the PET unit for the year.

Need Criterion 6: **Fixed/Minimum Value Contracts**
The applicant shall provide a copy of the proposed contract and document that if the equipment is to be rented, leased, or otherwise used by other qualified providers on a contractual basis, no fixed/minimum volume contracts will be permitted.

Need Criterion 7: **CON Approval/Exemption for PET Equipment**
Before the specified equipment can be utilized, the applicant desiring to provide the PET equipment shall have CON approval or written evidence that the equipment is exempt from CON approval as determined by MSDH. Each specified piece of equipment must be exempt from or have CON approval.

513.02.03 Certificate of Need Criteria and Standards for Offering of Fixed or Mobile Positron Emission Tomography (PET) Services including Cardiac only PET Scanner

The offering of fixed or mobile PET services is reviewable if the proposed provider has not provided those services on a regular basis within the period of twelve (12) months prior to the time such services would be offered.

Need Criterion 1: **Minimum Procedures**
The entity desiring to offer PET services must document that the equipment shall perform a minimum of 1,000 clinical procedures per year and must show the methodology used for the projection.

Need Criterion 2: **PET Equipment Utilized by Multiple Providers**
It is recognized that a particular PET unit may be utilized by more than one provider of PET services, some of which may be located outside of Mississippi. In such cases all existing or proposed providers of PET services utilizing the same PET unit must jointly meet the required service volume of 1,000 procedures annually. If the PET unit in question is presently utilized by other providers of PET services, the actual number of procedures performed by them during the most recent 12-month period may be used.

Need Criterion 3: **Quality Control and Environmental Requirements**
An applicant proposing to provide new or expanded PET services must include written assurances in the application that the service will be offered in a physical environment that conforms to federal standards, manufacturer's specifications, and licensing agencies' requirements. The following areas are to be addressed:

a. Quality control and assurance of radiopharmaceutical production of generator or cyclotron-produced agents;

b. Quality control and assurance of PET tomograph and associated instrumentation;

c. Radiation protection and shielding; and

d. Radioactive emissions to the environment.

Need Criterion 4: **Division of Radiological Health Approval**
The application shall affirm that the applicant shall receive approval from the Division of Radiological Health for the proposed site, plans, and equipment before service begins.

Need Criterion 5: **Provision of On-Site Medical Cyclotron**
The applicant shall document provision of an on-site medical cyclotron for radionuclide production and a chemistry unit for labeling radiopharmaceuticals; or an on-site rubidium-82 generator; or access to a supply of cyclotron-produced radiopharmaceuticals from an off-site

medical cyclotron and a radiopharmaceutical production facility within a two-hour air transport radius.

Need Criterion 6: **Staffing Requirements**

Applicants for PET shall document that the necessary qualified staff are available to operate the proposed unit. The applicant shall document the PET training and experience of the staff. The following minimum staff shall be available to the PET unit:

a. If operating a fixed PET unit, one or more nuclear medicine imaging physician(s) available to the PET unit on a full-time basis (e.g., radiologist, nuclear cardiologist) who have been licensed by the state for the handling of medical radionuclides and whose primary responsibility for at least a one-year period prior to submission of the CON application has been in acquisition and interpretation of tomographic images. This individual shall have knowledge of PET through training, experience, or documented postgraduate education. The individual shall also have training with a functional PET facility.

b. If operating a cyclotron on site, a qualified PET radiochemist or radiopharmacist personnel, available to the facility during PET service hours, with at least one year of training and experience in the synthesis of short-lived positron emitting radiopharmaceuticals. The individual(s) shall have experience in the testing of chemical, radiochemical, and radionuclidic purity of PET radiopharmaceutical syntheses.

c. Qualified engineering and physics personnel, available to the facility during PET service hours, with training and experience in the operation and maintenance of the PET equipment. Engineering personnel are not required on-site for mobile PET units.

d. Qualified radiation safety personnel, available to the facility at all times, with training and experience in the handling of short-lived positron emitting nuclides. If a medical cyclotron is operated on-site, personnel with expertise in radiopharmacy, radiochemistry, and medical physics would also be required.

e. Certified nuclear medicine technologists with expertise in computed tomographic nuclear medicine imaging procedures, at a staff level consistent with the proposed center's expected PET service volume.

f. Other appropriate personnel shall be available during PET service hours which may include certified nuclear medicine technologists, computer programmers, nurses, and radio-chemistry technicians.

Need Criterion 7: **Management of Medical Emergencies**
The applicant shall demonstrate how medical emergencies within the PET unit will be managed in conformity with accepted medical practice.

Need Criterion 8: **Accommodating Referred Patients**
The applicant shall affirm that, in addition to accepting patients from participating institutions, facilities performing clinical PET procedures shall accept appropriate referrals from other local providers. These patients shall be accommodated to the extent possible by extending the hours of service and by prioritizing patients according to standards of need and appropriateness rather than source of referral.

Need Criterion 9: **Medical Necessity**
The applicant shall affirm that protocols will be established to assure that all clinical PET procedures performed are medically necessary and cannot be performed as well by other, less expensive, established modalities.

Need Criterion 10: **Notification of Procedures Offered**
Applicants will be required to maintain current listings of appropriate PET procedures for use by referring physicians.

Need Criterion 11: **Data Requirements**
The applicant shall provide assurances that the following data regarding the PET service will be kept and made available to MSDH upon request:

a. Total number of procedures performed; total number of inpatient procedures (indicate type of procedure);

b. Total number of outpatient procedures (indicate type of procedure);

c. Average charge per specific procedure;

d. Hours of operation of the PET unit;

e. Days of operation per year; and

f. Total revenue and expense for the PET unit for the year.

Need Criterion 12: **CON Approval/Exemption for PET Equipment**
Before the specified service can be provided, the applicant desiring to offer the PET service shall provide written evidence that the specified PET equipment provider has CON approval or written evidence that the equipment is exempt from CON approval as determined by MSDH through a determination of reviewability. Each specified piece of equipment must be exempt from or have CON approval.

514 Cardiac Catheterization

Cardiac catheterization is an integral part of cardiac evaluation and brings together two disciplines: cardiac catheterization (the evaluation of cardiac function) and angiography (X-ray demonstration of cardiac anatomy). Cardiac catheterization includes various therapeutic interventions, including but not limited to: percutaneous coronary interventions (PCI), thrombolysis of coronary clots in evolving myocardial infarctions, electrical ablation of abnormal conduction pathways, and closure of patent ductus arteriosus in infants.

Any facility performing diagnostic cardiac catheterizations without open-heart surgery capability must maintain formal referral agreements with a nearby facility to provide emergency cardiac services, including open-heart surgery. Such a facility must also delineate the steps it will take to ensure that high-risk patients are not catheterized in the facility. Additionally, a facility without open-heart surgery capability must document that more complex procedures, except for percutaneous coronary interventions (PCI) as provided herein, are not performed in the facility. Such procedures include, but are not limited to: transseptal puncture, transthoracic left ventricular puncture, myocardial biopsy, trans catheter aortic valve replacement (TAVR), and left atrial occlusion devices.

Section 41-7-191(1)(d), Mississippi Code of 1972, as amended, requires Certificate of Need review for the establishment and/or offering of cardiac catheterization services if the proposed provider has not offered such services on a regular basis within 12 months prior to the time the services would be offered. Table 5-8 presents the utilization of cardiac catheterization services in Fiscal Years 2015 and 2016.

Table 5-8
Cardiac Catheterizations by Facility and Type
by Cardiac Catheterization/Open Heart Planning Area (CC/OHSPA)
FY 2015 and FY 2016

Facility	County	Total Adult Procedures		Total Pediatric Procedures		Total PTCA Procedures	
		2015	2016	2015	2016	2015	2016
CC/OHSPA 1		**2,092**	**2,497**	**0**	**0**	**872**	**1,154**
Baptist Memorial Hospital-DeSoto	DeSoto	2,060	2,226	0	0	870	767
Methodist Healthcare Olive Branch Hospital	DeSoto	32	271	0	0	2	387
CC/OHSPA 2		**6,545**	**6,464**	**0**	**0**	**464**	**386**
Magnolia Regional Health Center	Alcorn	3,285	2,949	0	0	99	73
North Mississippi Medical Center	Lee	3,260	3,515	0	0	365	313
North Mississippi State Hospital*	Lee	0	0	0	0	0	0
CC/OHSPA 3		**1,242**	**1,138**	**0**	**0**	**143**	**152**
Allegiance Specialty Hospital of Greenville	Washington	0	0	0	0	0	0
Delta Regional Medical Center	Washington	752	780	0	0	143	152
Greenwood Leflore Hospital*	LeFlore	95	75	0	0	0	0
Northwest Mississippi Medical Center*	Coahoma	395	283	0	0	0	0
CC/OHSPA 4		**2,394**	**2,634**	0	0	**749**	**748**
Baptist Memorial Hospital-Golden Triangle	Lowndes	1,118	1,225	0	0	311	359
Baptist Memorial Hospital-N. Mississippi	Lafayette	1,167	1,266	0	0	438	389
UMMC Grenada*	Grenada	109	143	0	0	0	0
CC/OHSPA 5		**24,302**	**20,046**	**1,573**	**1,895**	**2,937**	**3,446**
Merit Health Central	Hinds	668	668	0	0	149	149
Merit Health River Oaks*	Rankin	0	0	0	0	125	125
Mississippi Baptist Medical Center	Hinds	4,275	4,449	0	0	1,259	1,367
Merit Health River Region	Warren	2,023	808	0	0	273	0
Promise Hospital of Vicksburg	Warren	0	0	0	0	0	0
Select Specialty Hospital- Belhaven, LLC	Hinds	0	0	0	0	0	0
Select Specialty Hospital - Jackson	Hinds	0	0	0	0	0	0
St. Dominic-Jackson Memorial Hospital	Hinds	10,052	11,596	0	0	911	782
University of MS Medical Center	Hinds	7,284	2,525	1,573	1895	220	1,023
CC/OHSPA 6		**932**	**845**	**0**	**0**	**10**	**8**
Anderson Regional Medical Center	Lauderdale	0	0	0	0	0	0
Anderson Regional Medical Center -South*	Lauderdale	0	0	0	0	0	0
Rush Foundation Hospital	Lauderdale	932	845	0	0	10	8
CC/OHSPA 7		**949**	**811**	0	0	**34**	**22**
Merit Health Natchez*	Adams	0	0	0	0	0	0
SW Miss Regional Medical Center	Pike	949	811	0	0	34	22
CC/OHSPA 8		**3,968**	**5,177**	**0**	**0**	**1,363**	**1,689**
Forrest General Hospital	Forrest	2,716	3,413	0	0	1,058	1226
Regency Hospital of Hattiesburg*	Forrest	0	0	0	0	0	0
South Central Regional Medical Center*	Jones	0	564	0	0	0	0
Merit Health Wesley	Lamar	1,252	1,200	0	0	305	463
CC/OHSPA 9		**5,092**	**4,878**	**0**	**0**	**2,621**	**2,382**
Merit Health Biloxi*	Harrison	50	15	0	0	0	0
Memorial Hospital at Gulfport	Harrison	2,679	2,744	0	0	1,112	1,074
Ocean Springs Hospital	Jackson	1,382	1,250	0	0	940	816
Select Specialty Hospital-Gulf Coast	Harrison	0	0	0	0	0	0
Singing River Hospital	Jackson	981	869	0	0	569	492
State Total		**47,581**	**44,490**	**1,573**	**1,895**	**9,193**	**9,987**

* Diagnostic Cauterizations Only

Source: Applications for Renewal of Hospital License for Calendar Year 2015/2016; FY 2016/2017 Annual Hospital Report

515 Certificate of Need Criteria and Standards for Cardiac Catheterization Services and Open-Heart Surgery Services

Note: Should the Mississippi State Department of Health receive a Certificate of Need application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until the Department of Health has developed and adopted CON criteria and standards. If the Department has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manua*l and all adopted rules, procedures, and plans of the Mississippi State Department of Health.

515.01 Joint Policy Statement Regarding Certificate of Need Applications for the Acquisition or Otherwise Control of Cardiac Catheterization Equipment and/or the Offering of Cardiac Catheterization Services and/or the Acquisition of Open-Heart Surgery Equipment and/or the Offering of Open-Heart Surgery Services

Heart disease remains the leading cause of death in Mississippi. However, it should be noted that the State has seen a decrease in mortality rates in the last few years. From 2004 to 2013, the mortality rate for African American women decreased by 25% per 100,000 and the total mortality rate decreased by 19.6% per 100,000. Studies show that minorities have a higher cardiovascular death rate than whites and are less likely to receive cardiac catheterization and open-heart surgery services than are whites. The disproportionate impact on minorities' health status in general is recognized elsewhere in this State Health Plan.

Innovative approaches to address these problems in the cardiac area are needed. It has been shown that statistical methods, such as population base and optimum capacity at existing providers, are not accurate indicators of the needs of the underserved, nor do they address the accessibility of existing programs to the underserved. The goal of these revisions to the State Health Plan is to improve access to cardiac care and to encourage the establishment of additional cardiac catheterization and open-heart surgery programs within the state that can serve the poor, minorities, and the rural population in greater numbers.

MSDH also adopted a provision that it shall not consider utilization of equipment/services at any hospital owned and/or operated by the state or its agencies when reviewing CON applications. MSDH further adopted standards requiring an applicant to report information regarding catheterization and open-heart programs so as to monitor the provision of care to the medically underserved and the quality of that care.

MSDH shall interpret and implement all standards in this Plan in recognition of the stated findings and so as to achieve the stated goal.

515.02 Policy Statement Regarding Certificate of Need Applications for the Acquisition or Otherwise Control of Cardiac Catheterization Equipment and/or the Offering of Cardiac Catheterization Services

1. Cardiac Catheterization Services: For purposes of the following CON criteria and standards the term "cardiac catheterization services" or "catheterization services" shall include three levels of cardiac catheterization services an applicant may provide: diagnostic cardiac catheterization services, percutaneous coronary intervention (PCI) in a hospital without on-site cardiac surgery, or therapeutic cardiac catheterization services.

   a. Diagnostic cardiac catheterization services are defined as, and refer to, cardiac catheterization services which are performed for the purpose of diagnosing, identifying, or evaluating cardiac related illness or disease. Diagnostic cardiac catheterization services include, but are not limited to, left heart catheterizations, right heart catheterizations, left ventricular angiography, coronary procedures, and other cardiac catheterization services of a diagnostic nature.

   b. Percutaneous coronary intervention (PCI) services in a hospital without on-site cardiac surgery are defined as, and refer to, those therapeutic cardiac catheterization services involving primary and elective PCIs but not involving transseptal puncture, transthoracic left ventricular puncture, myocardial biopsy, and any other procedure that is currently defined as a structural heart disease procedure.

   c. Therapeutic cardiac catheterization services are defined as, and refer to, cardiac catheterization services which are performed for the purpose of actively treating, as opposed to merely diagnosing, cardiac-related illness or disease. Therapeutic cardiac catheterization services include, but are not limited to,-all PCIs (including primary and elective), transseptal puncture, transthoracic left ventricular puncture, myocardial biopsy, and any procedure that is currently defined as a structural heart disease procedure.

2. Open-Heart Surgery Capability: MSDH shall not approve CON applications for the establishment of therapeutic cardiac catheterization services at any facility that does not have open-heart surgery capability; i.e., new therapeutic cardiac catheterization services may not be established and existing therapeutic cardiac catheterization services may not be extended without approved and operational open-heart surgery services in place. This policy does not preclude approval of a Certificate of Need application proposing the concurrent establishment of both therapeutic cardiac catheterization and open-heart surgery services. This policy also does not preclude approval of a Certificate of Need application to perform percutaneous coronary intervention (PCI) services in a hospital without on-site cardiac surgery.

3. Service Areas: The State has nine designated Cardiac Catheterization/Open-Heart Surgery Planning Areas (CC/OHSPAs) presented in the Open Heart Surgery section of this chapter of the Plan. Map 5-2 shows the CC/OHSPAs.

4. Pediatric Cardiac Catheterization: Because the number of pediatric patients requiring study is relatively small, the provision of cardiac catheterization for neonates, infants, and young children shall be restricted to those facilities currently providing the service. National standards indicate that a minimum of 150 cardiac catheterization cases should be done per

year and that catheterization of infants should not be performed in facilities which do not have active pediatric cardiac-surgical programs.

5. Present Utilization of Cardiac Catheterization Equipment/Services: MSDH shall consider utilization of existing equipment/services and the presence of valid CONs for equipment/services within a given CC/OHSPA when reviewing CON applications. MSDH shall not consider utilization of equipment/services at any hospital owned and/or operated by the state or its agencies when reviewing CON applications. MSDH may collect and consider any additional information it deems essential, including information regarding access to care, to render a decision regarding any application.

6. Minimum Caseload: Applicants for a diagnostic cardiac catheterization Certificate of Need must be able to project a caseload of at least 300 diagnostic catheterizations per year per year by the end of the third year of operation. Applicants for a therapeutic cardiac catheterization Certificate of Need must be able to project a caseload of at least 450 catheterizations, diagnostic and therapeutic, per year by the end of the third year of operation. Applicant for a Certificate of Need to provide PCI services in a hospital without on-site cardiac surgery must be able to project a caseload of at least 300 catheterizations, diagnostic and PCI, with at least 100 being PCIs, per year by the end of the third year of operation.

7. Residence of Medical Staff: Cardiac catheterizations must be under the control of and performed by personnel living and working within the specific hospital area. No site shall be approved for the provision of services by traveling teams.

8. Hospital-Based: All cardiac catheterizations and open-heart surgery services shall be located in acute care hospitals. MSDH shall not approve Certificate of Need applications proposing the establishment of cardiac catheterization/open-heart surgery services in freestanding facilities or in freestanding ambulatory surgery facilities.

9. Conversion of Existing Therapeutic Cardiac Catheterization Services to PCI Services in a Hospital without On-Site Cardiac Surgery Capabilities: A hospital currently providing therapeutic cardiac catheterization services may convert their cardiac catheterization program to provide PCI services in the hospital without on-site cardiac surgery capability without certificate of need review; provided, however, that the facility shall submit an application for determination of non-reviewability prior to eliminating on-site cardiac surgery. The hospital must attest in the application for determination of non-reviewability that it will meet the CON criteria and standards as set out in Rule 515.04 of this *Plan*. If, at any time, the hospital goes 12 consecutive months of providing PCI services without on-site cardiac surgery, the hospital wants to convert back to a therapeutic cardiac catheterization program, the hospital must submit a certificate of need application for review.

515.03 Certificate of Need Criteria and Standards for the Acquisition or Otherwise Control of Diagnostic Cardiac Catheterization Equipment and/or the Offering of Diagnostic Cardiac Catheterization Services

The Mississippi State Department of Health will review applications for a Certificate of Need for the acquisition or otherwise control of diagnostic cardiac catheterization equipment and/or the offering of diagnostic cardiac catheterization services under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review

applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures and plans of the Mississippi State Department of Health; and the specific criteria and standards listed below.

The acquisition or otherwise control of diagnostic cardiac catheterization equipment is reviewable if the equipment costs exceed $1,500,000. The offering of diagnostic cardiac catheterization services is reviewable if the proposed provider has not provided those services on a regular basis within the period of twelve (12) months prior to the time such services would be offered, regardless of the capital expenditure.

Need Criterion 1: **Minimum Procedures**
An applicant proposing the establishment of diagnostic cardiac catheterization services only shall demonstrate that the proposed equipment/service utilization will be a minimum of 300 diagnostic cardiac catheterizations per year by its third year of operation.

Need Criterion 2: Staffing Standards
The applicant shall document that it has, or can obtain, the ability to administer the proposed services, provide sufficiently trained and experienced professional staff, and evaluate the performance of the programs.

Need Criterion 3: Recording and Maintenance of Data
Applicants shall provide, as required under licensure standards, written assurance that they will record and maintain utilization data for diagnostic cardiac catheterization procedures (e.g., morbidity data, number of diagnostic cardiac catheterization procedures performed, and mortality data, all reported by race, sex, and payor status) and make such data available to the Mississippi State Department of Health annually.

Need Criterion 4: Referral Agreement
An applicant proposing the establishment of diagnostic cardiac catheterization services only shall document that a formal referral agreement with a facility for the provision of emergency cardiac services (including open-heart surgery) will be in place and operational at the time of the inception of cardiac catheterization services.

Need Criterion 5: Patient Selection
An applicant proposing to provide diagnostic cardiac catheterization services must (a) delineate the steps which will be taken to insure that high risk patients are not catheterized in the facility, and (b) certify that therapeutic cardiac catheterization services and/or PCI services in a hospital without on-site cardiac surgery will not be performed in the facility unless and until the applicant has received CON approval to provide said services.

Need Criterion 6: Regulatory Approval
Before utilizing or providing the equipment or service, the applicant desiring to provide the diagnostic cardiac catheterization equipment or service shall have CON approval or written evidence that the equipment or service is exempt from CON approval as determined by the

Mississippi State Department of Health. Each specified piece of equipment must be exempt from or have CON approval.

515.04 Certificate of Need Criteria and Standards for the Acquisition or Otherwise Control of Therapeutic Cardiac Catheterization Equipment for the Performance of PCI Services in a Hospital Without On-Site Cardiac Surgery and/or the Offering Of PCI Services in a Hospital Without In-Site Cardiac Surgery

The Mississippi State Department of Health will review applications for a Certificate of Need for the acquisition or otherwise control of therapeutic cardiac catheterization equipment for the performance or offering of PCI services in a hospital without on-site cardiac surgery under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures and plans of the Mississippi State Department of Health; and the specific criteria and standards listed below.

The acquisition or otherwise control of therapeutic cardiac catheterization equipment for the performance of PCI services in a hospital without on-site cardiac surgery is reviewable if the equipment costs exceed $1,500,000. The offering of PCI services in a hospital without on-site cardiac surgery is reviewable if the proposed provider has not provided those services on a regular basis within the period of twelve (12) months prior to the time such services would be offered, regardless of the capital expenditure.

Need Criterion 1: Minimum Procedures
An applicant proposing the establishment of PCI services in a hospital without on-site cardiac surgery shall demonstrate that the proposed equipment/service utilization will be a minimum of 300 cardiac catheterizations, both diagnostic and PCI, with at least 100 being total PCIs, per year by its third year of operation. Applicants must certify they will submit volume data to demonstrate and verify the utilization of the service at a minimum of every three (3) years.

Need Criterion 2: Staffing Requirements
The applicant shall document that it has, or can obtain, the ability to administer the proposed services, provide sufficiently trained and experienced professional staff, and evaluate the performance of the programs.

Need Criterion 3: Staff Residency
The applicant shall certify that medical staff performing PCI procedures shall be onsite within thirty (30) minutes.

Need Criterion 4: Recording and Maintenance of Data
In addition to the certification in Need Criterion 1, applicants shall provide, as required under licensure standards, written assurance that they will record and maintain separate utilization data for diagnostic and PCI catheterization procedures (e.g., morbidity data, number of diagnostic cardiac catheterization and PCI procedures performed and mortality data, all reported by race, sex and payor status) and make that data available to the Mississippi State Department of Health annually.

Need Criterion 5: Open-Heart Surgery
An applicant proposing the establishment of PCI services without on-site cardiac surgery shall:

a. Document that open-heart surgery services will be available through a formal emergency transfer agreement to a hospital providing open heart surgery. Such transfer must be done at a minimum of less than 120 minutes to accomplish transfer from the onset of PCI complications to cardiopulmonary bypass. Transporting of the patient to the receiving hospital must include the capability to provide an intra-aortic balloon pump (IABP).

b. Programs must project and annually perform a minimum of 100 total PCIs per year to include at a minimum 12 primary PCIs per year by the end of the third year of operation. New programs should have three years to reach the absolute minimum volume, but after that, programs failing to reach this volume for two consecutive years should not remain open. MSDH has the discretion under a finding of rare or unique circumstances to grant an exception to the above based on a finding of need of access and quality of care by the program.

c. Certify that the proposed primary operators for the service have a life-time experience of greater than 150 total PCIs with acceptable outcomes as primary operator after completing a cardiology fellowship. Successful completion of an Interventional Cardiology fellowship is considered adequate certification.

d. New and Existing Programs must actively participate in the STEMI ("ST"-Segment Elevation Myocardial Infarction) Network, including, but not limited to, the submission of data to the STEMI databank.

e. At the present time, there is no justification for a PCI program without on-site surgery to perform only elective procedures or not provide availability to primary PCI 24 hours/365 days per year. The Mississippi State Department of Health has the discretion under a finding of rare or unique circumstances to grant exception to the above based on a finding of need of access and quality of care by the program.

f. Certify that the Applicant will provide educational programs to underserved patient populations (low income, racial and ethnic minorities, women, Medicaid eligible, and handicapped persons) with the goal of decreasing cardiac mortality rates in such populations.

g. Certify that the applicant will provide a reasonable amount of charity care.

h. Certify that the applicant will hold monthly multi-disciplinary meetings to evaluate patient outcomes, review quality improvement data, and to identify and implement solutions for any operational issues.

i. Certify that the following guideline from the Society of Cardiovascular Angiography and Interventions (SCAI)-ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention or such sections' update(s), if applicable, at the time of filing the certificate of need application will be met:

    (i) Certify the applicant will have available in the catheterization lab the equipment in Section 4.1.1 entitled "Equipment" and that such will be routinely tested;

(ii) Certify the availability of adequate staff in the catheterization lab as set forth in Section 4.1.2 entitled "Staffing" and that such staff will be certified on both basic life support and advanced cardiovascular life support;

(iii) Certify that "time-out" procedures will be implemented as discussed in Section 4.1.3 entitled "'Time-Out' Procedures"; and

(iv) Certify that the applicant will operate a quality improvement program and participate in a national PCI registry as discussed in Section 7.1 entitled "Quality Performance: Recommendations"

Need Criterion 6: Applicants for PCI Services in a Hospital without On-Site Cardiac Surgery Capabilities Currently Providing Diagnostic Catheterization Services
In addition to Need Criteria 1-5, an applicant proposing the establishment of PCI services in a hospital without open heart surgery capabilities, who is already an existing provider of diagnostic catheterization services, shall demonstrate that its diagnostic cardiac catheterization unit has been utilized for a minimum of 300 procedures per year for the two most recent years as reflected in the data supplied to and/or verified by the Mississippi State Department of Health or that its primary operators for the service have a life-time experience of greater than 250 total procedures (including both diagnostic catheterizations and PCIs) with acceptable outcomes after completing a cardiology fellowship. Successful completion of an Interventional Cardiology fellowship is considered adequate certification.

Need Criterion 7: Regulatory Approval
Before utilizing or providing the equipment or service, the applicant desiring to provide the cardiac catheterization equipment or service shall have CON approval or written evidence that the equipment or service is exempt from CON approval as determined by the Mississippi State Department of Health. Each specified piece of equipment must be exempt from or have CON approval.

515.05 Certificate of Need Criteria and Standards for the Acquisition or Otherwise Control of Therapeutic Cardiac Catheterization Equipment and/or the Offering Of Therapeutic Cardiac Catheterization Services

The Mississippi State Department of Health will review applications for a Certificate of Need for the acquisition or otherwise control of therapeutic cardiac catheterization equipment and/or the offering of therapeutic cardiac catheterization services under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures and plans of the Mississippi State Department of Health; and the specific criteria and standards listed below.

The acquisition or otherwise control of therapeutic cardiac catheterization equipment is reviewable if the equipment costs exceed $1,500,000. The offering of therapeutic cardiac catheterization services is reviewable if the proposed provider has not provided those services on a regular basis within the period of twelve (12) months prior to the time such services would be offered.

Need Criterion 1: Minimum Procedures:

An applicant proposing the establishment of therapeutic cardiac catheterization services shall demonstrate that the proposed equipment/service utilization will be a minimum of 450 cardiac catheterizations, both diagnostic and therapeutic, of which at least 100 should be PCIs, per year by its third year of operation.

Need Criterion 2: Staffing Standards
The applicant shall document that it has, or can obtain, the ability to administer the proposed services, provide sufficiently trained and experienced professional staff, and evaluate the performance of the programs.

Need Criterion 3: Staff Residency
The applicant shall certify that medical staff performing therapeutic cardiac catheterization procedures shall be onsite within thirty (30) minutes.

Need Criterion 4: Recording and Maintenance of Data
Applicants shall provide, as required under licensure standards, written assurance that they will record and maintain separate utilization data for diagnostic and therapeutic cardiac catheterization procedures (e.g., morbidity data, number of diagnostic and therapeutic cardiac catheterization procedures performed and mortality data, all reported by race, sex and payor status) and make that data available to the Mississippi State Department of Health annually.

Need Criterion 5: Open-Heart Surgery
An applicant proposing the establishment of therapeutic cardiac catheterization services shall document that open-heart surgery services are available or will be available on-site where the proposed therapeutic cardiac catheterization services are to be offered before such procedures are performed.

Need Criterion 6: Regulatory Approval
Before utilizing or providing the equipment or service, the applicant desiring to provide the cardiac catheterization equipment or service shall have CON approval or written evidence that the equipment or service is exempt from CON approval as determined by the Mississippi State Department of Health. Each specified piece of equipment must be exempt from or have CON approval.

Need Criterion 7: Applicants for Therapeutic Cardiac Catheterization Currently Providing Diagnostic Catheterization Services or PCI Services in a Hospital without On-Site Cardiac Surgery
In additional to Need Criteria 1-6, an applicant proposing the establishment of therapeutic cardiac catheterization services, who is already an existing provider of diagnostic catheterization services and/or PCI services in a hospital without on-site cardiac surgery, shall demonstrate that it has provided a minimum of 300 procedures (including both diagnostic catheterizations and PCIs) per year for the two most recent years as reflected in the data supplied to and/or verified by the Mississippi State Department of Health.

516 Open-Heart Surgery

Open-heart surgery, defined as any surgical procedure in which a heart-lung machine is used to maintain cardiopulmonary functioning, involves a number of procedures, including valve replacement, repair of cardiac defects, coronary bypass, heart transplantation, and artificial heart implant.

Section 41-7-191(1)(d), Mississippi Code of 1972, as amended, requires Certificate of Need review for the establishment and/or offering of open-heart surgery services if the proposed provider has not offered such services on a regular basis within twelve (12) months prior to the time the services would be offered.

Table 5-9 presents the utilization of existing facilities. Map 5-2 in the Open Heart Surgery criteria and standards section shows the Cardiac Catheterization/Open-Heart Surgery Planning Areas (CC/OHSPAs) and the location of existing services.

Table 5-9
Number of Open-Heart Surgeries by Facility and Type
By Cardiac Catheterization/Open Heart Surgery Planning Area (CC/OHSPA)
FY 2015 and FY 2016

Facility	County	Number of Adult Open-Heart Procedures		Number of Pediatric Open-Heart Procedures	
		2015	2016	2015	2016
CC/OHSPA 1		**247**	**262**	**1**	**1**
Baptist Memorial Hospital - DeSoto	DeSoto	246	261	0	0
Methodist Healthcare Olive Branch Hospital	DeSoto	1	1	1	1
CC/OHSPA 2		**789**	**848**	**0**	**4**
Magnolia Regional Medical Center	Alcorn	162	141	0	0
North MS Medical Center	Lee	627	707	0	4
CC/OHSPA 3		**4**	**4**	**4**	**4**
Delta Regional Medical Center-Main Campus	Washington	4	4	4	4
CC/OHSPA 4		**51**	**43**	**4**	**4**
Baptist Memorial Hospital-Golden Triangle	Lowndes	50	42	0	0
Baptist Memorial Hospital-North Mississippi	Lafayette	1	1	4	4
CC/OHSPA 5		**670**	**653**	**237**	**371**
Merit Health Central	Hinds	65	46	0	0
MS Baptist Medical Center	Hinds	1	1	4	4
Merit Health River Region	Warren	65	50	4	4
Promise Hospital of Vicksburg	Warren	3	3	4	4
Select Specialty Hospital- Belhaven, LLC	Hinds	2	0	4	0
Select Specialty Hospital- Jackson	Hinds	0	0	0	0
St. Dominic Hospital	Hinds	311	338	0	0
University of MS Medical Center	Hinds	223	215	221	359
CC/OHSPA 6		**145**	**195**	**4**	**4**
Anderson Regional Medical Center	Lauderdale	102	142	4	4
Rush Foundation Hospital	Lauderdale	43	53	0	0
The Specialty Hospital of Meridian	Lauderdale	0	0	0	0
CC/OHSPA 7		**1**	**1**	**4**	**4**
Southwest MS Regional Med. Center	Pike	1	1	4	4
CC/OHSPA 8		**530**	**467**	**0**	**0**
Forrest General Hospital	Forrest	530	467	0	0
Merit Health Wesley	Lamar	0	0	0	0
CC/OHSPA 9		**375**	**358**	**0**	**4**
Memorial Hospital at Gulfport	Harrison	186	169	0	4
Ocean Springs Hospital	Jackson	151	151	0	0
Select Specialty Hospital - Gulf Coast	Harrison	0	0	0	0
Singing River Hospital	Jackson	38	38	0	0
State Total		**2,812**	**2,831**	**254**	**392**

Source: Applications for Renewal of Hospital License for Calendar Year 2015/2016; FY 2016/2017 Annual Hospital Report

516.01 Policy Statement Regarding Certificate of Need Applications for the Acquisition of Open-Heart Surgery Equipment and/or the Offering of Open-Heart Surgery Services

1. Service Areas: The need for open-heart surgery equipment/services shall be determined using the nine designated Cardiac Catheterization/Open-Heart Surgery Planning Areas (CC/OHSPAs) presented in this chapter of the Plan. Map 5-2 shows the CC/OHSPAs.

2. CC/OHSPA Need Determination: The need for open-heart surgery equipment/services within a given CC/OHSPA shall be determined independently of all other CC/OHSPAs.

3. Pediatric Open-Heart Surgery: Because the number of pediatric patients requiring open-heart surgery is relatively small, the provision of open-heart surgery for neonates, infants, and young children shall be restricted to those facilities currently providing the service.

4. Present Utilization of Open-Heart Surgery Equipment/Services: MSDH shall consider utilization of existing open-heart surgery equipment/ services and the presence of valid CONs for open-heart surgery equipment/services within a given CC/OHSPA when reviewing CON applications. MSDH shall not consider utilization of equipment/services at any hospital owned and/or operated by the state or its agencies when reviewing CON applications. MSDH may collect and consider any additional information it deems essential, including information regarding access to care, to render a decision regarding any application.

5. CON Application Analysis: At its discretion, MSDH may use market share analysis and other methodologies in the analysis of a CON application for the acquisition or otherwise control of open-heart surgery equipment and/or the offering of open-heart surgery services. The Department shall not rely upon market share analysis or other statistical evaluations if they are found inadequate to address access to care concerns.

6. Minimum CC/OHSPA Population: A minimum population base of 100,000 in a CC/OHSPA (as projected by the Division of Health Planning and Resource Development) is required before such equipment/services may be considered. The total population within a given CC/OHSPA shall be used when determining the need for services. Population outside an applicant's CC/OHSPA will be considered in determining need only when the applicant submits adequate documentation acceptable to MSDH, such as valid patient origin studies.

7. Minimum Caseload: Applicants proposing to offer adult open-heart surgery services must be able to project a caseload of at least 150 open-heart surgeries per year.

8. Residence of Medical Staff: Open-heart surgery must be under the control of and performed by personnel living and working within the specific hospital area. No site shall be approved for the provision of services by traveling teams.

516.02 Certificate of Need Criteria and Standards for the Acquisition or Otherwise Control of Open-Heart Surgery Equipment and/or the Offering of Open-Heart Surgery Services

MSDH will review applications for a CON for the acquisition or otherwise control of open-heart surgery equipment and/or the offering of open-heart surgery services under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures and plans of MSDH; and the specific criteria and standards listed below.

The acquisition or otherwise control of open-heart surgery equipment is reviewable if the equipment cost in excess of $1,500,000. The offering of open-heart surgery services is reviewable if the proposed provider has not provided those services on a regular basis within twelve (12) months prior to the time such services would be offered, regardless of the capital expenditure.

Need Criterion 1: Minimum Population
The applicant shall document a minimum population base of 100,000 in the CC/OHSPA where the proposed open-heart surgery equipment/service is to be located. Division of Health Planning and Resource Development population projections shall be used.

Need Criterion 2: Minimum Procedures
The applicant shall demonstrate that it will perform a minimum of 150 open-heart surgeries per year by its third year of operation.

Need Criterion 3: Impact on Existing Providers~~:~~
An applicant proposing to acquire or otherwise control open-heart surgery equipment and/or offer open-heart surgery services shall document that each facility offering open-heart surgery services which is (a) in the CC/OHSPA and (b) within forty-five (45) miles of the applicant, has performed a minimum of 150 procedures per year for the two most recent years as reflected in data supplied to and/or verified by MSDH. No hospital owned and/or operated by the state or its agencies shall be considered an existing unit in the CC/OHSPA under this section. MSDH may collect and consider any additional information it deems essential, including information regarding access to care, to render a decision regarding any application.

Need Criterion 4: Staffing Requirements
The applicant shall document that it has, or can obtain, the ability to administer the proposed services, provide sufficiently trained and experienced professional staff, and evaluate the performance of the programs. MSDH staff shall use guidelines presented in Optimal Resources for Examination of the Heart and Lungs: Cardiac Catheterization and Radiographic Facilities, published under the auspices of the Inter-Society Commission for Heart Disease Resources, and Guidelines and Indications for Coronary Artery Bypass Graft Surgery: A Report of the American College of Cardiology/American Heart Association Task Force on Assessment of Diagnostic and Therapeutic Cardiovascular Procedures (Subcommittee on Coronary Artery Bypass Graft Surgery), published under the auspices of the American College of Cardiology, as resource materials when reviewing these items in an application.

Need Criterion 5: Staff Residency

The applicant shall certify that medical staff performing open-heart surgery procedures shall reside within forty-five (45) minutes normal driving time of the facility. The applicant shall document that proposed open-heart surgery procedures shall not be performed by traveling teams.

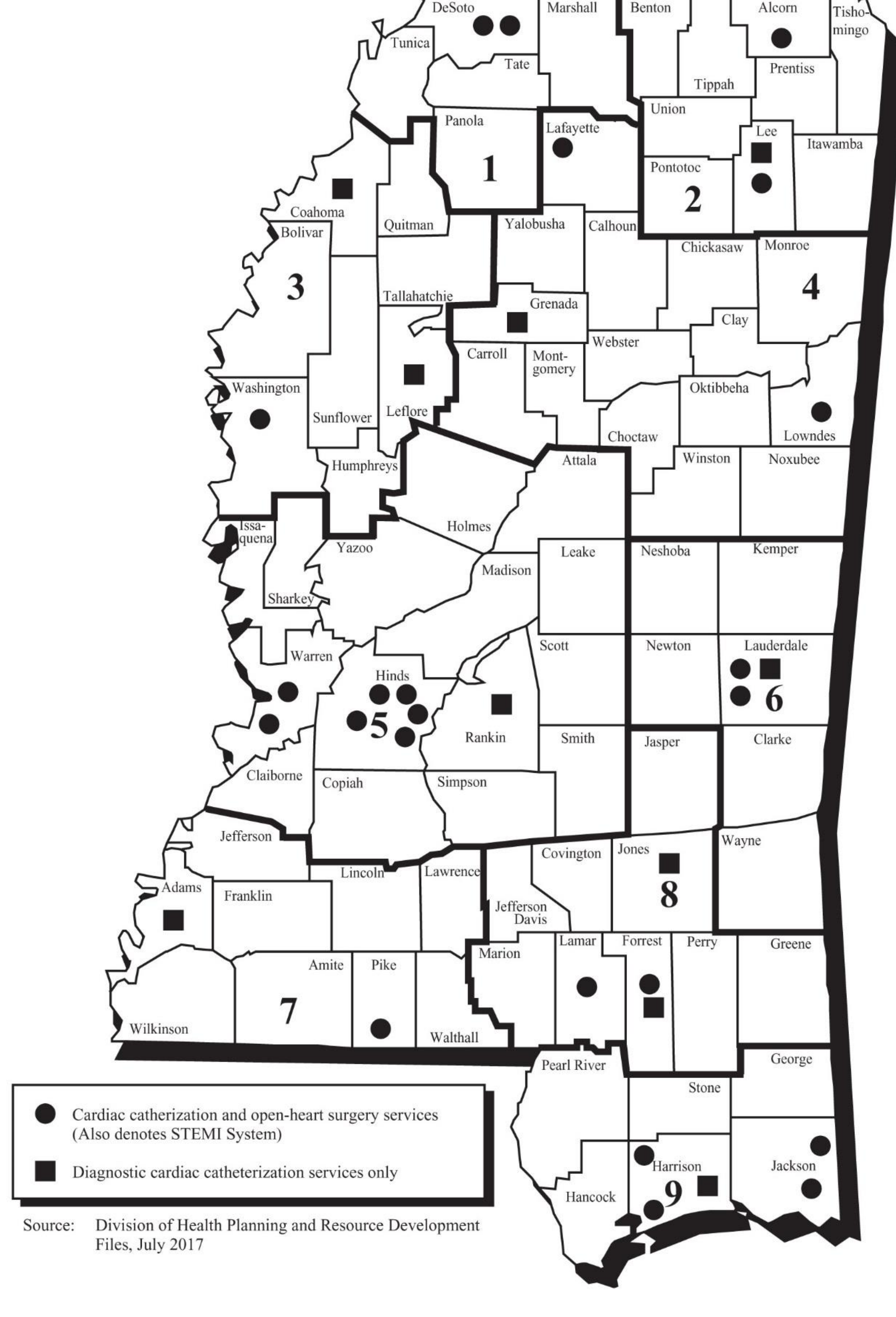
Need Criterion 6:Data Requirements

Applicants shall provide, as required under licensure standards, written assurance that they will record and maintain utilization data for open-heart surgeries (e.g., morbidity data, number of open-heart surgeries performed and mortality data, all reported by race, sex, and payor status) and make such data available to MSDH annually.

Need Criterion 7: CON Approval/Exemption for Open-Heart Surgery Equipment/Service

Before utilizing or providing the equipment or service, the applicant desiring to provide the open-heart surgery equipment or service shall have CON approval or written evidence that the equipment or service is exempt from CON approval as determined by MSDH through a determination of reviewability. Each specified piece of equipment must be exempt from or have CON approval.

Map 5-2
Cardiac Catheterization/Open-Heart Surgery Planning Areas (CC/OHSPA) and Location of Existing/CON-Approved Services



Source: Division of Health Planning and Resource Development Files, July 2017

517 Systems of Care

There are three systems of care: the Trauma Care System, the ST-Elevation Myocardial Infarction (STEMI) System, and the Stroke System. Mississippi is one of only six states that has multiple acute systems of care, and is the only state that has statewide systems for trauma, STEMI, and stroke.

Each system of care has five key components: an organizational structure, protocols for the transport and transfer of patients, an advisory group process, a performance/quality improvement process, and a data collection system. These components work together to accomplish the ultimate goal of the systems – to deliver the right patient to the right hospital the first time, an approach shown to improve outcomes.

518 Emergency Medical Services

In Mississippi, the Emergency Medical Services (EMS) system is extraordinary in that ninety-nine percent (99%) of the state's population is covered by paramedic level agencies. EMS provides services not only to certified prehospital personnel but also provides the highest standards of prehospital healthcare to the citizens and visitors of Mississippi ensuring, patients are delivered to the right hospital the first time.

518.01 Organization

The Emergency Medical Services Act of 1973 (Miss. Code Ann. §63-13-11) established standards for the organization of emergency services. Prior to 1974, government involvement in emergency medical services was primarily limited to providing an emergency department in the public hospital. Private operators, predominantly funeral homes, provided emergency transportation.

Within MSDH, the Bureau of Emergency Medical Services organizes, regulates, and maintains a statewide program to improve emergency medical care. Further, it coordinates agency resources in "all-hazard" planning and in response to disasters. This includes incidents involving weapons of mass destruction as well as natural disasters, from hurricanes on the coast to ice storms in the Delta.

EMS Services are typically provided in response to a medical emergency reported through the 9-1-1 system. A 9-1-1 call placed from any telephone is automatically routed to the appropriate designated Public Safety Answering Point (PSAP).

Once the call is received, the nature of the medical emergency is determined, the call is prioritized, appropriate personnel and equipment are dispatched, and pre-arrival instructions are given if appropriate. The dispatcher may ask a number of questions to help assess the nature and severity of the injury or illness. At times the dispatcher may give the caller specific patient care instructions to maximize the success of the injury or illness outcome.

518.02 Protocols

When EMS professionals are called, the injured or ill person is often transported to the hospital in an ambulance. EMS professionals work under protocols approved by physicians designated as Off Line Medical Control. The physician oversees the care of patients in EMS systems, and is knowledgeable about out-of-hospital patient care interventions and delivery systems. Typically the physicians work in conjunction with local EMS managers to assure quality patient care. EMS may be provided by a fire

department, a private ambulance service, a county or government-based service, a hospital-based service, or a combination of the above. EMS professionals may be paid or serve as volunteers in the community.

518.03 Advisory Group

In accordance with Miss. Code Ann. § 41-59-7, the Emergency Medical Services Advisory Council (EMSAC) was created, with membership appointed by the Governor.

518.04 Performance Improvement

The Medical Directors' Training and Quality Assurance (MDTQA) Committee provides performance improvement review of the EMS system and develops model protocols for adoption by EMS services. The committee is chaired by the State EMS Medical Director, a board-certified emergency physician, and membership includes physicians who provide medical control to EMS services, and EMS practitioners.

518.05 Data System

The Mississippi EMS Information System (MEMSIS) uses a web-based system hosted by ImageTrend. The ImageTrend EMS State Bridge is a pre-hospital emergency data collection, analysis and reporting system. EMS State Bridge integrates information across the entire emergency medical community, whether in the ambulance, the local station, or state offices. With the EMS State Bridge, ambulance services are able to satisfy reporting requirements easily, without major investment and without learning complex new technology. 153155

The system provides for:

- Data collection based upon the NHTSA V2.2.1 data set. Data will be migrated to the NHTSA V3.4 data set in FY2018.
- The aggregation of information from various units and services with the possibility of sharing secured data with other systems and agencies.
- Electronic transport of information to improve communications.
- Standard and ad hoc reporting for using data to support evidence based practices.
- Easy expansion through its open architecture as needs grow and evolve.
- Scalability to conform to the needs of small, medium and large services as required.

Additionally, the system is HIPAA compliant and sensitive to medical data security issues. The application meets and exceeds state and federal data privacy requirements.

519 Mississippi Trauma Care System

Trauma is the leading cause of death for all age groups in Mississippi from birth to age forty-four (44). Serious injury and death resulting from trauma events such as vehicle crashes, falls, and firearms claim 500 lives and disable 6,000 Mississippians each year. Trauma victims require immediate, expert attention.

519.01 Organization

Miss. Code Ann. §41-59-5 (5), establishes MSDH as the lead agency to develop a uniform, non-fragmented, inclusive statewide Trauma Care System, that provides excellent patient care. Through the State Trauma Plan, MSDH has designated seven trauma care regions; each incorporated as a 501c-3

organization which contracts with MSDH to administer the plan within their respective region. The State Trauma Plan includes the seven regional plans, allows for transfer protocols between trauma facilities, and for trauma patients to be transported to the "most appropriate" trauma facility for their injuries.

To increase participation in the Trauma Care System, the Mississippi Legislature enacted legislation (House Bill 1405) in 2008, which required MSDH to develop regulations mandating all licensed acute-care facilities participate in the Mississippi Trauma Care System ("Play or Pay"). Hospitals must participate at a level commensurate with their capabilities, or pay a non-participation fee to the Trauma Care Trust Fund. Each hospital's capability to participate in the Trauma Care System is reviewed annually by their respective Trauma Care Region and MSDH, which determines the appropriate level of participation and any associated fee.

Trauma facility designation levels set specific criteria and standards of care that guide hospital and emergency personnel in determining the level of care a trauma victim needs, and whether that hospital can care for the patient or transfer the patient to a trauma center that can administer more definitive care.

> **Level I Trauma Centers** must have a full range of trauma capabilities, including an emergency department, a full-service surgical suite, intensive care unit, and diagnostic imaging. Level I centers must have a surgical residency program, ongoing trauma research, and provide 24-hour trauma service. These hospitals provide a variety of other services to comprehensively care for ~~both~~ trauma patients. Level I Trauma Centers act as referral facilities for Level II, III, and IV Trauma Centers. The University of Mississippi Medical Center (UMMC) in Jackson is the only Level I facility in the state. Two Level I Trauma Centers border the northern and southeastern part of the state and are located in Tennessee and Alabama. Additionally, a "stand-alone" Tertiary Pediatric Trauma Center located in Tennessee participates in the system.
>
> **Level II Trauma Centers** must be able to provide comprehensive care to the severely injured patient. These facilities must have a full range of trauma capabilities, including an emergency department, a full service surgical suite, an intensive care unit, and diagnostic imaging. Level II Trauma Centers act as referral facilities for Level III and IV Trauma Centers.
>
> **Level III Trauma Centers** must offer general/trauma surgery and orthopedic surgery and have the ability to manage the initial care of multi-system trauma-patients. Transfer-protocols must be in place with Level I and II Trauma Centers for patients that exceed the Level III Trauma Center's resources.
>
> **Level IV Trauma Centers** provide initial evaluation and assessment of injured patients. Most patients will require transfer to facilities with more resources dedicated to providing optimal care for the injured patients. Level IV Trauma Centers must have transfer protocols in place with Level I, II, and III Trauma Centers.

519.02 Protocols

The Trauma Care System has developed uniform trauma activation criteria for all hospitals participating in the system to insure that patients receive appropriate care, regardless of locale. EMS Field Destination Guidelines, based on the Center for Disease Control (CDC) Field Triage Decision Scheme, provide for the transport of trauma patients to the most appropriate facility. The approved Trauma Activation Criteria, based on the publication *Resources for Optimal Care of the Injured Patient,* provide the criteria used by trauma center staff for trauma team activation.

519.03 Advisory Committee

In accordance with Miss. Code Ann. § 41-59-7, the Mississippi Trauma Advisory Committee (MTAC) was created as a committee of the Emergency Medical Services Advisory Council (EMSAC). This committee is comprised of members of EMSAC, appointed by the Governor. The committee acts as the advisory body for trauma care system development, and provides technical support to MSDH in all areas of trauma care system design, trauma standards, data collection and evaluation, continuous quality improvement, trauma care system funding, and evaluation of the trauma care system and trauma care programs.

519.04 Performance Improvement

A systems approach to trauma care provides the best means to protect the public from pre-mature death and prolonged disability. The development of a statewide system of care for the injured must include a mechanism to monitor, measure, assess, and improve the processes and outcome of care. The process must be a continuous, multidisciplinary effort to reduce inappropriate variation in the care of trauma patients, and improve the effectiveness of the system and its components, including pre-hospital care (communication, dispatch, medical control, triage, and transport), hospital care, inter-facility management, rehabilitative care, and mass casualty disaster response.

Statewide Performance Improvement (PI) consists of multiple layers of continuous monitoring and evaluation of treatment processes to identify opportunities to optimize care and improve outcomes. The continuous cycle of evaluation extends from the PI programs of EMS providers and hospitals to review committees established at the regional and state levels.

The State Trauma PI Committee is appointed by the MSDH Director of Health Protection. The committee is independent from MTAC and EMSAC. The PI Committee is chaired by the state Trauma System of Care Medical Director. Membership shall include, but may not be limited to, representatives from the following areas:

- Emergency Medicine
- State EMS PI Committee
- Trauma Registry Committee
- One representative from each Trauma Care Region
- Nursing representative from each Trauma Center level
- Tertiary Pediatric Trauma Center
- Trauma Medical Directors from each Level I Trauma Center

The PI Committee establishes specific statewide performance measures. Subject Matter Experts (SME) participate in committee activities appropriate to their expertise. MSDH Division of Trauma provides administrative support to the PI Committee and all meetings of the Committee, PI Committee meetings are by invitation only and are not open to the public.

519.05 Data System

There are four objectives of the trauma registry: performance improvement, enhanced hospital operations, injury prevention, and medical research. In July 2006, MSDH deployed "Collector" Trauma Registry software to all hospitals that participated in the Mississippi Trauma Care System. Today, every Mississippi licensed acute care facility (hospital) having an organized emergency service or department uses the Collector software to submit their data to the State Trauma Registry.

Collector is a trauma registry system that helps users meet changing requirements of collection and evaluation of trauma data for quality assurance, accreditation, management, prevention and research. Collector is a complete data management and report generating package which includes a user friendly data entry and verification system, querying capabilities and integration with expert coding software. Collector offers coding, database and analysis capabilities.

In addition to its use as the trauma registry, Collector is also used as the state's burn registry and the registry for Traumatic Brain and Spinal Cord Injuries (TBI/SCI).

520 STEMI System of Care

ST-elevation myocardial infarction (STEMI) is a significant public health problem and carries a high risk of death and disability. The American Heart Association (AHA) estimates that as many as 400,000 people will suffer from a STEMI heart attack each year in the United States. Mississippi currently leads the nation in mortality and morbidity from cardiovascular disease.

STEMI patients should be recognized as quickly as possible to identify those eligible for thrombolytic or primary PCI therapy. Research has shown that both morbidity and mortality can be reduced by the approach of rapid interventional reperfusion within ninety (90) minutes of hospital arrival. Additional research has demonstrated that in-the-field recognition by pre-hospital providers utilizing 12-lead ECG, coupled with pre-hospital notification of the receiving facilities, can further reduce time to reperfusion, resulting in improved outcomes.

520.01 Organization

The STEMI System of Care is a voluntary system comprised of a number of separate components, which are organized and work together, as a system. The individual components and elements are described below:

- STEMI Regions – This component facilitates system organization, coordination, and education requirements for both practitioners and the public. Each STEMI Region (North, Central, and South) will have a regional STEMI Coordinator, who will schedule and facilitate quarterly regional meetings.
- Pre-Hospital Component – EMS units are an integral part of the STEMI System. All EMTs, Paramedics, on-line and off-line medical control physicians need to have a basic knowledge and awareness of the STEMI System Plan elements and system function. Specifically, this knowledge refers to the alert criteria (identification of a STEMI), and communication procedures.
- Hospital Component – Hospitals may participate in the STEMI System on a voluntary basis, but must meet the criteria prescribed in the STEMI Standards to be designated as a STEMI Receiving or STEMI Referral Center.
- Program oversight is provided by MSDH's Bureau of Acute Care Systems.

Map 5-2 identifies those hospitals participating in the STEMI System.

520.02 Protocols

Standard treatment protocols for both STEMI Receiving Centers and STEMI Referral Centers have been developed and published by the Mississippi Healthcare Alliance (MHCA), the

practitioners' organization which initiated the development of the system of care. The current protocols may be found on the MHCA website at: http://mshealthcarealliance.org/.

520.03 Advisory Group

The STEMI Advisory Committee meets quarterly. Membership is compromised of the following membership categories as prescribed by the STEMI System of Care Plan:

- Cardiology Co-Chairman
- Emergency Medicine Co-Chairman
- Emergency Medicine Representative – Northern Region
- Emergency Medicine Representative – Central Region
- Emergency Medicine Representative – Southern Region
- Emergency Nursing Representative – Northern Region
- Emergency Nursing Representative – Central Region
- Emergency Nursing Representative – Southern Region
- Hospital Administration Representative – Northern Region
- Hospital Administration Representative – Central Region
- Hospital Administration Representative – Southern Region
- Cardiology Representative – Northern Region
- Cardiology Representative – Central Region
- Cardiology Representative – Southern Region
- STEMI Nursing Representative – Northern Region
- STEMI Nursing Representative – Central Region
- STEMI Nursing Representative – Southern Region
- Southern Regional STEMI Coordinator
- Registry Representative – Northern Region
- Registry Representative – Central Region
- Registry Representative – Southern Region
- EMS Provider Representative – Northern Region
- EMS Provider Representative – Central Region
- EMS Provider Representative – Southern Region
- EMS Administration Representative – Northern Region
- EMS Administration Representative – Central Region
- EMS Administration Representative – Southern Region
- Northern Regional STEMI Coordinator
- Central Regional STEMI Coordinator
- Southern Regional STEMI Coordinator
- American Heart Association Representative

520.04 Performance Improvement

Statewide Performance Improvement (PI) consists of multiple layers of continuous monitoring and evaluation of treatment processes to identify opportunities to optimize care and improve outcomes. The continuous cycle of evaluation extends from the PI programs of EMS providers and hospitals to review committees established at the regional and state levels.

The STEMI PI Committee meets quarterly. Membership is comprised of the following:

- Cardiology Chair
- Emergency Medicine Vice Chair
- Cardiologist(one from each region)
- Emergency Department Physician (one from each region)
- Representative from each PCI hospital (minimum of one per region)
- Non-PCI hospital representative (minimum of one per region)
- EMS Representatives (minimum of three)

The PI Committee establishes specific system-wide performance measures. Subject Matter Experts (SME) participate in committee activities appropriate to their expertise. The MSDH Bureau of Acute Care Systems provides administrative support to the PI Committee and all meetings of the Committee. PI committee meetings, are by invitation only, and are not open to the public.

520.05 Data System

The data system for the STEMI System of Care is the ACTION Registry-GWTG (Get With The Guidelines) system. The ACTION Registry-GWTG is a risk-adjusted, outcomes-based quality improvement program that focuses exclusively on high-risk STEMI/NSTEMI patients. It helps hospitals apply American College of Cardiology (ACC) and American Heart Association (AHA) clinical guideline recommendations in their facilities, and provides invaluable tools to measure care and achieve quality improvement goals. Use of the ACTION Registry-GWTG is a requirement for participation in the STEMI System of Care.

521 Acute Ischemic Stroke System of Care

Mississippi ranks fourth in the nation in occurrence of death from the immediate and long-term effects of stroke. Moreover, stroke continues to be the fifth leading cause of death and a leading cause of disability in Mississippi. However, eighty-three percent (83%) of stroke occurrences in Calendar Year 2015 were potentially treatable ischemic strokes. The primary goal of the Mississippi Stroke System of Care is to get the patient suffering from a stroke to an appropriate hospital so that patients who are candidates for thrombolytic and interventional therapies may receive appropriate care in a timely manner. This approach is supported by research that shows early thrombolytics for ischemic stroke and interventional therapy for large vessel occlusion improve outcomes in patients suffering from these types of stroke. Therefore, the Stroke System of Care has focused on early recognition of strokes by educating individuals to call 911 when a stroke occurs, minimizing door to CT times and ensuring early administration of thrombolytics.

In Mississippi, most of the specialty physicians, like neurologists, are located in select large medical centers; therefore, access to a stroke specialist is a primary concern in stroke care. Unlike trauma and STEMI systems of care, where it is essential to get the patient to a specialty facility in the shortest amount of time, stroke care can be initiated at a rural facility in conjunction with input from a nurse practitioner trained in stroke care, either by telephone or telemedicine. A careful patient history and examination, laboratory analysis, and a head CT can be done at “Stroke-Ready” hospitals, allowing the timely decision to treat the patient with thrombolytic therapy at that hospital before transfer to a “Stroke Center” (“Drip and Ship”) if needed for neurological, neurosurgical, or neuro-interventional support.

521.01 Organization

The Stroke System of Care is a voluntary system comprised of a number of separate components, which are organized and work together, as a system. The individual components and elements are described below:

- Stroke Regions – This component facilitates system organization, coordination, and education requirements for both practitioners and the public. Each Stroke Region (North, Central, and South) will have a regional Coordinator, who will schedule and facilitate quarterly regional meetings.
- Pre-Hospital Component – EMS units are an integral part of the STEMI System. All EMTs and paramedics need to have a basic knowledge and awareness of the Stroke System elements and system function. Specifically, this knowledge refers to entry criteria (identification of an acute ischemic stroke), triage and destination guidelines, and communication procedures. On-line and off-line medical control physicians will also need to be involved with the Stroke System elements and system function.
- Hospital Component – Hospitals may participate in the Stroke System on a voluntary basis.
- Program oversight is provided by MSDH's Bureau of Acute Care Systems.

521.02 Protocols

Standard treatment protocols for Stroke Ready and Non-Stroke hospitals have been developed and published by the Mississippi Healthcare Alliance (MHCA), the practitioners' organization which initiated the development of the system of care. The current protocols may be found on the MHCA website at: http://mshealthcarealliance.org/.

The protocols are centered on the "Drip and Ship" model, where outlying hospitals identify the presence of an acute ischemic stroke through a head CT, and initiate thrombolytic therapy (tPA-Alteplase) prior to transferring the patient to a Stroke Center. EMS protocols include the use of the Cincinnati Stroke Scale to identify potential stroke victims, and their delivery to a Stroke Ready hospital for diagnosis.

521.03 Advisory Group

The Stroke Advisory Committee meets quarterly. Membership is compromised of the following as prescribed in the Stroke System of Care Plan:

- Chairperson
- Emergency Medicine Representative – Northern Region
- Emergency Medicine Representative – Central Region
- Emergency Medicine Representative – Southern Region
- Emergency Nursing Representative – Northern Region
- Emergency Nursing Representative – Central Region
- Emergency Nursing Representative – Southern Region
- Hospital Administration Representative – Northern Region
- Hospital Administration Representative – Central Region
- Hospital Administration Representative – Southern Region
- Neurology Representative – Northern Region
- Neurology Representative – Central Region
- Neurology Representative – Southern Region
- Stroke Nursing Representative – Northern Region
- Stroke Nursing Representative – Central Region

- Stroke Nursing Representative – Southern Region
- Registry Representative – Northern Region
- Registry Representative – Central Region
- Registry Representative – Southern Region
- EMS Provider Representative – Northern Region
- EMS Provider Representative – Central Region
- EMS Provider Representative – Southern Region
- EMS Administration Representative – Northern Region
- EMS Administration Representative – Central Region
- EMS Administration Representative – Southern Region
- Northern Regional STROKE Coordinator
- Central Regional STROKE Coordinator
- Southern Regional STROKE Coordinator
- American Heart Association Representative

521.04 Performance Improvement

Statewide Performance Improvement (PI) consists of multiple layers of continuous monitoring and evaluation of treatment processes to identify opportunities to optimize care and improve outcomes. The continuous cycle of evaluation extends from the PI programs of EMS providers and hospitals to review committees established at the regional and state levels.

The Stroke PI Committee meets quarterly and is appointed by the State Health Officer. Membership is comprised of the following:

- Neurology Chair
- Emergency Medicine Vice Chair
- Neurologist (one from each region)
- One Emergency Department Physician (one from each region)
- Representative from each stroke participating hospital (minimum of one per region)
- EMS representative (minimum of three)

Subject Matter Experts (SME) participate in committee activities appropriate to their expertise. The MSDH Bureau of Acute Care Systems provides administrative support to the PI Committee and all meetings of the Committee. PI Committee meetings are by invitation only and are not open to the public.

521.05 Data System

The American Heart Association/American Stroke Association GWTG (Get With The Guidelines) – Stroke Program is a performance improvement program for hospitals that uses a stroke registry to support its aims. GWTG-Stroke collects patient level data on characteristics, diagnostic testing, treatments, adherence to quality measures, and in-hospital outcomes on patients hospitalized with stroke and transient ischemic attack (TIA). Collection of comprehensive, continuous stroke data supports data analysis and the development of interventions to improve stroke care.

The primary goal of GWTG-Stroke program is to improve the quality of care and outcomes for patients hospitalized with stroke and TIA. The GWTG-Stroke registry helps achieve this goal in a variety of ways, including:

- Enabling high caliber stroke research;
- Promoting stroke center designation;
- Supporting hospital level quality improvement; and
- Driving the creation of a regional stroke system

Map 5-3
Mississippi Trauma Care Regions

Trauma Care Centers	
Level I	★ - 4
Level II	■ - 3
Level III	● - 16
Level IV	▲ - 62

TN ★ ★

AL ★

Delta
North
Central
East Central
Southwest
Southeast
Coastal

DeSoto, Tunica, Tate, Marshall, Benton, Alcorn, Tishomingo, Tippah, Prentiss, Union, Panola, Lafayette, Lee, Itawamba, Pontotoc, Coahoma, Quitman, Yalobusha, Calhoun, Chickasaw, Monroe, Bolivar, Tallahatchie, Grenada, Clay, Webster, Carroll, Montgomery, Oktibbeha, Washington, Sunflower, Leflore, Choctaw, Lowndes, Humphreys, Attala, Winston, Noxubee, Holmes, Issaquena, Yazoo, Madison, Leake, Neshoba, Kemper, Sharkey, Warren, Hinds, Scott, Newton, Lauderdale, Rankin, Smith, Jasper, Clarke, Claiborne, Copiah, Simpson, Jefferson, Covington, Jones, Wayne, Lincoln, Lawrence, Adams, Franklin, Jefferson Davis, Lamar, Forrest, Perry, Greene, Marion, Amite, Pike, Wilkinson, Walthall, Pearl River, George, Stone, Jackson, Harrison, Hancock

Source: Mississippi State Department of Health, Division of Emergency Medical Services (February 2018)

Chapter 6 Comprehensive Medical Rehabilitation Services

600 Comprehensive Medical Rehabilitation Services

Comprehensive medical rehabilitation (CMR) services are an intensive care service that treats patients with severe physical disabilities by providing a coordinated multidisciplinary approach that requires an organized program of integrated services. Level I facilities offer a full range of CMR services to treat disabilities such as spinal cord injury, brain injury, stroke, congenital deformity, amputations, major multiple trauma, polyarthritis, fractures of the femur, and neurological disorders. Level II facilities offer CMR services to treat disabilities other than spinal cord injury, congenital deformity, and brain injury.

The bed capacity, number of discharges, average length of stay, and occupancy rates for Level I and Level II CMR facilities are listed in Tables 6-1 and 6-2, respectively.

Table 6-1
Hospital-Based Level I CMR Units
FY 2017

Facilities	Licensed Bed Capacity	Average Daily Census	Average Length of Stay	Occupancy Rate (%)
Baptist Memorial Hospital - DeSoto	30	17.06	12.49	56.86
Delta Regional Medical Center -West Campus	24	8.16	12.26	34.00
Forrest General Hospital	24	16.37	14.46	68.23
Memorial Hospital at Gulfport	33	22.91	12.19	69.41
Mississippi Methodist Rehab Center	80	55.75	16.21	69.69
North Miss Medical Center	30	23.95	13.58	79.85
University Hospital and Health System*	0	0.00	0.00	0.00
State Total	**221**	**20.60**	**11.60**	**54.01**

Source: Applications for Renewal of Hospital License for Calendar Year 2016; FY 2017 Annual Hospital Report

Note(s): According to the Applications for Renewal of Hospital License for Calendar Year 2016 and FY 2017 Annual Hospital Report, University Hospital and Health System* reported zero (0) Level 1 CMR Bed Units.

Table 6-2
Hospital-Based Level II CMR Units
FY 2017

Facility	Licensed Bed Capacity	Average Daily Census	Average Length of Stay	Occupancy Rate (%)
Baptist Memorial Hospital - North Miss	13	4.99	10.80	38.36
Greenwood Leflore Hospital	20	12.08	12.63	60.40
Merit Health Natchez f/k/a Natchez Regional Medical Center	20	7.41	12.63	37.03
Northwest MS Regional Medical Center*	0	0	0.00	0.00
Anderson Regional Medical Center South	20	13.29	11.34	66.47
Singing River Hospital*	20	15.54	12.73	77.71
TOTALS	**93**	**8.89**	**10.02**	**46.66**

Source: Applications for Renewal of Hospital License for Calendar Year 2016; FY 2017 Annual Hospital Report

Note(s): Singing River Hospital was CON approved February 2013 to add 8 Level II CMR Beds. Singing River Hospital currently has a Six Month Extension for the completion of the proposed project. Northwest MS Regional Medical Center place 14 Beds in abeyance September 2013.

601 The Need for Comprehensive Medical Rehabilitation Services

A total of 221 Level I and 93 Level II rehabilitation beds were operational in Mississippi during FY 2017. Map 6-3 at the end of this chapter shows the location of all CMR facilities in the state. The state as a whole serves as a single service area when determining the need for comprehensive medical rehabilitation beds/services. Based on the bed need formula found in the criteria and standards section of this chapter, Mississippi currently needs 30 Level I beds and needs 103 additional Level II CMR beds

602 The Need for Children's Comprehensive Medical Rehabilitation Services

No universally accepted methodology exists for determining the need of children's comprehensive medical rehabilitation services. The bed need methodology in the previous section addresses need for all types of comprehensive medical rehabilitation beds, including those for children.

603 Certificate of Need Criteria and Standards for Comprehensive Medical Rehabilitation Beds/Services

603.01 Policy Statement Regarding Certificate of Need Applications for Comprehensive Medical Rehabilitation Beds/Services

1. Definition: Comprehensive Medical Rehabilitation (CMR) Services provided in a freestanding CMR hospital or a CMR distinct part unit are defined as an intensive care service providing a coordinated multidisciplinary approach to patients with severe physical disabilities that require an organized program of integrated services. These disabilities include: stroke, spinal cord injury, congenital deformity, amputation, major multiple trauma, fractures of the femur (hip fracture), brain injury, polyarthritis, including rheumatoid arthritis, or neurological disorders, including multiple sclerosis, motor neuron disease, polyneuropathy, muscular dystrophy, and Parkinson's Disease.

2. Planning Areas: The state as a whole shall serve as a single planning area for determining the need of CMR beds/services.

3. CMR Services:

   Level I - Level I CMR providers may provide treatment services for all rehabilitation diagnostic categories.

   Level II - Level II CMR providers may provide treatment services for all rehabilitation diagnostic categories except: (1) spinal cord injuries, (2) congenital deformity, and (3) brain injury.

4. CMR Need Determination: MSDH shall determine the need for Level I CMR beds/services based upon a formula of 0.08 beds per 1,000 population for the state as a whole.

   MSDH shall determine need for Level II CMR beds/services based upon a formula of 0.0623 beds per 1,000 population for the state as a whole. Table 6.3 shows the current need for CMR beds.

5. Present Utilization of Rehabilitation Services: When reviewing CON applications, MSDH shall consider the utilization of existing services and the presence of valid CONs for services.

6. Minimum Sized Facilities/Units: Freestanding CMR facilities shall contain not less than 60 beds. Hospital-based Level I CMR units shall contain not less than 20 beds. If the established formula reveals a need for more than ten beds, MSDH may consider a twenty (20) bed (minimum sized) unit for approval. Hospital-based Level II CMR facilities are limited to a maximum of thirty (30) beds. New Level II rehabilitation units shall not be located within a forty-five (45) mile radius of any other CMR facility.

7. Expansion of Existing CMR Beds: Before any additional CMR beds, for which CON review is required, are approved for any facility presently having CMR beds, the currently licensed CMR beds at said facility shall have maintained an occupancy rate of at least

eighty percent (80%) for the most recent twelve (12) month licensure reporting period or at least seventy percent (70%) for the most recent two (2) years.

8. Priority Consideration: When reviewing two or more competing CON applications, MSDH shall use the following factors in the selection process, including, but not limited to, a hospital having a minimum of 160 licensed acute care beds as of January 1, 2000; the highest average daily census of the competing applications; location of more than 45 mile radius from an existing provider of CMR services; proposed comprehensive range of services; and the patient base needed to sustain a viable CMR service.

9. Children's Beds/Services: Should a CON applicant intend to serve children, the application shall include a statement to that effect.

10. Other Requirements: Applicants proposing to provide CMR beds/services shall meet all requirements set forth in CMS regulations as applicable, except where additional or different requirements as stated in the State Health Plan or in the licensure regulations, are required. Level II CMR units are limited to a maximum size of thirty (30) beds and must be more than a forty-five (45) mile radius from any other Level I or Level II rehabilitation facility.

11. Enforcement: In any case in which MSDH finds a Level II provider has failed to comply with the diagnosis and admission criteria as set forth above, the provider shall be subject to the sanctions and remedies as set forth in Section 41-7-209 of the Mississippi Code of 1972, as amended, and other remedies available to MSDH in law or equity.

12. Addition/Conversion of Beds: Effective July 1, 1994, no health care facility shall be authorized to add any beds or convert any beds to another category of beds without a CON under the authority of Section 41-7-191(1)(c), unless there is a projected need for such beds in the planning district in which the facility is located.

13. Delicensed Beds: Effective March 4, 2003, if a health care facility has voluntarily delicensed some of its existing bed complement, it may later relicense some or all of its delicensed beds without the necessity of having to acquire a CON. MSDH shall maintain a record of the delicensing health care facility and its voluntarily delicensed beds and continue counting those beds as part of the state's total bed count for health care planning purposes.

603.02 Certificate of Need Criteria and Standards for Comprehensive Medical Rehabilitation Beds/Services

MSDH will review applications for a CON for the establishment, offering, or expansion of comprehensive medical rehabilitation beds and/or services under the statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code 1972, Annotated, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*, all adopted rules, procedures, and plans of MSDH, and the specific criteria and standards listed below.

In addition, comprehensive rehabilitation services are reviewable if the proposed provider has not provided such services on a regular basis within twelve (12) months prior to the time such services would be offered. The twenty (20) bed hospital-based comprehensive medical rehabilitation facilities which were operational or approved on January 1, 2001, are *grandfathered* and shall not be required to obtain a Certificate of Need as long as the services are provided continuously by those facilities and are limited to the diagnoses set forth below for Level II comprehensive medical rehabilitation facilities.

Need Criterion 1: Projected Need

a. New/Existing CMR Beds/Services: The need for Level I CMR beds in the state shall be determined using a methodology of 0.08 beds per 1,000 population. The state as a whole shall be considered as a single planning area.

   The need for Level II CMR beds in the state shall be determined using a methodology of 0.0623 comprehensive medical rehabilitation beds per 1,000 population. The state as a whole shall be considered a planning area.

b. Projects which do not Involve the Addition of any CMR Beds: The applicant shall document the need for the proposed project. Documentation may consist of, but is not necessarily limited to, citing of licensure or regulatory code deficiencies, institutional long-term plans (duly adopted by the governing board), recommendations made by consultant firms, and deficiencies cited by Accreditation Agencies (JCAHO, CAP).

c. Projects which Involve the Addition of CMR Beds: The applicant shall document the need for the proposed project.

   Exception: Notwithstanding the service specific need requirements as stated in "a" above, MSDH may approve additional beds for facilities which have maintained an occupancy rate of at least eighty percent (80%) for the most recent twelve (12)month licensure reporting period or at least seventy percent (70%) for the most recent two (2) years.

d. Level II Trauma Centers: The applicant shall document the need for the proposed CMR project.

   Exception: Notwithstanding the forty-five (45) mile radius distance requirement from an existing CMR provider, MSDH may approve the establishment of a twenty (20) bed Level II CMR unit for any hospital without CMR beds which held a Level II Trauma care designation on July 1, 2003, as well as on the date the Certificate of Need CON application is filed.

e. Conversion of Level II CMR Beds to Level I CMR Beds: Notwithstanding any other policy statement, standard or criterion, including, but not limited to, Need Criterion 1(a) above, an existing Level II CMR unit may convert no more than eight (8) beds to Level I CMR status if the Level II facility meets the following requirements:

   (i) The Level II CMR unit demonstrates high utilization by documenting that it has maintained an occupancy rate of at least eighty percent (80%) for the most recent

twelve (12) month licensure reporting period or at least seventy percent (70%) for the most recent two (2) years, as reported in the Mississippi State Health Plan.

(ii) The Level II CMR unit establishes the need for Level I CMR status for no more than eight (8) beds by documenting that the facility expects to have a minimum of sixty (60) patient admissions annually with one or more of the following rehabilitation diagnostic categories: spinal cord injuries, congenital deformity, and/or brain injury. This documentation may include, without limitation, the Level II CMR unit's patient data or any other data or documentation acceptable to MSDH.

(iii) The Level II CMR unit shall document compliance with the standards for Level I CMR units set forth below in Criterion 2 (Treatment and Programs) and Criterion 3 (Staffing and Services).

(iv) The Level II facility shall obtain the written support for the project from any Level I CMR facility within a 45 mile radius of the facility. The Department shall assess the potential of the project on any adverse impact on any Level I CMR facilities operating in the state and such assessment shall be continually reviewed by the Department. The Department may revoke or suspend any Level II CMR unit operating a Level I program for non-compliance or finding of adverse impact to any Level I CMR units or programs in the state.

Need Criterion 2: Level 1 CMR Services
Applicants proposing to establish Level I CMR services shall provide treatment and programs for one or more of the following conditions:

a. Stroke,

b. Spinal cord injury,

c. Congenital deformity,

d. Amputation,

e. Major multiple trauma,

f. Fractures of the femur (hip fracture),

g. Brain injury,

h. Polyarthritis, including rheumatoid arthritis, or neurological disorders, including multiple sclerosis, motor neuron disease, polyneuropathy, muscular dystrophy, and Parkinson's Disease.

Applicants proposing to establish Level II CMR services shall be prohibited from providing treatment services for the following rehabilitation diagnostic categories: (1) spinal cord injury, (2) congenital deformity, and (3) brain injury.

Facilities providing Level I and Level II CMR services shall include on their *Annual Report of Hospitals* submitted to MSDH the following: total admissions, average length of stay by diagnosis, patient age, sex, race, zip code, payor source, and length of stay by diagnosis.

Need Criterion 3: Staffing and Services

a. Freestanding Level I Facilities

i. Shall have a Director of Rehabilitation who:

(1) Provides services to the hospital and its inpatient clientele on a full-time basis;

(2) Is a Doctor of Medicine or Osteopathy licensed under state law to practice medicine or surgery; and

(3) Has had, after completing a one (1) year hospital internship, at least two (2) years of training in the medical management of inpatients requiring rehabilitation services.

ii. The following services shall be provided by full-time designated staff:

(1) Speech therapy

(2) Occupational therapy

(3) Physical therapy

(4) Social services

iii. Other services shall be provided as required, but may be by a consultant or on a contractual basis.

b. Hospital-Based Units

i. Both Level I and Level II hospital-based units shall have a Director of Rehabilitation who:

(1) Is a Doctor of Medicine or Osteopathy licensed under state law to practice medicine or surgery;

(2) Has had, after completing a one (1) year hospital internship, at least two (2) years of training or experience in the medical management of inpatients requiring rehabilitation services; and

(3) Provides services to the unit and its inpatients for at least twenty (20) hours per week.

ii. The following services shall be available full time by designated staff:

(1) Physical therapy

(2) Occupational therapy

(3) Social services

iii. Other services shall be provided as required, but may be by a consultant or on a contractual basis.

603.03 Certificate of Need Criteria and Standards for Children's Comprehensive Medical Rehabilitation Beds/Services

Until such time as specific criteria and standards are developed, the MSDH will review CON applications for the establishment of children's CMR services under the general criteria and standards listed in the *Mississippi Certificate of Need Review Manual* in effect at the time of submission of the application, and the preceding criteria and standards listed.

603.04 Comprehensive Medical Rehabilitation Bed Need Methodology

The determination of need for Level I CMR beds/services will be based on 0.08 beds per 1,000 population in the state as a whole for the year 2023. Table 6-3 presents Level I CMR bed need.

The determination of need for Level II CMR beds/services will be based on 0.0623 beds per 1,000 population in the state as a whole for the year 2023. Table 6-3 presents Level II CMR bed need.

Table 6-3
Comprehensive Medical Rehabilitation Bed Need
2017

Level	Estimated Population 2023	Aproved CMR Beds	CMR Beds Needed	Difference
Level I	3,138,145	191	251	60
Level II	3,138,145	93	196	103

Source(s): Applications for Renewal of Hospital License for Calendar Year 2016; FY 2017 Annual Hospital Report. State Data Center of Mississippi, University of Mississippi Center for Population Studies, February 13, 2018.

Map 6-1
Location of Comprehensive Medical Rehabilitation Facilities Level I and Level II

Level I: ■

1. ■ Baptist Memorial Hospital
   DeSoto County
   30 Bed Unit

2. ■ Delta Regional Medical Center
   24 Bed Unit (8 CON Approved)

3. ■ Forrest General Hospital
   24 Bed Unit

4. ■ Memorial Hospital
   at Gulfport
   33 Bed Unit

5. ■ Mississippi Methodist
   Hospital and Rehabilitation
   Center
   80 Bed Unit

6. ■ North Mississippi
   Medical Center

7. ■ University Hospital
   and Health System

Level II: ▲

1. ▲ Baptist Memorial Hospital
   North Mississippi
   13 Bed Unit

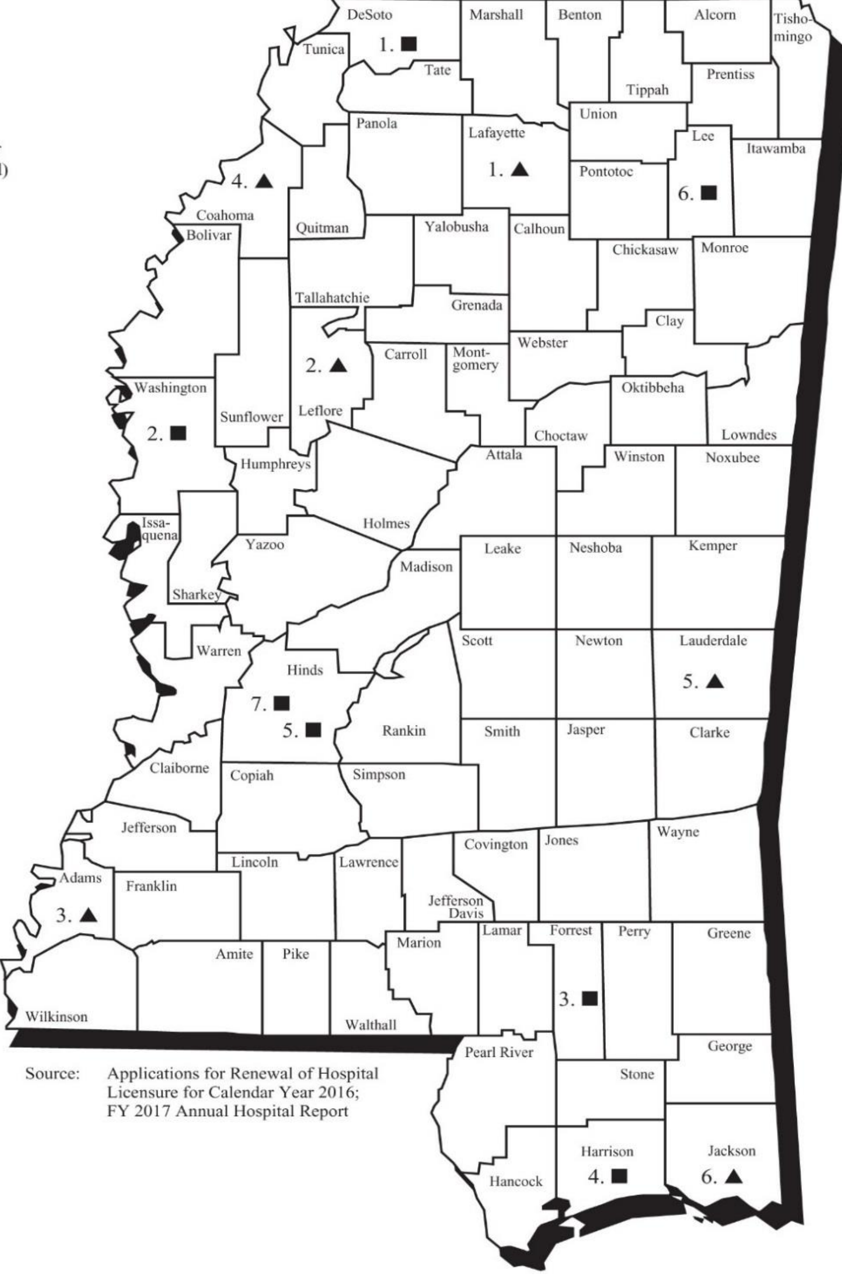
2. ▲ Greenwood Leflore Hospital
   20 Bed Unit

3. ▲ Natchez Regional
   Medical Center
   20 Bed Unit

4. ▲ Northwest MS Regional
   Medical Center
   14 Beds in Abeyance

5. ▲ Anderson Regional
   Medical Center-South
   20 Bed Unit

6. ▲ Singing River Hospital
   20 Bed Unit
   (8 CON Approved)



Source: Applications for Renewal of Hospital Licensure for Calendar Year 2016; FY 2017 Annual Hospital Report

604 Certificate of Need Criteria and Standards for Comprehensive Medical Residential Medical Rehabilitation Beds/Services for Patients with Traumatic Brain Injury (CRMR-TBI)

604.01 Policy Statement Regarding Certificate of Need Applications for Comprehensive Residential Medical Rehabilitation Beds/Services for Patients with Traumatic Brain Injury

1. Definitions:

   (a) Comprehensive Residential Medical Rehabilitation Services (CRMR) for Patients with a Traumatic Brain Injury (TBI) are defined as a place which is devoted to the provision of residential treatment and rehabilitative care in a transitional living program or a lifelong living program for periods of twenty-four (24) hours or longer for persons who have traumatic brain injury.

   (b) A transitional living program is treatment and rehabilitative care delivered to traumatic brain injury patients who require education and training for independent living with a focus on compensation for skills which cannot be restored; such care prepares clients for maximum independence, teaches necessary skills for community interaction, works with clients pre-vocational and vocational training and stresses cognitive, speech, and behavioral therapies structured to the individual needs of patients.

   (c) Lifelong living program is treatment and rehabilitative care to traumatic brain injury patients who have been discharged from advanced treatment and rehabilitation facilities, but who cannot live at home independently, and who require on-going lifetime support and rehabilitation.

   (d) A TBI is a traumatic harm to the brain and its related parts resulting in organic damage thereto that may cause physical, intellectual, emotional, social, and/or vocational changes in a person.

2. Planning Areas: The state as a whole shall serve as a single planning area for determining the need of CRMR beds/services for patients with a TBI.

3. Any application for a CRMR-TBI shall document the need for such a program in the state. Any application for an expansion through the addition of beds at a CRMR-TBI shall document an occupancy rate in excess of seventy percent (70%) for the most recent two (2) years.

4. Present Utilization of Rehabilitation Services: When reviewing CON applications for CRMR-TBI, MSDH shall consider the utilization of existing services and the presence of valid CONs for services.

5. Minimum Sized Facilities/Units: CRMR-TBI facilities shall contain not less than six (6) beds and no more than thirty (30) beds. MSDH shall give a preference for CRMR-TBI facilities that are not located within a forty-five (45) mile radius of any other CRMR-TBI facility.

6. Children's Beds/Services: Should a CON applicant intend to serve children, the application shall include a statement to that effect.

7. Other Requirements: Applicants proposing to provide CRMR-TBI beds/services shall meet all requirements set forth in CMS regulations as applicable, except where additional or different requirements, as stated in the State Health Plan or in the licensure regulations, are required.

8. Effective July 1, 1994, no health care facility shall be authorized to add any beds or convert any beds to another category of beds without a CON under the authority of Section 41-7-191(1)(c), unless there is a projected need for such beds in the planning district in which the facility is located.

9. Effective March 4, 2003, if a health care facility has voluntarily delicensed some of its existing bed complement, it may later relicense some or all of its delicensed beds without the necessity of having to acquire a CON. MSDH shall maintain a record of the delicensing health care facility and its voluntarily delicensed beds and continue counting those beds as part of the state's total bed count for health care planning purposes.

604.02 Certificate of Need Criteria and Standards for Comprehensive Residential Medical Rehabilitation Beds/Services for Patients with Traumatic Brain Injury (CRMR-TBI)

MSDH will review applications for a CON for the establishment, offering, or expansion of CRMR beds and/or services for patients with TBI under the statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code 1972, Annotated, as amended. MSDH will also review applications for Certificate of Need according to the general criteria listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

In addition, comprehensive rehabilitation services are reviewable if the proposed provider has not provided such services on a regular basis within twelve (12) months prior to the time such services would be offered.

Need Criterion 1: Projected Need

a. New/Existing CRMR Beds/Services for Patients with TBI: shall be determined considering the current and projected population of the state as whole and the current and projected incidence of TBIs. The state as a whole shall be considered a planning area.

b. Projects which do Not Involve the Addition of any CRMR-TBI beds: The applicant shall document the need for the proposed project. Documentation may consist of, but is not necessarily limited to, citing of licensure or regulatory code deficiencies, institutional long-term plans (duly adopted by the governing board), recommendations made by consultant firms, and deficiencies cited by Accreditation Agencies (JCAHO, CAP).

c. Projects which Involve the Addition of Beds: The applicant shall document the need for the proposed project. MSDH may approve additional beds for facilities, which have maintained an occupancy rate of at least seventy percent (70%) for the most recent two (2) years.

Need Criterion 2: Federal/State Requirements
Applicants proposing to establish CRMR services for patients with TBI shall demonstrate the ability to meet all CMS and state licensure requirements.

Chapter 7 Other Health Services

Other ambulatory health services consist of primary, specialty, and supportive medical services provided on an outpatient basis, in contrast to services provided in the home or to persons who are inpatients. The term ambulatory care implies that patients must travel to a location outside the home to receive services that do not require an overnight hospital stay. This chapter describes several organizations which provide ambulatory care in Mississippi. In addition, this chapter discusses home health services in Mississippi.

700 Ambulatory Surgery Services

During FY 2016, the state's medical/surgical hospitals reported a total of 277,138 general surgical procedures. This number included 186,324 ambulatory surgeries, almost a 6.96 percent increase of the 174,198 ambulatory surgeries performed in hospitals during 2013. The percentage of surgeries performed on an outpatient basis in hospitals has risen from 63.4 percent in 2013 to 67.2 percent in 2016. Table 7-1 displays hospital affiliated surgery data by general hospital service area.

Mississippi licenses 19 freestanding ambulatory surgery facilities. Table 7-2 shows the distribution of facilities and related ambulatory surgery data. The 19 facilities reported 85,842 procedures during fiscal year 2016. Total outpatient surgeries (hospitals and freestanding facilities combined) comprised 99.05 percent of all surgeries performed in the state. The number of procedures performed in freestanding facilities was 30.97 percent of total surgeries in 2016.

Table 7-1
Selected Hospital Affiliated Ambulatory Surgery Data by General Hospital Service Area
FY 2016

General Hospital Service Area	Total Number of Surgeries	Number of Ambulatory Surgeries	Ambulatory Surgeries / Total Surgeries (Percentage)	Number of Operating Rooms / Suites	Average Number of Surgical Procedures per Day / Suite
Mississippi	**277,138**	**186,324**	**67.2**	**467**	**2.37**
1	7,810	4,751	60.8	19	1.64
2	32,386	20,805	64.2	46	2.82
3	18,887	14,483	76.7	31	2.44
4	24,964	17,536	70.2	44	2.27
5	88,863	57,891	65.1	153	2.32
6	22,442	16,367	72.9	40	2.24
7	17,680	16,317	92.3	35	2.02
8	23,617	14,472	61.3	43	2.20
9	40,489	23,702	58.5	56	2.89

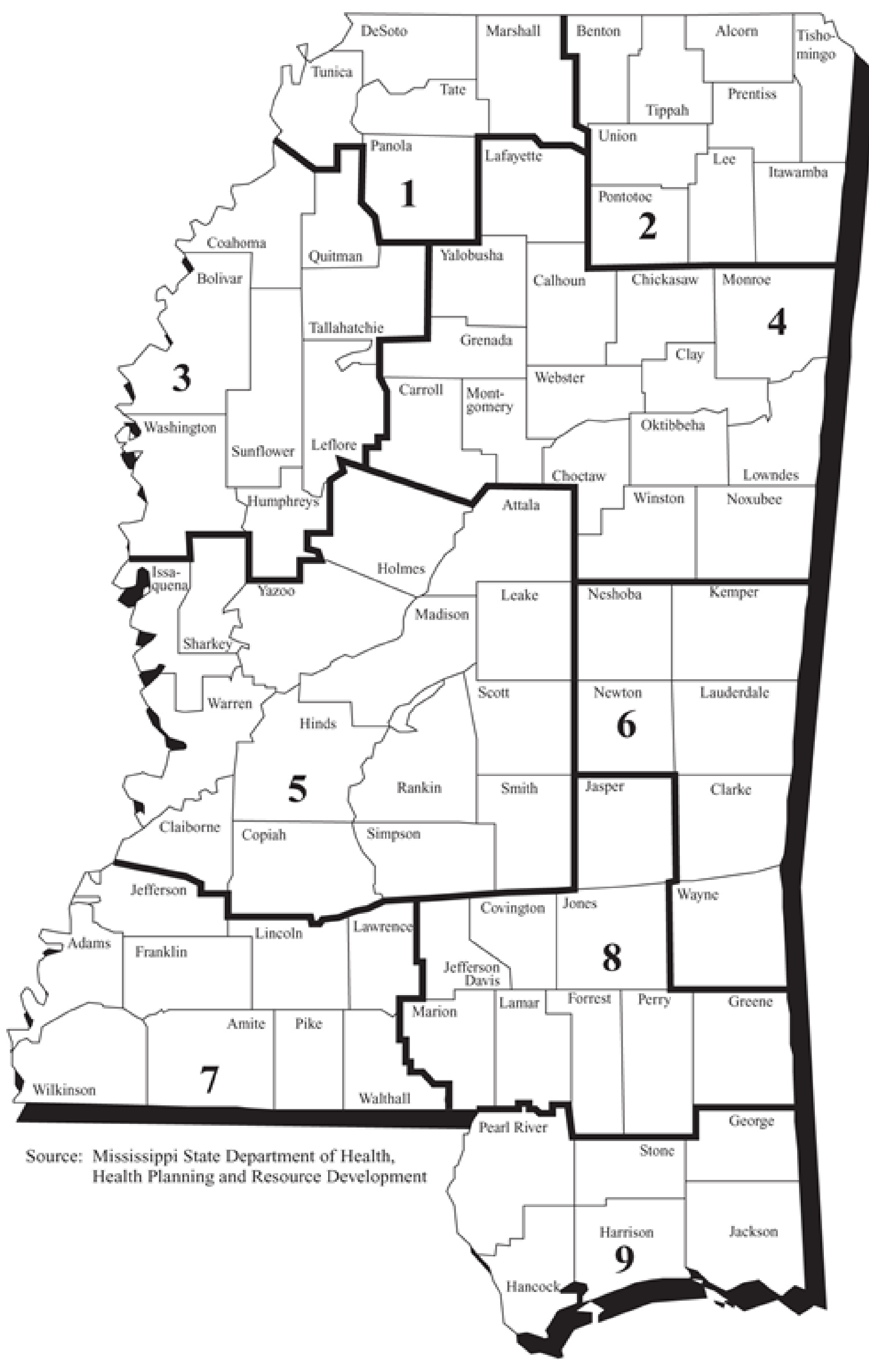
Table 7-2
Selected Freestanding Ambulatory Surgery Data by County
FY 2016

Ambulatory Surgery Planning Area (ASPAs)	County	Number of Freestanding Ambulatory Surgery Centers	Number of Ambulatory Surgeries Performed	Number of Operating Rooms/Suites	Number of Surgical Procedures Per Day/O.R. Suite
	Mississippi	**19**	**85,842**	**77**	**4.46**
1	DeSoto	1	2,165	3	2.89
2	Lee	1	7,883	8	3.94
4	Lafayette	1	3,609	4	3.61
5	Hinds	3	23,415	13	7.20
5	Rankin	2	11,973	10	4.79
6	Lauderdale	1	4,345	3	5.79
8	Forrest	4	19,907	16	4.98
8	Jones	1	1,603	4	1.60
9	Harrison	2	5,299	7	3.03
9	Jackson	3	5,643	9	2.51

Based on 250 working days per year

Source: Survey of individual ambulatory surgery centers conducted April 2018; Division of Health Planning and Resource Development, Mississippi State Department of Health

Map 7-1
Ambulatory Surgery Planning Areas



701 Certificate of Need Criteria and Standards for Ambulatory Surgery Services

Should MSDH receive a CON application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until MSDH has developed and adopted CON criteria and standards. If MSDH has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of MSDH.

701.01 Policy Statement Regarding Certificate of Need Applications for Ambulatory Surgery Services

1. Ambulatory Surgery Planning Areas (ASPAs): MSDH shall use the Ambulatory Surgery Planning Areas as outlined on Map 7-1 of this Plan for planning and CON decisions. The need for ambulatory surgery facilities in any given ASPA shall be calculated independently of all other ASPAs.

2. Ambulatory Surgery Facility Service Areas: An applicant's Ambulatory Surgery Facility Service Area must have a population base of approximately 60,000 within thirty (30) minutes normal driving time or twenty-five (25) miles, whichever is greater, of the proposed/established facility. Note: Licensure standards require a freestanding facility to be within fifteen (15) minutes traveling time of an acute care hospital and a transfer agreement with said hospital must be in place before a CON may be issued. Additionally, the ambulatory surgery facility service area must have a stable or increasing population.

3. Definitions: The Glossary of this Plan includes the definitions in the state statute regarding ambulatory surgery services.

4. Surgeries Offered: MSDH shall not approve single service ambulatory surgery centers. Only multi-specialty ambulatory surgery center proposals may be approved for a CON.

5. Minimum Surgical Operations: The minimum of 1,000 surgeries required to determine need is based on five (5) surgeries per operating room per day x five (5) days per week x fifty (50) weeks per year x eighty percent (80%) utilization rate.

6. Present Utilization of Ambulatory Surgery Services: MSDH shall consider the utilization of existing services and the presence of valid CONs for services within a given ASPA when reviewing CON applications.

7. Optimum Capacity: The optimum capacity of an ambulatory surgery facility is 800 surgeries per operating room per year. MSDH shall not issue a CON for the establishment or expansion of an additional facility (ies) unless the existing facilities within the ASPA have performed in aggregate at least 800 surgeries per operating room per year for the most recent twelve (12) month reporting period, as reflected in data supplied to and/or verified by MSDH. MSDH may collect additional information it deems essential to render a decision regarding any application. Optimum capacity is based on four (4) surgeries per operating room per day x five (5) days per week x fifty (50) weeks per year x eighty-percent (80%) utilization rate.

8. Conversion of Existing Service: Applications proposing the conversion of existing inpatient capacity to hospital affiliated ambulatory surgical facilities located within the hospital shall receive approval preference over detached or freestanding ambulatory surgical facilities if the applicant can show that such conversion is less costly than new construction and if the application substantially meets other adopted criteria.

9. Construction/Expansion of Facility: Any applicant proposing to construct a new facility or major renovation to provide ambulatory surgery must propose to build/renovate no fewer than two (2) operating rooms.

10. Indigent/Charity Care: The applicant shall be required to provide a "reasonable amount" of indigent/charity care as described in Chapter 1 of this Plan.

701.02 Certificate of Need Criteria and Standards for Ambulatory Surgery Services

MSDH will review applications for a CON for new ambulatory surgery facilities, as defined in Mississippi law, under the statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972 Annotated, as amended. MSDH will also review applications submitted for CON in accordance with the rules and regulations in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

Ambulatory surgery services require CON review when the establishment or expansion of the services involves a capital expenditure in excess of $2,000,000. In addition, the offering of ambulatory surgery services is reviewable if the proposed provider has not provided those services on a regular basis within twelve (12) months prior to the time such services would be offered, regardless of the capital expenditure.

Need Criteria 1: **Minimum Surgeries**
The applicant shall demonstrate that the proposed ambulatory surgery facility shall perform a minimum average of 1,000 surgeries per operating room per year.

Need Criteria 2: Minimum Population
The applicant must document that the proposed Ambulatory Surgery Facility Service Area has a population base of approximately 60,000 within 30 minutes travel time.

Need Criteria 3: Present Utilization of Ambulatory Surgery Services
The applicant proposing to offer ambulatory surgery services shall document that the existing facilities in the ambulatory surgery planning area have been utilized for a minimum of 800 surgeries per operating room per year for the most recent twelve (12) month reporting period as reflected in data supplied to and/or verified by MSDH. MSDH may collect additional information it deems essential to render a decision regarding any application.

Need Criteria 4: Affirmation of Provision of Surgical Services
The applicant must affirm that the proposed program shall provide a full range of surgical services in general surgery.

Need Criteria 5: Financial Feasibility
The applicant must provide documentation that the facility will be economically viable within two (2) years of initiation.

Need Criteria 6: Letters of Support
The proposed facility must show support from the local physicians who will be expected to utilize the facility.

Need Criteria 7: Staffing Requirements
Medical staff of the facility must live within a twenty-five (25) mile radius of the facility.

Need Criteria 8: Transfer Agreements/Follow-Up Services
The proposed facility must have a formal agreement with a full service hospital to provide services which are required beyond the scope of the ambulatory surgical facility's programs. The facility must also have a formal process for providing follow-up services to the patients (e.g., home health care, outpatient services) through proper coordination mechanisms.

Need Criteria 9: Indigent/Charity Care
The applicant shall affirm that the applicant will provide a "reasonable amount" of indigent/charity care by stating the amount of indigent/charity care the applicant intends to provide.

702 Home Health Care

Mississippi licensure regulations define a home health agency as: a public or privately owned agency or organization, or a subdivision of such an agency or organization, properly authorized to conduct business in Mississippi, which is primarily engaged in providing to individuals at the written direction of a licensed physician, in the individual's place of residence, skilled nursing services provided by or under the supervision of a registered nurse licensed to practice in Mississippi, and one or more of the following additional services or items:

1. Physical, occupational, or speech therapy
2. Medical social services
3. Home health aide services
4. Other services as approved by the licensing agency
5. Medical supplies, other than drugs and biologicals, and the use of medical appliances; or
6. Medical services provided by a resident in training at a hospital under a teaching program of such hospital."

All skilled nursing services and the services listed in items 1 through 4 must be provided directly by the licensed home health agency. For the purposes of this *Plan*, "directly" means either through an agency employee or by an arrangement with another individual not defined as a health care facility in Section 41-7-173 (h), Mississippi Code 1972, as amended. The requirements of this paragraph do not apply to health care facilities which had contracts for the above services with a home health agency on January 1, 1990.

702.01 Home Health Status

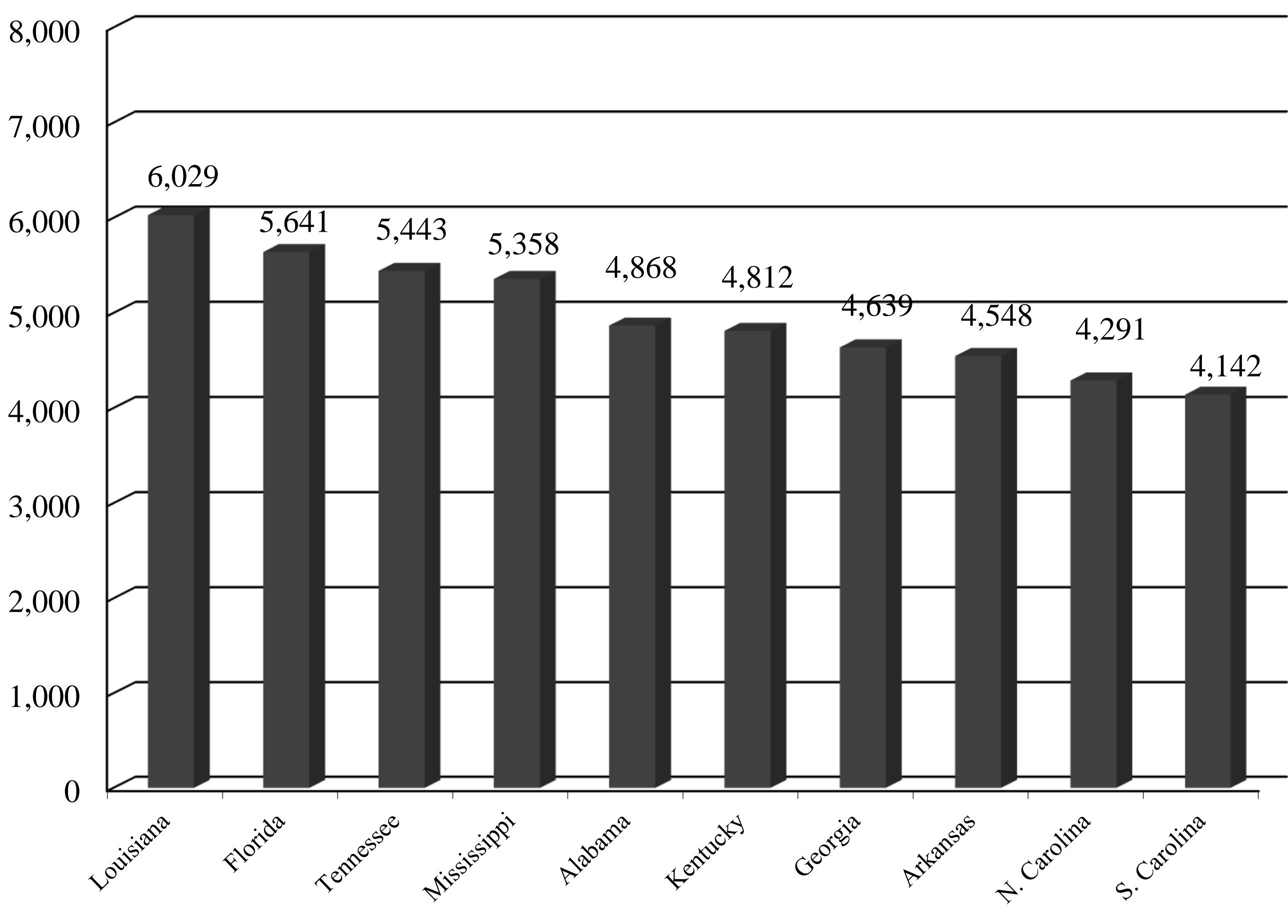
The 2016 *Report on Home Health Agencies* (the latest available) indicated that 56,051 Mississippians received home health services during the year. The reported noted there were 2,024,397 home health care visits made in 2016 in Mississippi. Each patient (all payor sources) received an average of thirty-four (34) visits.

Table 7-3
Medicare Home Health Statistics
in the Ten-State Region
January 1, 2016 – December 31, 2016

	2016 Total Home Health Visits	Total Home Health Claims	Total Home Health Payments	Total Home Health Patients	Average Home Health Payment per Patient	Average Visits per Patient
Region Total	**31,749,241**	**1,837,640**	**$4,867,820,107**	**945,751**	**$5,147**	**34**
Alabama	2,593,834	152,665	361,674,479	74,299	$4,868	35
Arkansas	1,225,853	71,340	168,094,540	36,963	$4,548	33
Florida	12,150,926	611,951	1,855,186,730	328,895	$5,641	37
Georgia	2,383,617	147,280	392,174,285	84,532	$4,639	28
Kentucky	1,798,752	112,715	278,384,370	57,858	$4,812	31
Louisiana	2,925,397	185,354	406,847,630	67,485	$6,029	43
Mississippi	**2,024,397**	**133,948**	**300,330,665**	**56,051**	**$5,358**	**36**
North Carolina	2,654,532	174,679	457,761,772	106,679	$4,291	25
South Carolina	1,418,020	93,116	243,526,027	58,798	$4,142	24
Tennessee	2,573,913	154,592	403,839,609	74,191	$5,443	35

Source: Palmetto GBA – Medicare Statistical Analysis Department, HCIS (Health Care Information System), December 2017

Figure 7-1
Medicare - Average Home Health Payments



Source: Palmetto GBA – Medicare Statistical Analysis Department, HCIS (Health Care Information System), December 2017

703 Certificate of Need Criteria and Standards for Home Health Agencies/Services

Should MSDH_receive a CON application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until MSDH_has developed and adopted CON criteria and standards. If MSDH has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of MSDH.

703.01 Policy Statement Regarding Certificate of Need Applications for the Establishment of a Home Health Agency and/or the Offering of Home Health Services

1. Service Areas: The need for home health agencies/services shall be determined on a county-by county basis.

2. Determination of Need: A possible need for home health services may exist in a county if for the most recent calendar year available that county had fewer home health care visits per 1,000 elderly (65+) population than the average number of visits received per 1,000 elderly (65+) in the "ten-state region" consisting of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. That number is currently 31,794,241 as shown in Table 7-3 (2016 is the most recent data available).

3. Unmet Need: If it is determined that an unmet need exists in a given county, the unmet need must be equivalent to fifty (50) patients in each county proposed to be served. Based on 2016 data 31,749,241 visits approximates a Region Total of thirty four (34) visits per patient.

4. All CON applications for the establishment of a home health agency and/or the offering of home health services shall be considered substantive and will be reviewed accordingly.

703.02 Certificate of Need Criteria and Standards for the Establishment of a Home Health Agency and/or the Offering of Home Health Services

If the present moratorium were removed or partially lifted, MSDH would review applications for a CON for the establishment of a home health agency and/or the offering of home health services under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications submitted for CON according to the general criteria as listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

The development or otherwise establishment of a home health agency requires CON. The offering of home health services is reviewable if the proposed provider has not provided those services on a regular basis within the period of twelve (12) months prior to the time such services would be offered.

Need Criteria 1: Establishment of Need

The applicant shall document that a possible need for home health services exists in each county proposed to be served using the methodology contained in this section of the *Plan*.

Need Criteria 2: Home Health Service Area Boundaries
The applicant shall state the boundaries of the proposed home health service area in the application.

Need Criteria 3: Unmet Need
The applicant shall document that each county proposed to be served has an unmet need equal to fifty (50) patients, using a ratio of 31,749,241 patient total home health visits equals approximately 34 average visits per patient.

Need Criteria 4: Home Office of New Home Health Agency
The applicant shall document that the home office of a new home health agency shall be located in a county included in the approved service area of the new agency. An existing agency receiving CON approval for the expansion of services may establish a sub-unit or branch office if such meets all licensing requirements of the Division of Licensure.

Need Criteria 5: Application Requirements
The application shall document the following for each county to be served:

a. Letters of intent from physicians who will utilize the proposed services.

b. Information indicating the types of cases physicians would refer to the proposed agency and the projected number of cases by category expected to be served each month for the initial year of operation.

c. Information from physicians who will utilize the proposed service indicating the number and type of referrals to existing agencies over the previous twelve (12) months.

d. Evidence that patients or providers in the area proposed to be served have attempted to find services and have not been able to secure such services.

e. Projected operating statements for the first three years, including:

   i. Total cost per licensed unit;

   ii. Average cost per visit by category of visit; and

   iii. Average cost per patient based on the average number of visits per patient.

Need Criteria 6: Difference in Existing Services Already Provided
Information concerning whether proposed agencies would provide services different from those available from existing agencies.

703.03 Statistical Need Methodology for Home Health Services

The methodology used to calculate the average number of visits per 1,000 elderly (65+) in the ten state region consist of the following:

1. The ten-state region consists of Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee.

2. The 2023 projected population aged 65 and older estimates from each state.

3. Table 7-3 showing the average number of Medicare paid home health visits for the ten-state region, according to 2016 data from Palmetto GBA - Medicare Statistical Analysis Department of the Centers for Medicare and Medicaid Services. Figure 7-1 shows the total number of Medicare paid home health payments in the ten-state region.

4. In 2016, the region average of home health visits was 31,749,241. An average patient in the region received thirty-four (34) home health visits. Therefore 31,749,241, visits equal 34 patients. Note: The Mississippi average for 2016 was 2,024,397 visits (Medicare reimbursed) and an averaged patient received thirty-six (36) visits.

704 End Stage Renal Disease

End stage renal disease (ESRD) describes the loss of kidney function from chronic renal failure to the extent that the remaining kidney function will no longer sustain life. The kidney's function of filtering waste products from the blood and removing fluid and salts from the body is essential for life; consequently, if untreated, end stage renal disease results in death.

ESRD treatment generally consists of either a kidney transplant or dialysis. Dialysis treatment consists of either peritoneal dialysis or hemodialysis. Peritoneal dialysis, uses a dialyzing fluid which is placed in the abdominal cavity through a plastic tube (catheter), and waste products (fluid and salts) exchange across the peritoneal membrane between the patient's blood and the dialyzing fluid. Hemodialysis is the process by which an artificial kidney machine "washes" metabolic waste products from the bloodstream and removes fluids and salts.

Both hemodialysis and peritoneal dialysis mimic the function normally performed by the kidney. Dialysis can be done by the patient and an assistant in the home, in a facility, or by professional staff in a hospital or limited care facility. Mississippi has 74 ESRD facilities and 10 Satellite ESRD facilities providing maintenance dialysis services as of FY 2018 Map 7-1 shows the facility locations and Table 7-4 shows the number of existing and CON approved ESRD facilities by county.

Kidney transplantation is the treatment of choice for most patients with end stage renal failure. Unfortunately, suitable kidneys will probably never be available in the number that would be required to treat everyone with this mode of therapy. In kidney transplantation, a healthy kidney is removed from a donor and placed into an ESRD patient. Donors for kidney transplantation may come either from a close relative, such as a sibling or parent, or from an emotionally connected donor, such as a spouse or close associate. Kidneys may also be obtained from cadaver donors who have the closest matching tissue type. Living donors are preferred because they function longer than cadaver kidneys – thirty (30) years for a living donor versus fifteen (15) years for a cadaver kidney.

The University of Mississippi Medical Center, the only kidney transplant program in the state, performed 103 cadaver and zero living-donor transplants during the calendar year 2013. It is certified by membership in the United Network of Organ Sharing, a private agency under contract from the Health Care Financing Administration. Transplant results are comparable to those with transplant programs with similar population basis and can be viewed on the Internet under www.ustransplants.org. Approximately, 100 additional transplants in Mississippi residents are performed in neighboring states.

Table 7-4
Number of Existing and CON Approved ESRD Facilities by County

ESRD Facilities by County	Number of Certified and CON Approved Stations
Adams	**31**
RCG of Natchez	31
Alcorn	**22**
RCG of Corinth	22
Attala	**20**
FMC Kosciusko	20
Bolivar	**32**
Fresenius Kidney Care	32
Claiborne	**10**
Fresenius Kidney Care - Port Gibson	10
Clarke	**13**
Pachuta Dialysis Unit	13
Clay	**14**
FMC- West Point	14
Coahoma	**40**
RCG of Clarksdale	40
Copiah	**30**
BMA Hazlehurst	13
Hazelhurst Dialysis	17
Covington	**23**
Collins Dialysis Unit	23
DeSoto	**49**
Fresenius Kidney Care*	49
Forrest	**60**
Hattiesburg Dialysis Unit	60
George	**16**
Lucedale Dialysis	16
Grenada	**28**
RCG of Grenada	28
Hancock	**20**
FMC- South Miss Kidney Center - Diamondhead (Bay St. Louis)	20

FY 2018 Annual ESRD Dialysis Utilization Survey Conducted May 2018

*Satellite ESRD Facility

Table 7-4 (continued)
Number of Existing and CON Approved ESRD Facilities by County

ESRD Facilities by County	Number of Certified and CON Approved Stations
Harrison	**101**
FMC-South Miss Kidney Center - Biloxi	19
FMC-South Miss Kidney Center - Gulfport	20
FMC-South Miss Kidney Center - Orange Grove	30
FMC-South Miss Kidney Center - D'Iberville	12
FMC-South Miss Kidney Center - North Gulfport	20
Hinds	**252**
FMC- Jackson*	38
FMC- Mid Mississippi*	12
FMC Southwest Jackson	33
FMC - West Hinds County *	14
Davita Jackson North	46
Davita Jackson South	28
Davita Jackson Southwest	18
University MS Medical Center Outpatient Hemodialysis	40
University MS Medical Center Pediatric Nephrology Facility	23
Holmes	**22**
Davita Renal Care of Lexington	22
Humphreys	**9**
RCG of Belzoni	9
Itawamba	**13**
Davita Itawamba County Dialysis	13
Jackson	**45**
Davita Ocean Springs Dialysis	17
Davita Singing River Dialysis	28
Jasper	**21**
Bay Springs Dialysis Unit - Bay Springs	21
Jones	**38**
Laurel Dialysis Unit	38
Kemper	**10**
FMC-Kemper County	10
Lafayette	**28**
RCG Oxford	28
Lamar	**14**
West Hattiesburg Clinic Dialysis*	14
Lauderdale	**75**
Fresenius Kidney Care- Meridian	65
FMC- Lauderdale County*	10
Lawrence	**18**
Silver Creek Dialysis Unit	18
Leake	**15**
RCG- Carthage	15

FY 2018 Annual ESRD Dialysis Utilization Survey Conducted May 2018

*Satellite ESRD Facility

Table 7-4 (continued)
Number of Existing and CON Approved ESRD Facilities by County

ESRD Facilities by County	Number of Certified and CON Approved Stations
Lee	**60**
RCG of Tupelo	50
Lee County Dialysis*	10
Leflore	**34**
RCG of Greenwood	34
Lincoln	**32**
RCG of Brookhaven	32
Lowndes	**49**
RCG of Columbus	35
FMC - Lowndes*	14
Madison	**40**
FMC Canton	18
Canton Renal Center	22
Marion	**30**
Columbia Dialysis Unit	30
Marshall	**20**
RCG of Holly Springs	20
Monroe	**32**
RCG of Aberdeen	32
Montgomery	**15**
RCG of Winona	15
Neshoba	**53**
Fresenius Kidney Care - Pearl River	39
Fresenius Kidney Care- Neshoba County	14
Newton	**16**
FMC- Newton	16
Noxubee	**21**
RCG of Macon	21
Oktibbeha	**25**
RCG of Starkville	25
Panola	**30**
RCG of Sardis	30
Pearl River	**20**
Picayune Dialysis Unit	20

FY 2018 Annual ESRD Dialysis Utilization Survey Conducted May 2018

*Satellite ESRD Facility

Table 7-4 (continued)
Number of Existing and CON Approved ESRD Facilities by County

ESRD Facilities by County	Number of Certified and CON Approved Stations
Perry	**20**
Richton Dialysis Unit	20
Pike	**32**
RCG of McComb	32
Rankin	**59**
Fresenius Kidney Care-Rankin County	35
Davita Brandon	24
Scott	**18**
FMC - Forest	18
Sharkey	**13**
FMC-Rolling Fork	13
Simpson	**18**
FMC - Magee	18
Stone	**12**
Wiggins Dialysis Unit	12
Sunflower	**21**
RCG of Indianola	21
Tate	**10**
RCG- Senatobia	10
Tunica	**24**
RCG- Tunica*	24
Union	**25**
Fresenius Kidney Care- Central New Albany*	25
Walthall	**21**
Tylertown Dialysis Unit	21
Warren	**21**
Fresenius Kidney Care	21
Washington	**52**
Mid-Delta Kidney Center	9
Fresenius Kidney Care- Greenville	43
Wayne	**19**
Waynesboro Renal Dialysis Unit	19
Webster	**14**
RCG of Europa	14
Wilkinson	**17**
RCG of Centerville	17
Winston	**17**
RCG of Louisville	17
Yazoo	**21**
FMC Yazoo City	21
State Total	**1,980**

FY 2018 Annual ESRD Dialysis Utilization Survey Conducted May 2018

*Satellite ESRD Facility

Map 7-2
End Stage Renal Disease Facilities

Existing Facility
CON Approved

DeSoto
Marshall
Benton
Alcorn
Tishomingo
Tunica
Tate
Tippah
Prentiss
Union
Panola
Lafayette
Lee
Itawamba
Pontotoc
Coahoma
Quitman
Yalobusha
Calhoun
Bolivar
Chickasaw
Monroe
Tallahatchie
Grenada
Clay
Webster
Carroll
Montgomery
Washington
Oktibbeha
Sunflower
Leflore
Lowndes
Choctaw
Attala
Winston
Noxubee
Humphreys
Holmes
Issaquena
Yazoo
Leake
Neshoba
Kemper
Madison
Sharkey
Scott
Newton
Lauderdale
Warren
Hinds
Rankin
Smith
Jasper
Clarke
Claiborne
Copiah
Simpson
Jefferson
Covington
Jones
Wayne
Lincoln
Lawrence
Adams
Franklin
Jefferson Davis
Lamar
Forrest
Perry
Greene
Marion
Amite
Pike
Wilkinson
Walthall
Pearl River
George
Stone
Harrison
Jackson
Hancock

Source: Mississippi State Department of Health, Division of Health Facilities Licensure and Certification, May 2014.

704 Certificate of Need Criteria and Standards for End Stage Renal Disease Facilities

MSDH receive a CON application regarding the acquisition and/or otherwise control of major medical equipment or the provision of a service for which specific CON criteria and standards have not been adopted, the application shall be deferred until MSDH has developed and adopted CON criteria and standards. If MSDH has not developed CON criteria and standards within 180 days of receiving a CON application, the application will be reviewed using the general CON review criteria and standards presented in the *Mississippi Certificate of Need Review Manual* and all adopted rules, procedures, and plans of MSDH.

704.01 Policy Statement Regarding Certificate of Need Application for the Establishment of End Stage Renal Disease (ESRD) Facilities

1. Establishment of an ESRD Facility: The provision or proposed provision of maintenance dialysis services constitutes the establishment of an ESRD facility if the proposed provider has not provided those services on a regular basis within the period of twelve (12) months prior to the time such services would be offered.

2. Type of Review: CON applications for ESRD services shall be considered substantive as defined under the appropriate *Mississippi State Health Plan*.

3. ESRD Facility Service Area: An ESRD Facility Service Area is defined as the area within a thirty (30) mile radius of an existing or proposed ESRD facility. ESRD Facility Service Areas, including the Service Areas of existing facilities which overlap with the proposed Service Area, shall be used for planning purposes.

4. Utilization Definitions: These utilization definitions are based upon three (3) shifts per day six (6) days per week, or eighteen (18) shifts per week. Only equipment (peritoneal or hemodialysis) that requires staff assistance for dialysis and is in operation shall be counted in determining the utilization rate. Utilization of equipment in operation less than twelve (12) months shall be prorated for the period of time in actual use.

   a. Full Utilization: For planning and CON purposes, full (100 percent) utilization is defined as an average of 936 dialyses per station per year.

   b. Optimum Utilization: For planning and CON purposes, optimum (65 percent) utilization is defined as an average of 608 dialyses per station per year.

   c. Need Utilization: For planning and CON purposes, need (80 percent) utilization is defined as an average of 749 dialyses per station per year.

5. Outstanding CONs: ESRD facilities that have received CON approval but are not operational shall be considered to be operating at 50 percent, which is the minimum utilization rate for a facility the first year of operation.

6. Utilization Data: The Department may use any source of data, subject to verification by the Department, it deems appropriate to determine current utilization or projected utilization of services in existing or proposed ESRD facilities. The source of data may include, but is not limited to, Medicare Certification records maintained by the Division of Health Facilities

Licensure and Certification, ESRD Network #8 data, and Centers for Medicare and Medicaid Services (CMS) data.

7. Minimum Expected Utilization: It is anticipated that a new ESRD facility may not be able to reach optimum utilization (65 percent) of ten ESRD stations during the initial phase of operation. Therefore, for the purposes of CON approval, an application must demonstrate how the applicant can reasonably expect to have 50 percent utilization of a minimum of ten ESRD stations by the end of the first full year of operation and 65 percent utilization by the end of the third full year of operation.

8. Minimum Size Facility: No CON application for the establishment of a new ESRD facility shall be approved for less than ten (10) stations.

9. Expansion of Existing ESRD Facilities; Existing ESRD facilities may add ESRD stations as follows:

   a. An existing ESRD facility with a CMS star rating of 1 or 2, may add ESRD stations without certificate of need review as long as the facility does not add, over the period of one (1) year, more than four (4) stations.

   b. An existing ESRD facility with a CMS star rating of 3, may add ESRD stations without certificate of need review as long as the facility does not add, over the period of one (1) year, more than six (6) stations.

   c. An existing ESRD facility with a CMS star rating of 4 or 5, may add ESRD stations without certificate of need review, as long as the facility does not add, over the period of one (1) year, more than eight (8) stations.

   Note: An ESRD facility that has not yet been given a CMS star rating may add ESRD stations without certificate of need review as long as the facility does not add, over the period of one (1) year, more than four (4) stations.

10. Home Dialysis Programs: Each existing ESRD facility may establish or relocate a home dialysis program to any location within a 10-mile radius of the existing facility without certificate of need review; provided, however, that the facility shall submit an application for determination of non-reviewability prior to the establishment of the dialysis program. If such established or relocated home dialysis program is a freestanding program, the freestanding home dialysis program shall document that it has a back-up agreement for the provision of any necessary dialysis services with the existing ESRD facility. If an existing ESRD facility wants to create, either through establishment or relocation, more than two home dialysis program, the project shall be subject to CON review as the establishment of a new ESRD facility. Existing freestanding home dialysis programs may add home training stations as follows:

    a. An existing freestanding home dialysis facility with a CMS star rating of 1 or 2, may add home training stations without certificate of need review as long as the facility does not add, over the period of one (1) year, more than four (4) stations.

    b. An existing freestanding home dialysis facility with a CMS star rating of 3, may add home training stations without certificate of need review as long as the facility does not add, over the period of one (1) year, more than six (6) stations.

c. An existing ESRD facility with a CMS star rating of 4 or 5, may add home training stations without certificate of need review, as long as the facility does not add, over the period of one (1) year, more than eight (8) stations.

Note: An existing freestanding home dialysis facility that has not yet been given a CMS star rating may add home training stations without certificate of need review as long as the facility does not add, over the period of one (1) year, more than eight (8) stations.

11. Establishment of Satellite ESRD Facilities: Any existing ESRD facility which reaches a total of 30 ESRD stations, may establish a ten (10) station satellite facility. If a proposed satellite ESRD facility is to be located more than one (1) mile from the existing facility, a certificate of need must be obtained by the facility prior to the establishment of the satellite facility.

12. Non-Discrimination: An applicant shall affirm that within the scope of its available services, neither the facility nor its staff shall have policies or procedures which would exclude patients because of race, color, age, sex, or ethnicity.

13. Indigent/Charity Care: An applicant shall be required to provide a "reasonable amount" of indigent/charity care as described in Chapter 1 of this *Plan*.

14. Staffing: The facility must meet, at a minimum, the requirements and qualifications for staffing as contained in 42 CFR § 494.140. In addition, the facility must meet all staffing requirements and qualifications contained in the service specific criteria and standards.

15. Federal Definitions: The definitions contained in 42 CFR § 494.10 shall be used as necessary in conducting health planning and CON activities.

16. Affiliation with a Renal Transplant Center: ESRD facilities shall be required to enter into a written affiliation agreement with a renal transplant center.

704.02 Certificate of Need Criteria and Standards for End Stage Renal Disease (ESRD) Facilities

MSDH will review applications for a CON for the establishment of an ESRD facility under the applicable statutory requirements of Sections 41-7-173, 41-7-191, and 41-7-193, Mississippi Code of 1972, as amended. MSDH will also review applications for CON according to the general criteria as listed in the *Mississippi Certificate of Need Review Manual*; all adopted rules, procedures, and plans of MSDH; and the specific criteria and standards listed below.

When a provider proposes to offer ESRD services in an ESRD facility service area where he does not currently provide services or proposes to transfer an existing ESRD unit(s) from a current location into a different ESRD facility service area, it will constitute the establishment of a new ESRD health care facility. (Note: The transfer of dialysis stations from an existing ESRD facility to any other location is a relocation of a health care facility or portion thereof and requires CON review. Likewise, new dialysis stations placed into service at a site separate and distinct from an existing ESRD facility constitutes the establishment of a new health care facility and requires CON review. Dialysis stations placed into service in an individual patient's home or residence, solely for the treatment of the individual patient concerned, are exempt from this regulation.)

704.02.01 Establishment of an End Stage Renal Disease (ESRD) Facility

Need Criterion 1: For Establishment of New ESRD Facilities
An applicant proposing the establishment of a limited care renal dialysis facility or the relocation of a portion of an existing ESRD facility's dialysis stations to another location shall demonstrate, subject to verification by the Mississippi State Department of Health, that each individual existing ESRD facility in the proposed ESRD Facility Service Area has maintained a minimum annual utilization rate of eighty (80) percent**.**

Need Criterion 2: For Expansion of Existing ESRD Facilities

a. Expansion of Existing ESRD Facilities – Non-Satellite: In the event that an existing ESRD facility (that is not a satellite facility less than two (2) years in existence) proposes to add more stations than what is outlined in ESRD Policy Statement 9, then the facility must apply for a certificate of need, and shall document that it has maintained, or can project a minimum annual utilization rate of sixty-five percent (65%) for the 12 months prior to the month of the submission of the CON application. NOTE: ESRD Policy Statements 3 and Need Criteria 1, do not apply to applications for the expansion of existing ESRD facilities.

b. Expansion of Existing ESRD Facilities – Satellite: In the event that an existing ESRD facility (that is a satellite facility in operation two years or less), proposes to add more stations than what is outlined in ESRD Policy Statement 9, then the facility must apply for a certificate of need, and shall document that it has maintained or can project through, for example, but not necessarily limited to, patient support letters, the distance between the patient's residence or transportation source and the facility, and/or transportation or patient support concerns, a minimum annual utilization rate of sixty-five percent (65%). NOTE: ESRD Policy Statement 3 and Need Criteria 1 do not apply to applications for the expansion of existing ESRD facilities.

Need Criterion 3: For Establishment of ESRD Satellite Facilities
In order for a thirty (30) station ESRD facility to be approved for the establishment of a ten (10) station satellite facility through the transfer and relocation of existing stations within a five mile radius or less from the existing facility, the facility must (a) document that it has maintained a minimum annual utilization rate of fifty-five percent (55%) for the twelve (12) months prior to the month of the submission of the CON application; (b) justify the need for the project, which may include, but is not limited to, physical or space limitations at the existing facility; and (c) document that it is more cost effective to establish a satellite facility than to expand the existing facility. If the proposed satellite facility will be established at a location between a five and thirty (30) mile radius of the existing facility, the facility must (a) document that it has maintained a minimum annual utilization rate of fifty-five percent (55%) for the twelve (12) months prior to the month of the submission of the CON application; (b) justify the need for the project, which may include, but is not limited to, physical or space limitations at the existing facility; and (c) document that it is more cost effective to establish a satellite facility than to expand the existing facility; and (d) demonstrate that the proposed satellite facility's location is not within thirty miles of an existing facility without obtaining the existing facility's written support. NOTE: ESRD Policy Statements 2, 4, 5 and 6, and Need Criterion 1, do not apply to applications for the establishment of satellite ESRD facilities. An ESRD satellite facility established under this Need Criterion 3 shall not be used or considered for purposes of establishing or determining an ESRD Facility Service Area.

Need Criterion 4: Number of Stations
The applicant shall state the number of ESRD stations that are to be located in the proposed facility. No new facility shall be approved for less than ten (10) dialysis stations.

Need Criterion 5: Minimum Utilization
The application shall demonstrate that the applicant can reasonably expect to meet the minimum utilization requirements as stated in ESRD Policy Statement #10.

Need Criterion 6: Minimum Services
The application shall affirm that the facility will provide, at a minimum, social, dietetic, and rehabilitative services. Rehabilitative services may be provided on a referral basis.

Need Criterion 7: Access to Needed Services
The application shall affirm that the applicant will provide for reasonable access to equipment/facilities for such needs as vascular access and transfusions required by stable maintenance ESRD patients.

Need Criterion 8: Access to Needed Services
The application shall affirm that the applicant will provide for reasonable access to equipment/facilities for such needs as vascular access and transfusions required by stable maintenance ESRD patients.

Need Criterion 9: Home Training Program
The application shall affirm that the applicant will make a home training program available to those patients who are medically eligible and receptive to such a program. The application shall affirm that the applicant will counsel all patients on the availability of and eligibility requirements to enter the home/self-dialysis program.

Need Criterion 10: Indigent/Charity Care
The application shall affirm that the applicant will provide a "reasonable amount" of indigent/charity care. The application shall also state the amount of indigent/charity care the applicant intends to provide.

Need Criterion 11: Facility Staffing
The application shall describe the facility's staffing by category (i.e., registered nurse, technologist, technician, social worker, dietician) as follows:

a. Qualifications (minimum education and experience requirements)

b. Specific Duties

c. Full Time Equivalents (FTE) based upon expected utilization

Need Criterion 12: Staffing Qualifications
The applicant shall affirm that the staff of the facility will meet, at a minimum, all requirements and qualifications as stated in 42 CFR, Subpart D § 494.140.

Need Criterion 13: Staffing Time

a. The applicant shall affirm that when the unit is in operation, at least one (1) R.N. will be on duty. There shall be a minimum of two (2) persons for each dialysis shift, one of whom must be an R.N.

b. The applicant shall affirm that the medical director or a designated physician will be on-site or on-call at all times when the unit is in operation. It is desirable to have one other physician to supplement the services of the medical director.

c. The applicant shall affirm that when the unit is not in operation, the medical director or designated physician and a registered nurse will be on-call.

Need Criterion 14: Data Collection
The application shall affirm that the applicant will record and maintain, at a minimum, the following utilization data and make this data available to the Mississippi State Department of Health as required. The time frame for the submission of the utilization data shall be established by the Department.

a. Utilization data, e.g., days of operation, shifts, inventory and classification of all stations, number of patients in dialysis, transplanted, or expired.

b. The number of charity/indigent patients (as defined in this *Plan*) served by the facility and the number of dialysis procedures provided to these patients free of charge or at a specified reduced rate.

Need Criterion 15: Staff Training
The application shall affirm that the applicant will provide an ongoing program of training in dialysis techniques for nurses and technicians at the facility.

Need Criterion 16: Scope of Privileges
The applicant shall affirm that the facility shall provide access to doctors of medicine or osteopathic medicine licensed by the State of Mississippi who possess qualifications established by the governing body of the facility.

Need Criterion 17: Affiliation with a Renal Transplant Center
The applicant shall affirm that within one year of commencing operation the facility will enter into an affiliation agreement with a transplantation center. The written agreement shall describe the relationship between the transplantation facility and the ESRD facility and the specific services that the transplantation center will provide to patients of the ESRD facility. The agreement must include at least the following:

a. time frame for initial assessment and evaluation of patients for transplantation;

b. composition of the assessment/evaluation team at the transplant center;

c. method for periodic re-evaluation;

d. criteria by which a patient will be evaluated and periodically re-evaluated for transplantation; and

e. signatures of the duly authorized persons representing the facilities and the agency providing the services.

f. Furthermore, the application shall affirm that the applicant understands and agrees that failure to comply with this criterion may (after due process) result in revocation of the Certificate of Need.

704.02.02 Establishment of a Renal Transplant Center

Need Criterion 1:
The applicant shall document that the proposed renal transplant center will serve a minimum population of 3.5 million people.

Need Criterion 2:
The applicant shall document that the proposed facility will provide, at a minimum, the following:

a. medical-surgical specialty services required for the care of ESRD transplant patients;

b. acute dialysis services;

c. an organ procurement system;

d. an organ preservation program; and

e. a tissue typing laboratory.

Need Criterion 3:
The applicant shall document that the facility will perform a minimum of 25 transplants annually.

Glossary

Accessibility — a measure of the degree to which the health care delivery system inhibits or facilitates an individual's ability to receive services, including geographic, architectural, transportation, social, time, and financial considerations.

Ambulatory Surgery — surgical procedures that are more complex than office procedures performed under local anesthesia but less complex than major procedures requiring prolonged post-operative monitoring and hospital care to ensure safe recovery and desirable results. General anesthesia is used in most cases. The patient must arrive at the facility and expect to be discharged on the same day. Ambulatory surgery shall be performed only by physicians or dentists licensed to practice in the state of Mississippi.

Examples of procedures performed include, but are not limited to:

- Tonsillectomies and adenoidectomies
- Nasal polypectomy
- Submucosa resection
- Some cataract procedures
- Cosmetic procedures
- Breast biopsy
- Augmentation mammoplasty
- Hand surgery
- Cervical conization
- Laparoscopy and tubal sterilization
- Circumcision
- Urethral dilation
- Simple hernia repairs
- Stripping and ligation of varicose veins

Ambulatory Surgical Facility — a publicly or privately owned institution that is primarily organized, constructed, renovated, or otherwise established for the purpose of providing elective surgical treatment to outpatients whose recovery, under normal and routine circumstances, will not require inpatient care. Such facilities as herein defined do not include the offices of private physicians or dentists whether practicing individually or in groups, but does include organizations or facilities primarily engaged in such outpatient surgery, whether using the name "ambulatory surgical facility" or a similar or different name. Such organization or facility, if in any manner considered to be operated or owned by a hospital or a hospital holding, leasing, or management company, either for-profit or not-for-profit, is required to comply with all Mississippi State Department of Health ambulatory surgical licensure standards governing a hospital affiliated facility as adopted under Section 41-9-1 et seq., Mississippi Code of 1972, provided that such organization or facility does not intend to seek federal certification as an ambulatory surgical facility as provided for in 42 CFR, Parts 405 and 416. Further, if such organization or facility is to be operated or owned by a hospital or a

hospital holding, leasing, or management company and intends to seek federal certification as an ambulatory facility, then such facility is considered to be freestanding and must comply with all Mississippi State Department of Health ambulatory surgical licensure standards governing a freestanding facility. If such organization or facility is to be owned or operated by an entity or person other than a hospital or hospital holding, leasing, or management company, then such organization or facility must comply with all Mississippi State Department of Health ambulatory surgical facility standards governing a freestanding facility.

Bed Need Methodologies — quantitative approaches to determining present and future needs for inpatient beds.

Capital Improvements — costs other than construction which will yield benefits over a period of years. Examples of capital improvements are painting, refurbishing, and land improvements, such as improving driveways, fences, parking lots, and sprinkler systems.

Capitalized Interest — interest incurred during the construction period, which is included in debt borrowing.

Construction Formulas —

New Construction/Renovation

(Prorated Project):

$$\text{Cost/square foot} = \frac{A+C+D+(E+F+G(A\%^{*}))}{\text{New Const. Square Feet}}$$

$$\text{Cost/square foot} = \frac{B+(E+F+G(B\%))^{**}+H}{\text{Renov. Square Feet}}$$

New Construction

(No Renovation Involved):

$$\text{Cost/square foot} = \frac{A+C+D+E+F+G}{\text{Square Feet}}$$

Renovation

(No New Construction):

$$\text{Cost/square foot} = \frac{B+C+E+F+G+H}{\text{Square Feet}}$$

When:

A = New Construction
B = Renovation
C = Fixed Equipment
D = Site Preparation
E = Fees
F = Contingency
G = Capitalized Interest
H = Capital Improvement

*A% - refers to the percentage of square feet allocated to new construction.
**B% - refers to the percentage of square feet allocated to renovation.

Example: ABC Health Care's project for construction/renovation consists of 10,000 square feet of new construction and 9,000 square feet of renovation, for a total of 19,000 square feet.

$$A\% = \frac{10{,}000}{19{,}000} \text{ or } 53\%$$

$$B\% = \frac{9{,}000}{19{,}000} \text{ or } 47\%$$

Continuing Care Retirement Community — a comprehensive, cohesive living arrangement for the elderly which is offered under a contract that lasts for more than one year or for the life of the resident and describes the service obligations of the CCRC and the financial obligations of the resident. The contract must obligate the CCRC to provide, at a minimum, room, board, and nursing care to an individual not related by consanguinity or affinity to the provider furnishing such care. The contract explicitly provides for full lifetime nursing home care as required by the resident. The resident may be responsible for the payment of some portion of the costs of his/her nursing home care, and the CCRC sponsor is responsible for the remaining costs as expressly set forth in the contract. Depletion of the contractee's personal resources does not affect the contribution of the CCRC sponsor.

Conversion — a major or proportional change that a health care facility undertakes in its overall mission, such as the change from one licensure category to another, from one organizational tax status to another, or from one type of health care facility to another.

Cost Containment — maintaining control of expenses within the health care delivery system to prevent and reduce unnecessary spending.

Criteria — guidelines or pre-determined measurement characteristics on which judgment or comparison of need, appropriateness, or quality of health services may be made.

Distinct Part Skilled Nursing Unit- Medicare eligible certified units which are a "distinct part" (i.e. distinguishable from the larger institution and fiscally separate for cost reporting purposes) of an institution that is certified to provide Skilled Nursing Facility services as by the Centers for Medicare and Medicaid Services (CMS).

Existing Provider — an entity that has provided a service on a regular basis during the most recent 12-month period.

Facilities — collectively, all buildings constructed for the purpose of providing health care (including hospitals, nursing homes, clinics, or health centers, but not including physician offices); encompasses physical plant, equipment, and supplies used in providing health services.

Feasibility Study — a report prepared by the chief financial officer, CPA or an independent recognized firm of accountants demonstrating that the cash flow generated from the operation of the facility will be sufficient to complete the project being financed and to pay future annual debt service. The study includes the financial analyst's opinion of the ability of the facility to undertake the debt obligation and the probable effect of the expenditure on present and future operating costs.

Freestanding Ambulatory Surgical Facility — a separate and distinct facility or a separate and distinct organized unit of a hospital owned, leased, rented, or utilized by a hospital or other persons for the primary purpose of performing ambulatory surgery procedures. Such facility must be separately licensed as herein defined and must comply with all licensing standards promulgated by the Mississippi State Department of Health regarding a freestanding ambulatory surgical facility. Further, such facility must be a separate, identifiable entity and must be physically, administratively, and financially independent and distinct from other operations of any other health facility and shall maintain a separate organized medical and administrative staff. Furthermore, once licensed as a freestanding ambulatory surgical facility, such facility shall not become a component of any other health facility without securing a Certificate of Need to do so.

Group Home — a single dwelling unit whose primary function is to provide a homelike residential setting for a group of individuals, generally 8 to 20 persons, who neither live in their own home nor require institutionalization. Group homes are used as a vehicle for normalization.

Habilitation — the combined and coordinated use of medical, social, educational, and vocational measures for training individuals who are born with limited functional ability as contrasted with people who have lost abilities because of disease or injury.

Home Health Agency — certain services must be provided directly by a licensed home health agency and must include all skilled nursing services; physical, occupational, or speech therapy; medical social services; part-time or intermittent services of a home health aide; and other services as approved by the licensing agency for home health agencies. In this instance, "directly" means either through an agency employee or by an arrangement with another individual not defined as a health care facility.

Hospital Affiliated Ambulatory Surgical Facility — a separate and distinct organized unit of a hospital or a building owned, leased, rented, or utilized by a hospital and located in the same county in which the hospital is located for the primary purpose of performing ambulatory surgery procedures. Such facility is not required to be separately licensed and may operate under the hospital's license in compliance with all applicable requirements of Section 41-9-1 et seq.

Limited Care Renal Dialysis Facility — a health care facility which provides maintenance or chronic dialysis services on an ambulatory basis for stable ESRD patients. The limited care renal dialysis facility is considered a substitute for home dialysis to be used by patients who cannot dialyze at home. The facility provides follow-up and back-up services for home dialysis patients.

Magnetic Resonance Imaging (MRI) Scientist — a professional with similar skills and job qualifications as a medical physicist, who holds a comparable degree in an allied science, such as chemistry or engineering, and shows similar experience as the medical physicist with medical imaging and MRI imaging spectroscopy.

Market Share — historical data used to define a primary or secondary geographic service area, i.e. patient origin study, using counties, zip codes, census tracts.

Observation Bed — a licensed, acute care bed on the premise of a licensed, short-term, acute care facility. The hospital bed shall be used by a physician and/or nursing/medical staff to periodically monitor/evaluate a patient's medical condition. A bed that is occupied by a patient who is admitted to the hospital for a period of 23 hours and 59 minutes or ≤ (less than) 48 hours will be counted as an observation bed. Also, the status of a patient will be documented by a physician as an outpatient.

Observation Services — a well-defined set of specific, clinically appropriate services, which include ongoing short term treatment, assessment, and reassessment, that are furnished while a decision is being made regarding whether patients will require further treatment as hospital inpatients or if they are able to be discharged from the hospital. Observation services begin at the clock time documented in the patient's medical record, which coincides with the time that observation services are initiated in accordance with a physician's order for observation services. In most cases, a beneficiary (patient) may not remain in observation status for more than 24 or 48 hours. The hospital status of a patient will be documented as an outpatient until the physician writes an order to admit a person as an inpatient. Billing and coding of physician services are expected to be billed consistent with the patient's status as an outpatient or an inpatient.

General standing orders for observation services following all outpatient surgery are not recognized. Hospitals should not report postoperative monitoring during a standard recovery period (e.g., 4-6 hours) as observation care, services because those hours may be considered recovery room services.

Occupancy Rate — measure of average percentage of hospital beds occupied; determined by dividing available bed-days (bed capacity) by patient days actually used during a specified time period.
Outpatient Facility — a medical institution designed to provide a limited or full spectrum of health and medical services (including health education and maintenance services, preventive services, diagnosis, treatment, and rehabilitation) to individuals who do not require hospitalization or institutionalization.

Pediatric Skilled Nursing Facility — a pediatric skilled nursing facility is an institution or a distinct part of an institution that is primarily engaged in providing to inpatients skilled nursing care and related services for persons under 21 years of age who require medical, nursing care, or rehabilitation services for the rehabilitation of injured, disabled, or sick persons.

Policy Statement — a definite course of action selected in light of given conditions to guide and determine present and future decisions.

Positron Emission Tomography (PET) — a non-invasive imaging procedure in which positron-emitting radionuclides, that are produced either by a cyclotron or a radiopharmaceutical producing generator, and a nuclear camera are used to create pictures of organ function rather than structure. PET, therefore, has the potential for providing unique, clinically important information about disease processes. Key applications for PET are in coronary artery disease and myocardial infarction, epilepsy, cerebral gliomas, and dementia.

Radiation Therapy — the use of ionizing radiations for the treatment of tumors.

Renal Dialysis Center — a health care facility which provides dialysis services to hospital patients who require such services. The dialysis provided in a renal dialysis center functions primarily as a backup program for ESRD patients dialyzing at home or in a limited care facility who are placed in a hospital. A renal dialysis center may also serve as an initial dialysis setting for newly diagnosed ESRD patients who are in the hospital. A center may also provide acute dialysis services as needed.

Renal Transplant Center — a health care facility which provides direct transplant and other medical-surgical specialty services required for the care of the ESRD transplant patient. Services provided include, but are not limited to, acute renal dialysis, organ procurement system, organ preservation program, and tissue typing laboratory.

Standard — a quantitative level to be achieved regarding a particular criterion to represent acceptable performance as judged by the agency establishing the standard.

Therapeutic Radiation Services — therapeutic radiation treatments/procedures delivered through the use of a linear accelerator or 60Co teletherapy unit.

Therapeutic Radiation Unit/Equipment — a linear accelerator or 60Co teletherapy unit. This equipment is also commonly referred to as a "megavoltage therapeutic radiation unit/equipment."

Appendix: Nursing Home Bed Need

Table 2-2A
2023 Projected Nursing Home Bed Need

State of Mississippi												
Long-Term Care Planning District	Population 0 - 64	Bed Need (0.5/1,000)	Population 65 - 74	Bed Need (10/1,000)	Population 75 - 84	Bed Need (36/1,000)	Population 85+	Bed Need (135/1,000)	Total Bed Need	Beds in Abeyance	Licensed	Difference
District I	444,312	222	54,720	547	25,844	930	8,076	1,090	2,790	263	3,225	-698
District II	530,592	265	66,816	668	34,641	1,247	11,534	1,557	3,738	48	4,027	-337
District III	729,593	365	90,826	908	41,638	1,499	14,261	1,925	4,697	227	4,928	-458
District IV	898,269	449	114,375	1,144	55,403	1,995	17,245	2,328	5,915	328	6,124	-537
State Total	**2,602,766**	**1,301**	**326,737**	**3,267**	**157,526**	**5,671**	**51,116**	**6,901**	**17,140**	**866**	**18,304**	**-2,030**

Table 2-2A (continued)
2023 Projected Nursing Home Bed Need

District I												
County	Population 0 - 64	Bed Need (0.5/1,000)	Population 65 - 74	Bed Need (10/1,000)	Population 75 - 84	Bed Need (36/1,000)	Population 85+	Bed Need (135/1,000)	Total Bed Need	# Beds in Abeyance	Licensed	Difference
Attala	15,122	8	2,351	24	1,216	44	458	62	137	0	120	17
Bolivar	22,632	11	3,463	35	1,462	53	447	60	159	60	350	-251
Carroll	7,541	4	1,532	15	826	30	213	29	78	0	60	18
Coahoma	22,673	11	2,452	25	1,181	43	428	58	136	30	178	-72
DeSoto	153,028	77	15,307	153	7,853	283	2,278	308	820	0	320	500
Grenada	16,051	8	2,597	26	1,201	43	381	51	129	10	247	-128
Holmes	14,131	7	1,848	18	769	28	273	37	90	8	148	-66
Humphreys	7,472	4	902	9	413	15	142	19	47	0	60	-13
Leflore	22,839	11	2,844	28	1,177	42	476	64	146	62	370	-286
Montgomery	7,293	4	1,381	14	630	23	222	30	70	0	120	-50
Panola	30,020	15	3,656	37	1,868	67	601	81	200	0	190	10
Quitman	6,616	3	879	9	448	16	151	20	49	0	60	-11
Sunflower	23,378	12	2,796	28	1,185	43	398	54	136	0	246	-110
Tallahatchie	14,799	7	1,365	14	624	22	190	26	69	21	98	-50
Tate	27,604	14	3,659	37	1,697	61	437	59	170	14	120	36
Tunica	10,363	5	1,065	11	440	16	117	16	47	0	60	-13
Washington	33,368	17	4,952	50	2,040	73	639	86	226	58	356	-188
Yalobusha	9,382	5	1,671	17	814	29	225	30	81	0	122	-41
District Total	**444,312**	**222**	**54,720**	**547**	**25,844**	**930**	**8,076**	**1,090**	**2,790**	**263**	**3,225**	**-698**

Table 2-2A (continued)
2023 Projected Nursing Home Bed Need

District II												
County	Population 0 - 64	Bed Need (0.5/1,000)	Population 65 - 74	Bed Need (10/1,000)	Population 75 - 84	Bed Need (36/1,000)	Population 85+	Bed Need (135/1,000)	Total Bed Need	# Beds in Abeyance	Licensed	Difference
Alcorn	31,857	16	4,452	45	2,515	91	729	98	249	0	264	-15
Benton	7,708	4	1,112	11	534	19	173	23	58	0	60	-2
Calhoun	11,776	6	1,813	18	943	34	300	41	98	0	155	-57
Chickasaw	12,264	6	1,813	18	901	32	279	38	94	0	139	-45
Choctaw	5,420	3	1,094	11	553	20	179	24	58	13	60	-15
Clay	14,895	7	2,531	25	1,144	41	413	56	130	20	160	-50
Itawamba	19,221	10	2,571	26	1,479	53	470	63	152	0	196	-44
Lafayette	51,625	26	4,821	48	2,391	86	828	112	272	0	180	92
Lee	75,871	38	8,964	90	4,818	173	1,666	225	526	0	487	39
Lowndes	51,375	26	6,253	63	3,171	114	1,099	148	351	0	380	-29
Marshall	32,484	16	4,554	46	1,976	71	638	86	219	0	180	39
Monroe	29,733	15	4,118	41	2,392	86	816	110	252	0	332	-80
Noxubee	9,628	5	1,210	12	568	20	214	29	66	0	60	6
Oktibbeha	45,075	23	3,824	38	1,885	68	667	90	219	0	179	40
Pontotoc	28,884	14	3,383	34	1,587	57	546	74	179	0	164	15
Prentiss	20,806	10	2,680	27	1,617	58	559	75	171	0	144	27
Tippah	19,481	10	2,605	26	1,368	49	354	48	133	0	240	-107
Tishomingo	15,374	8	2,496	25	1,396	50	436	59	142	15	178	-51
Union	23,759	12	3,130	31	1,585	57	546	74	174	0	180	-6
Webster	8,293	4	1,217	12	621	22	168	23	61	0	155	-94
Winston	15,063	8	2,175	22	1,197	43	454	61	134	0	134	0
District Total	**530,592**	**265**	**66,816**	**668**	**34,641**	**1,247**	**11,534**	**1,557**	**3,738**	**48**	**4,027**	**-337**

Table 2-2A (continued)
2023 Projected Nursing Home Bed Need

District III												
County	**Population 0 - 64**	**Bed Need (0.5/1,000)**	**Population 65 - 74**	**Bed Need (10/1,000)**	**Population 75 - 84**	**Bed Need (36/1,000)**	**Population 85+**	**Bed Need (135/1,000)**	**Total Bed Need**	**# Beds in Abeyance**	**Licensed**	**Difference**
Adams	23,788	12	3,945	39	1,694	61	653	88	200	20	254	-74
Amite	9,114	5	1,899	19	959	35	295	40	98	0	80	18
Claiborne	8,385	4	1,047	10	460	17	164	22	53	4	73	-24
Copiah	24,013	12	3,644	36	1,628	59	543	73	180	30	150	0
Franklin	6,007	3	1,073	11	488	18	170	23	54	0	60	-6
Hinds	223,835	112	23,598	236	10,511	378	3,614	488	1,214	59	1,518	-363
Issaquena	919	0	133	1	70	3	24	3	8	0	0	8
Jefferson	5,878	3	810	8	358	13	134	18	42	0	60	-18
Lawrence	10,458	5	1,490	15	780	28	260	35	83	0	60	23
Lincoln	29,575	15	4,167	42	1,944	70	702	95	221	0	320	-99
Madison	104,295	52	13,312	133	5,295	191	1,994	269	645	0	455	190
Pike	34,073	17	4,885	49	2,208	79	750	101	247	0	315	-68
Rankin	138,052	69	15,884	159	7,945	286	2,476	334	848	91	502	255
Sharkey	3,724	2	577	6	253	9	106	14	31	0	54	-23
Simpson	22,741	11	3,089	31	1,593	57	537	72	172	0	180	-8
Walthall	12,086	6	1,953	20	1,026	37	347	47	109	8	137	-36
Warren	40,732	20	5,660	57	2,699	97	847	114	288	0	380	-92
Wilkinson	7,570	4	1,082	11	485	17	171	23	55	15	90	-50
Yazoo	24,348	12	2,578	26	1,242	45	474	64	147	0	240	-93
District Total	**729,593**	**365**	**90,826**	**908**	**41,638**	**1,499**	**14,261**	**1,925**	**4,697**	**227**	**4,928**	**-458**

Table 2-2A (continued)
2023 Projected Nursing Home Bed Need

District IV												
County	**Population 0 - 64**	**Bed Need (0.5/1,000)**	**Population 65 - 74**	**Bed Need (10/1,000)**	**Population 75 - 84**	**Bed Need (36/1,000)**	**Population 85+**	**Bed Need (135/1,000)**	**Total Bed Need**	**# Beds in Abeyance**	**Licensed**	**Difference**
Clarke	11,779	6	2,148	21	1,049	38	292	39	105	0	120	-15
Covington	16,375	8	2,070	21	1,174	42	424	57	128	0	120	8
Forrest	66,720	33	7,129	71	3,434	124	1,160	157	385	80	536	-231
George	20,312	10	2,373	24	1,390	50	375	51	135	0	101	34
Greene	9,736	5	1,299	13	767	28	241	33	78	0	120	-42
Hancock	38,237	19	5,791	58	2,732	98	714	96	272	29	202	41
Harrison	173,385	87	20,587	206	8,908	321	2,709	366	979	80	932	-33
Jackson	122,360	61	15,394	154	7,597	273	2,177	294	783	0	528	255
Jasper	13,279	7	2,027	20	1,106	40	373	50	117	0	110	7
Jeff Davis	8,037	4	1,647	16	818	29	243	33	83	0	60	23
Jones	58,233	29	7,813	78	3,736	134	1,196	161	403	10	428	-35
Kemper	8,243	4	1,263	13	655	24	239	32	73		60	13
Lamar	56,866	28	5,477	55	2,829	102	899	121	306	3	180	123
Lauderdale	67,871	34	9,200	92	4,391	158	1,523	206	490	77	825	-412
Leake	23,604	12	2,567	26	1,183	43	402	54	134	0	143	-9
Marion	23,076	12	3,419	34	1,585	57	599	81	184	0	297	-113
Neshoba	25,603	13	3,161	32	1,446	52	520	70	167	3	340	-176
Newton	18,337	9	2,221	22	1,241	45	451	61	137	0	180	-43
Pearl River	51,207	26	7,855	79	3,790	136	1,067	144	385	6	306	73
Perry	10,059	5	1,420	14	786	28	238	32	80	0	60	20
Scott	24,295	12	2,726	27	1,373	49	466	63	152	0	162	-10
Smith	13,186	7	2,082	21	1,057	38	272	37	102	0	121	-19
Stone	20,095	10	2,488	25	1,143	41	274	37	113	40	103	-30
Wayne	17,374	9	2,218	22	1,213	44	391	53	127	0	90	37
District Total	**898,269**	**449**	**114,375**	**1,144**	**55,403**	**1,995**	**17,245**	**2,328**	**5,915**	**328**	**6,124**	**-537**

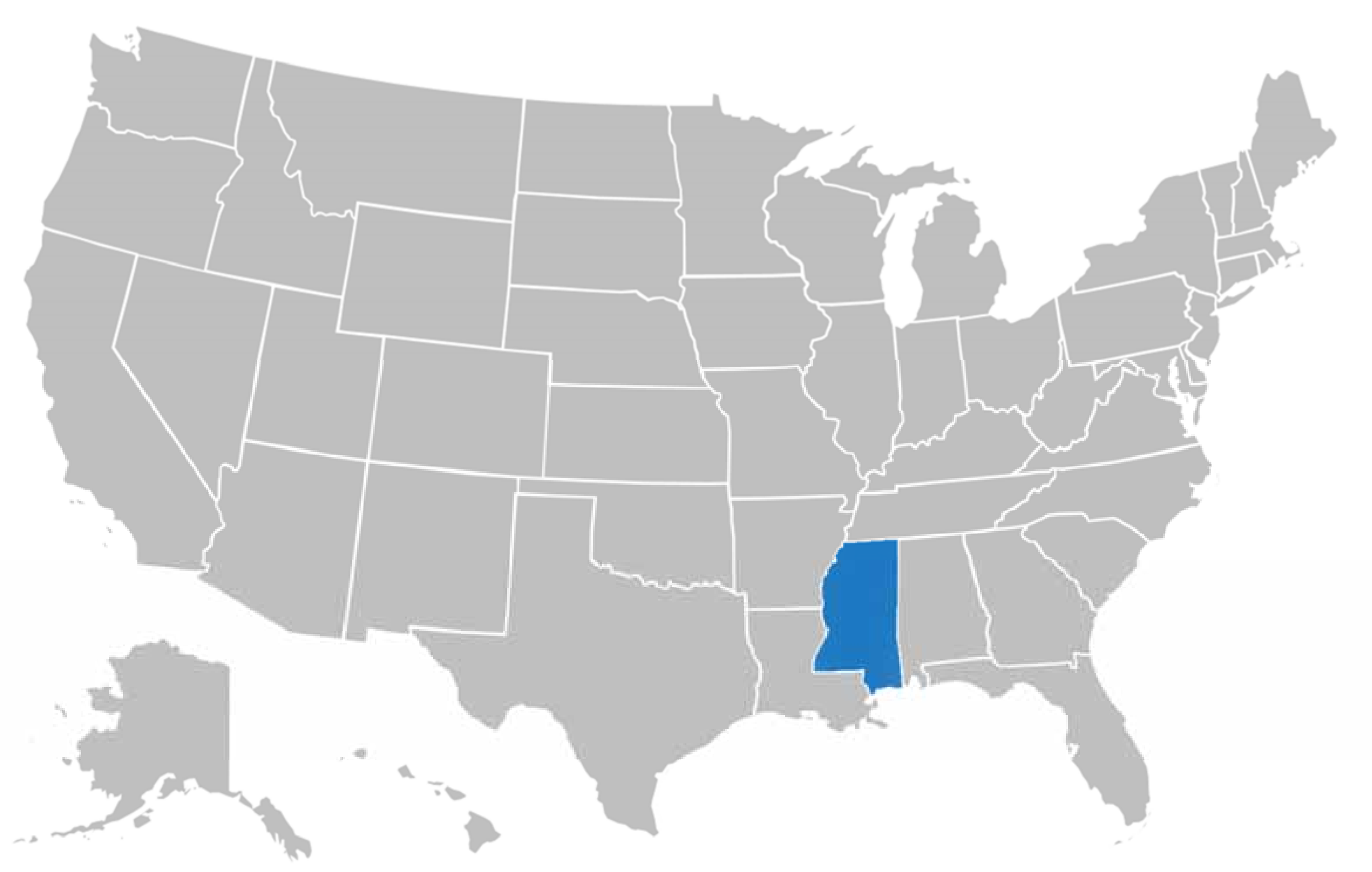
Appendix D: Mississippi County Health Rankings, 2019

County Health Rankings & Roadmaps

Building a Culture of Health, County by County

A Robert Wood Johnson Foundation program

Mississippi



2019 County Health Rankings Report

A collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute.

University of Wisconsin Population Health Institute
SCHOOL OF MEDICINE AND PUBLIC HEALTH

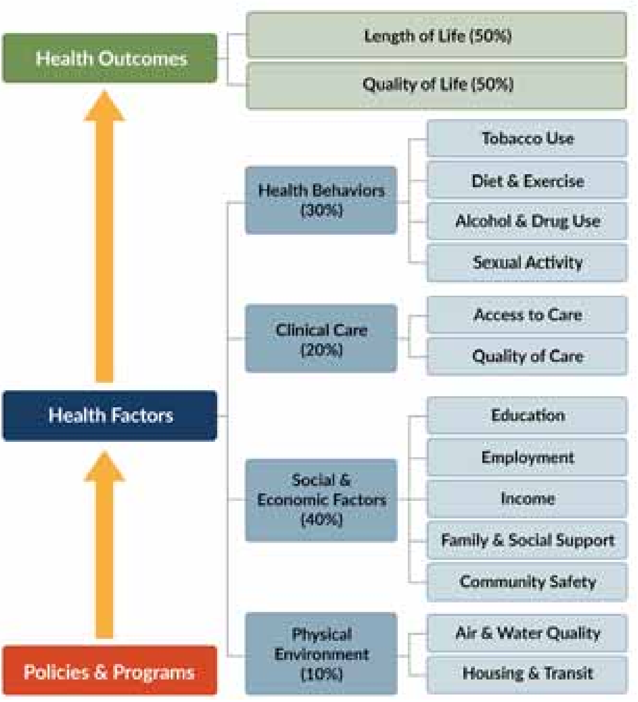
Support provided by Robert Wood Johnson Foundation

The County Health Rankings & Roadmaps (CHR&R) brings actionable data, evidence, guidance, and stories to communities to make it easier for people to be healthy in their neighborhoods, schools, and workplaces. Ranking the health of nearly every county in the nation (based on the model below), CHR&R illustrates what we know when it comes to what is keeping people healthy or making them sick and shows what we can do to create healthier places to live, learn, work, and play.

What are the County Health Rankings?

Published online at countyhealthrankings.org, the Rankings help counties understand what influences how healthy residents are and how long they will live. The Rankings are unique in their ability to measure the current overall health of each county in all 50 states. They also look at a variety of measures that affect the future health of communities, such as high school graduation rates, access to healthy foods, rates of smoking, obesity, and teen births.

Communities use the Rankings to garner support for local health improvement initiatives among government agencies, health care providers, community organizations, business leaders, policymakers, and the public.



Moving with Data to Action

The Take Action to Improve Health section of our website, countyhealthrankings.org, helps communities join together to look at the many factors influencing health, select strategies that work, and make changes that will have a lasting impact. Take Action to Improve Health is a hub of information to help any community member or leader who wants to improve their community's health and equity. You will find:

- What Works for Health, a searchable menu of evidence-informed policies and programs that can make a difference locally;
- The Action Center, your home for step-by-step guidance and tools to help you move with data to action;
- Action Learning Guides, self-directed learning on specific topics with a blend of guidance, tools, and hands-on practice and reflection activities;
- The Partner Center, information to help you identify the right partners and explore tips to engage them;
- Peer Learning, a virtual, interactive place to learn with and from others about what works in communities; and
- Action Learning Coaches, located across the nation, who are available to provide real-time guidance to local communities interested in learning how to accelerate their efforts to improve health and advance equity.

The Robert Wood Johnson Foundation (RWJF) collaborates with the University of Wisconsin Population Health Institute (UWPHI) to bring this program to cities, counties, and states across the nation.

Opportunities for Health Vary by Place and Race

Our country has achieved significant health improvements over the past century. We have benefited from progress in automobile safety, better workplace standards, good schools and medical clinics, and reductions in smoking and infectious diseases. But when you look closer, there are significant differences in health outcomes according to where we live, how much money we make, or how we are treated. The data show that, in counties everywhere, not everyone has benefited in the same way from these health improvements. There are fewer opportunities and resources for better health among groups that have been historically marginalized, including people of color, people living in poverty, people with physical or mental disabilities, LGBTQ persons, and women.

Differences in Opportunity Have Been Created, and Can Be Undone

Differences in opportunity do not arise on their own or because of the actions of individuals alone. Often, they are the result of policies and practices at many levels that have created deep-rooted barriers to good health, such as unfair bank lending practices, school funding based on local property taxes, and discriminatory policing and prison sentencing. The collective effect is that a fair and just opportunity to live a long and healthy life does not exist for everyone. Now is the time to change how things are done.

Measure What Matters

Achieving health equity means reducing and ultimately eliminating unjust and avoidable differences in health and in the conditions and resources needed for optimal health. This report provides data on differences in health and opportunities in Mississippi that can help identify where action is needed to achieve greater equity and offers information on how to move with data to action.

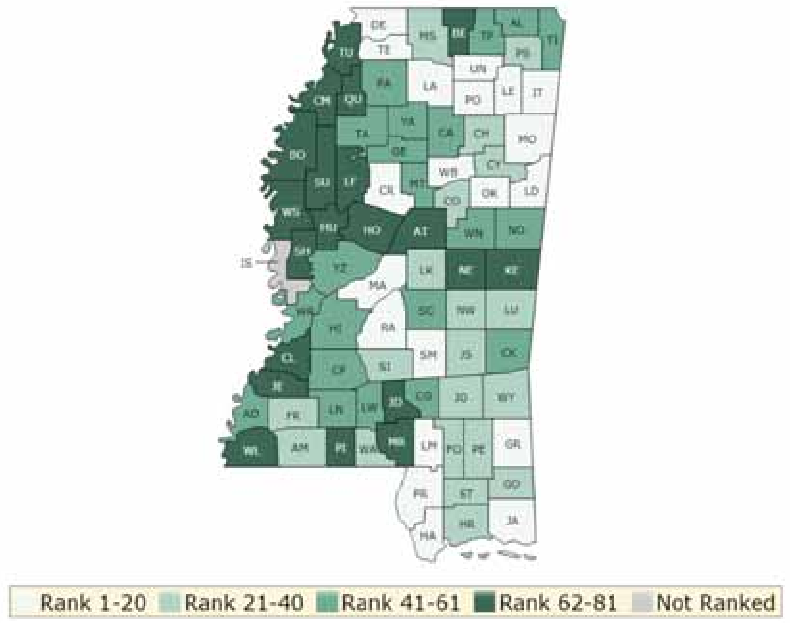
Specifically, this report will help illuminate:

1. Differences in health outcomes within the state by place and racial/ethnic groups
2. Differences in health factors within the state by place and racial/ethnic groups
3. What communities can do to create opportunity and health for all

Differences in Health Outcomes within States by Place and Racial/Ethnic Groups

How Do Counties Rank for Health Outcomes?

Health outcomes in the County Health Rankings represent measures of how long people live and how healthy people feel. Length of life is measured by premature death (years of potential life lost before age 75) and quality of life is measured by self-reported health status (percent of people reporting poor or fair health and the number of physically and mentally unhealthy days within the last 30 days) and the % of low birth weight newborns. Detailed information on the underlying measures is available at **countyhealthrankings.org**



The green map above shows the distribution of Mississippi's **health outcomes**, based on an equal weighting of length and quality of life. The map is divided into four quartiles with less color intensity indicating better performance in the respective summary rankings. Specific county ranks can be found in the table on page 10 at the end of this report.

How Do Health Outcomes Vary by Race/Ethnicity?

Length and quality of life vary not only based on where we live, but also by our racial/ethnic background. In Mississippi, there are differences by race/ethnicity in length and quality of life that are masked when we only look at differences by place. The table below presents the five underlying measures that make up the Health Outcomes rank. Explore the table to see how health differs between the healthiest and the least healthy counties in Mississippi, and among racial/ethnic groups.

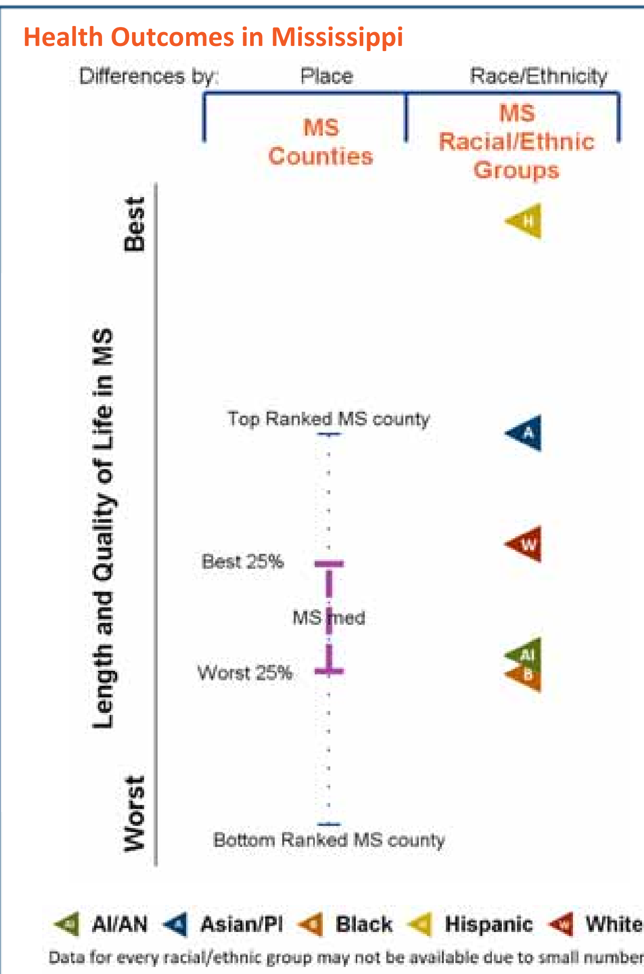
Differences in Health Outcome Measures among Counties and for Racial/Ethnic Groups in Mississippi

	Healthiest MS County	Least Healthy MS County	AI/AN	Asian/PI	Black	Hispanic	White
Premature Death (years lost/100,000)	7,200	15,900	15,000	4,200	12,200	3,400	9,600
Poor or Fair Health (%)	15%	35%	N/A	N/A	26%	6%	20%
Poor Physical Health Days (avg)	3.3	5.4	N/A	N/A	4.3	2.4	4.3
Poor Mental Health Days (avg)	3.4	4.8	N/A	N/A	4.3	1.1	4.6
Low Birthweight (%)	9%	17%	7%	9%	16%	7%	8%

American Indian/Alaskan Native (AI/AN), Asian/Pacific Islander (Asian/PI)

N/A = Not available. Data for all racial/ethnic groups may not be available due to small numbers

Health Outcomes in Mississippi



The graphic to the left compares measures of length and quality of life by place (Health Outcomes ranks) and by race/ethnicity. To learn more about this composite measure, see the technical notes on page 14.

Taken as a whole, measures of length and quality of life in Mississippi indicate:

- American Indians/Alaskan Natives are most similar in health to those living in the middle 50% of counties.
- Asians/Pacific Islanders are healthier than those living in the top ranked county.
- Blacks are most similar in health to those living in the least healthy quartile of counties.
- Hispanics are healthier than those living in the top ranked county.
- Whites are most similar in health to those living in the healthiest quartile of counties.

(Quartiles refer to the map on page 4.)

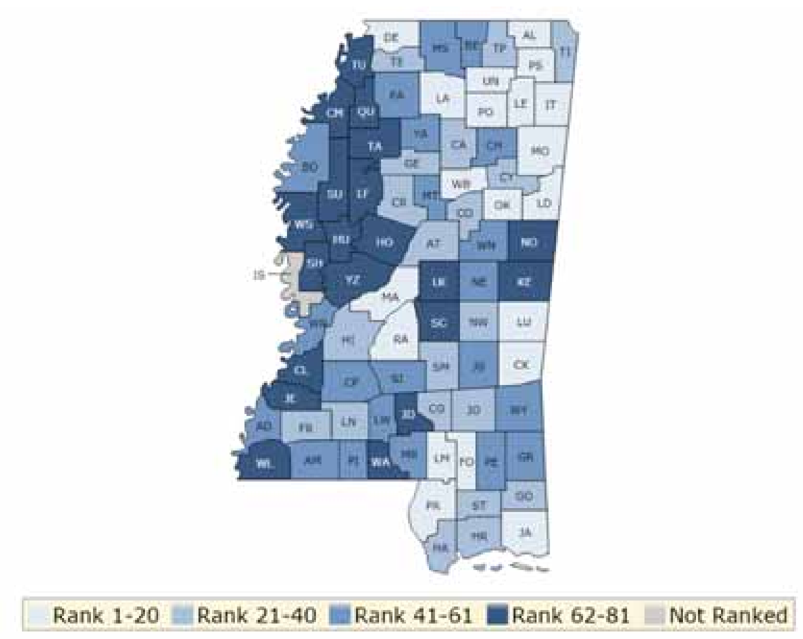
AI/AN -American Indian/Alaskan Native/Native American
Asian/PI - Asian/Pacific Islander

Across the US, values for measures of length and quality of life for Native American, Black, and Hispanic residents are regularly worse than for Whites and Asians. For example, even in the healthiest counties in the US, Black and American Indian premature death rates are about 1.4 times higher than White rates. Not only are these differences unjust and avoidable, they will also negatively impact our changing nation’s future prosperity.

Differences in Health Factors within States by Place and Racial/Ethnic Groups

How Do Counties Rank for Health Factors?

Health factors in the County Health Rankings represent the focus areas that drive how long and how well we live, including health behaviors (tobacco use, diet & exercise, alcohol & drug use, sexual activity), clinical care (access to care, quality of care), social and economic factors (education, employment, income, family & social support, community safety), and the physical environment (air & water quality, housing & transit).



The blue map above shows the distribution of Mississippi's **health factors** based on weighted scores for health behaviors, clinical care, social and economic factors, and the physical environment. Detailed information on the underlying measures is available at **countyhealthrankings.org.** The map is divided into four quartiles with less color intensity indicating better performance in the respective summary rankings. Specific county ranks can be found in the table on page 10.

What are the Factors That Drive Health and Health Equity and How Does Housing Play a Role?

Health is influenced by a range of factors. Social and economic factors, like connected and supportive communities, good schools, stable jobs, and safe neighborhoods, are foundational to achieving long and healthy lives. These social and economic factors also interact with other important drivers of health and health equity. For example, housing that is unaffordable or unstable can either result from poverty or exacerbate it. When our homes are near high performing schools and good jobs, it's easier to get a quality education and earn a living wage. When people live near grocery stores where fresh food is available or close to green spaces and parks, eating healthy and being active is easier. When things like lead, mold, smoke, and other toxins are inside our homes, they can make us sick. And when so much of a paycheck goes toward the rent or mortgage, it makes it hard to afford to go to the doctor, cover the utility bills, or maintain reliable transportation to work or school.

How Do Opportunities for Stable and Affordable Housing Vary in Mississippi?

Housing is central to people's opportunities for living long and well. Nationwide, housing costs far exceed affordability given local incomes in many communities. As a result, people have no choice but to spend too much on housing, leaving little left for other necessities. Here, we focus on stable and affordable housing as an essential element of healthy communities. We also explore the connection between housing and children in poverty to illuminate the fact that these issues are made even more difficult when family budgets are the tightest.

In 2017, in Mississippi, more than 190,000 children lived in poverty

48% of Mississippi's children in poverty were living in a household that spends more than ½ of its income on housing costs

Leaving little left over for other essentials like...

Healthy Food

Transportation

Medical Care

What can work to create and preserve stable and affordable housing that can improve economic and social well-being and connect residents to opportunity?

A comprehensive, strategic approach that looks across a community and multiple sectors is needed to create and preserve stable, affordable housing in our communities. The way forward requires policies, programs, and systems changes that respond to the specific needs of each community, promote inclusive and connected neighborhoods, reduce displacement, and enable opportunity for better health for all people. This includes efforts to:

Make communities more inclusive and connected, such as:

- Inclusive zoning
- Civic engagement in public governance and in community development decisions
- Fair housing laws and enforcement
- Youth leadership programs
- Access to living wage jobs, quality health care, grocery stores, green spaces and parks, and public transportation systems

For more information about evidence-informed strategies that can address priorities in your community, visit What Works for Health at countyhealthrankings.org/whatworks

Facilitate access to resources needed to secure affordable housing, particularly for low- to middle-income families, such as:

- Housing choice vouchers for low- and very low-income households
- Housing trust funds

Address capital resources needed to create and preserve affordable housing, particularly for low- to middle-income families, such as:

- Acquisition, management, and financing of land for affordable housing, like land banks or land trusts
- Tax credits, block grants, and other government subsidies or revenues to advance affordable housing development
- Zoning changes that reduce the cost of housing production

This report explores statewide data. To dive deeper into your county data, visit Use the Data at countyhealthrankings.org

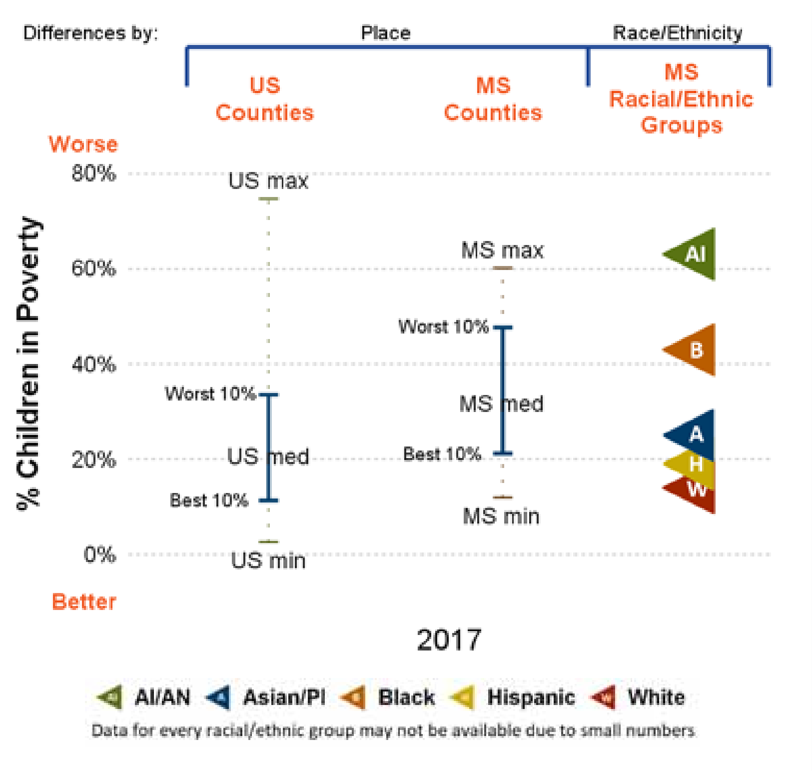
Consider these questions as you look at the data graphics throughout this report:

- What differences do you see among counties in your state?
- What differences do you see by racial/ethnic groups in your state?
- How do counties in your state compare to all U.S. counties?
- What patterns do you see? For example, do some racial/ethnic groups fare better or worse across measures?

CHILDREN IN POVERTY

Poverty limits opportunities for quality housing, safe neighborhoods, healthy food, living wage jobs, and quality education. As poverty and related stress increase, health worsens.

- In Mississippi, 28% of children are living in poverty.
- Children in poverty among Mississippi counties range from 12% to 60%.
- Child poverty rates among racial/ethnic groups in Mississippi range from 14% to 63%.



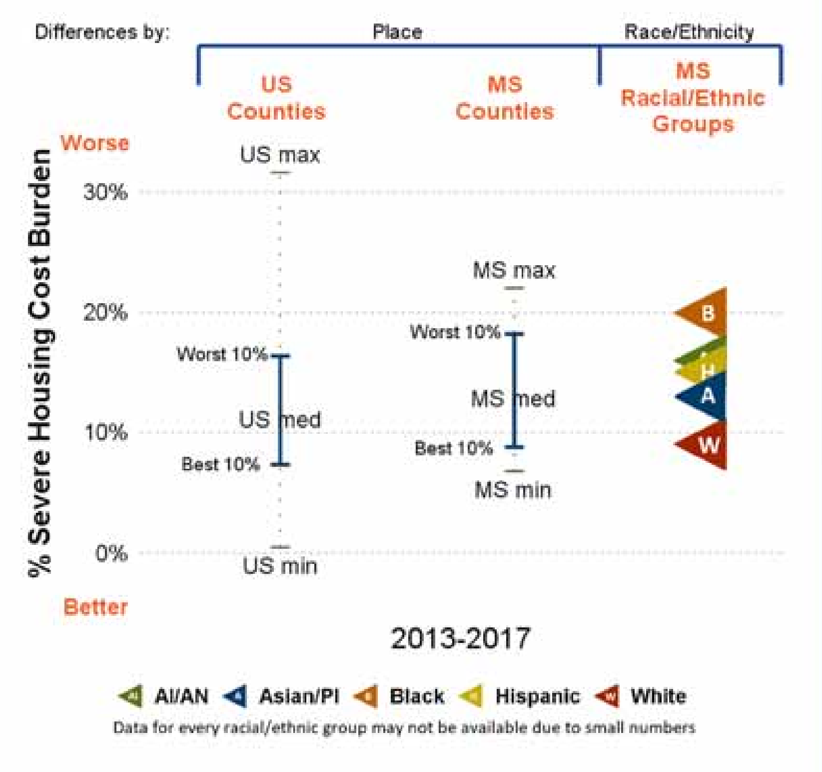
US and state values and the state minimum and maximum can be found in the table on page 12

American Indian/Alaskan Native/Native American (AI/AN) Asian/Pacific Islander (Asian/PI)

Severe Housing Cost Burden

There is a strong and growing evidence base linking stable and affordable housing to health. As housing costs have outpaced local incomes, households not only struggle to acquire and maintain adequate shelter, but also face difficult trade-offs in meeting other basic needs.

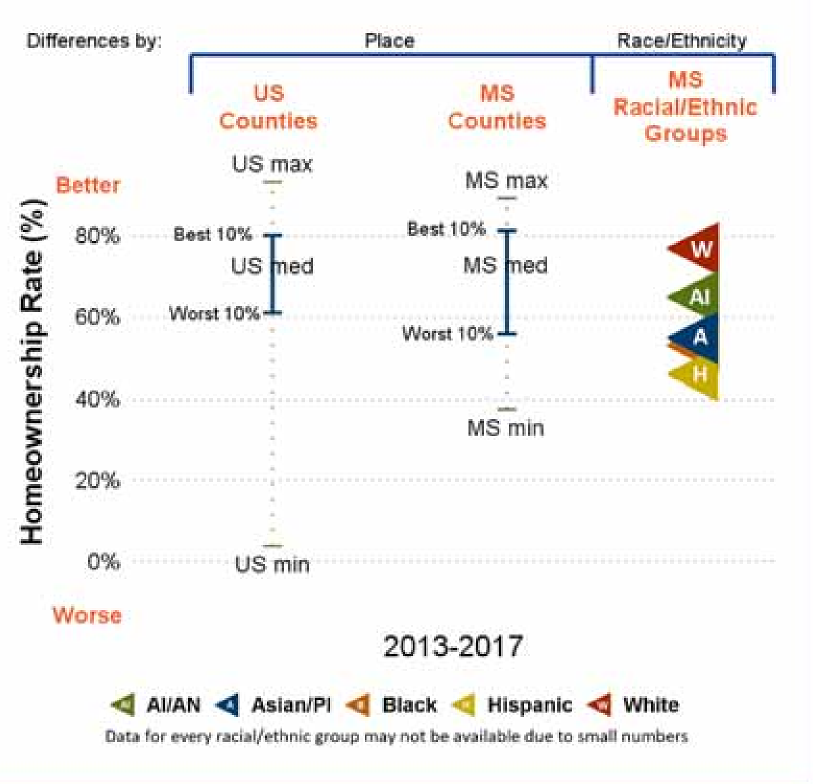
- In Mississippi, 14% of households spend more than half of their income on housing costs.
- Across Mississippi counties, severe housing cost burden ranges from 7% to 22% of households.
- Severe housing cost burden ranges from 9% to 20% among households headed by different racial/ethnic groups in Mississippi.



Homeownership

Homeownership has historically been a springboard for families to enter the middle class. Owning a home over time can help build savings for education or for other opportunities important to health and future family wealth. High levels of homeownership are associated with more stable housing and more tightly knit communities.

- In Mississippi, 68% of households own their home.
- Homeownership rates among Mississippi counties range from 38% to 89% of households.
- Homeownership rates among racial/ethnic groups in Mississippi range from 46% to 77%.



2019 County Health Rankings for the 81 Ranked Counties in Mississippi

County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors	County	Health Outcomes	Health Factors
Adams	49	57	Grenada	41	33	Lincoln	46	27	Simpson	37	42
Alcorn	44	14	Hancock	7	28	Lowndes	18	12	Smith	15	31
Amite	27	56	Harrison	21	25	Madison	2	1	Stone	22	21
Attala	63	32	Hinds	42	40	Marion	62	41	Sunflower	71	76
Benton	64	50	Holmes	79	81	Marshall	29	47	Tallahatchie	52	62
Bolivar	68	61	Humphreys	66	77	Monroe	19	17	Tate	13	30
Calhoun	47	39	Issaquena	NR	NR	Montgomery	61	45	Tippah	43	23
Carroll	10	26	Itawamba	12	9	Neshoba	73	58	Tishomingo	45	24
Chickasaw	40	49	Jackson	6	8	Newton	38	38	Tunica	72	66
Choctaw	30	36	Jasper	33	53	Noxubee	58	74	Union	8	10
Claiborne	76	78	Jefferson	80	80	Oktibbeha	16	7	Walthall	28	64
Clarke	53	18	Jefferson Davis	74	68	Panola	55	59	Warren	51	48
Clay	36	37	Jones	31	29	Pearl River	20	16	Washington	69	67
Coahoma	78	72	Kemper	67	65	Perry	35	54	Wayne	26	60
Copiah	56	46	Lafayette	5	5	Pike	65	52	Webster	14	20
Covington	50	35	Lamar	4	3	Pontotoc	11	15	Wilkinson	70	75
DeSoto	3	4	Lauderdale	34	13	Prentiss	39	19	Winston	59	43
Forrest	24	11	Lawrence	54	55	Quitman	81	79	Yalobusha	48	44
Franklin	25	22	Leake	32	63	Rankin	1	2	Yazoo	60	73
George	23	34	Lee	17	6	Scott	57	69			
Greene	9	51	Leflore	75	71	Sharkey	77	70			

Stay Up-To-Date with County Health Rankings & Roadmaps

For the latest updates on our Rankings, community support, RWJF Culture of Health Prize communities, and more visit countyhealthrankings.org/news. You can see what we're featuring on our webinar series, what communities are doing to improve health, and how you can get involved!

2019 County Health Rankings for Mississippi: Measures and National/State Results

Measure	Description	US	MS	MS Minimum	MS Maximum
HEALTH OUTCOMES					
Premature death	Years of potential life lost before age 75 per 100,000 population	6900	10,400	7,100	15,900
Poor or fair health	% of adults reporting fair or poor health	16%	22%	15%	36%
Poor physical health days	Average # of physically unhealthy days reported in past 30 days	3.7	4.4	3.3	5.6
Poor mental health days	Average # of mentally unhealthy days reported in past 30 days	3.8	4.4	3.4	5.1
Low birthweight	% of live births with low birthweight (< 2500 grams)	8%	12%	8%	24%
HEALTH FACTORS					
HEALTH BEHAVIORS					
Adult smoking	% of adults who are current smokers	17%	23%	15%	27%
Adult obesity	% of adults that report a BMI ≥ 30	29%	37%	31%	50%
Food environment index	Index of factors that contribute to a healthy food environment, (0-10)	7.7	3.8	1.5	8.3
Physical inactivity	% of adults aged 20 and over reporting no leisure-time physical activity	22%	31%	24%	40%
Access to exercise opportunities	% of population with adequate access to locations for physical activity	84%	55%	0%	88%
Excessive drinking	% of adults reporting binge or heavy drinking	18%	14%	9%	17%
Alcohol-impaired driving deaths	% of driving deaths with alcohol involvement	29%	21%	0%	83%
Sexually transmitted infections	# of newly diagnosed chlamydia cases per 100,000 population	497.3	672.1	189.2	1,827.3
Teen births	# of births per 1,000 female population ages 15-19	25	39	12	80
CLINICAL CARE					
Uninsured	% of population under age 65 without health insurance	10%	14%	10%	19%
Primary care physicians	Ratio of population to primary care physicians	1,330:1	1,900:1	1,290:0	710:1
Dentists	Ratio of population to dentists	1,460:1	2,140:1	1,340:0	970:1
Mental health providers	Ratio of population to mental health providers	440:1	700:1	14,500:1	180:1
Preventable hospital stays	# of hospital stays for ambulatory-care sensitive conditions per 100,000 Medicare enrollees	4,520	6,135	3,209	11,605
Mammography screening	% of female Medicare enrollees ages 65-74 that receive mammography screening	41%	38%	23%	50%
Flu vaccinations	% of Medicare enrollees who receive an influenza vaccination	45%	39%	15%	53%
SOCIAL AND ECONOMIC FACTORS					
High school graduation	% of ninth-grade cohort that graduates in four years	85%	83%	72%	93%
Some college	% of adults ages 25-44 with some post-secondary education	65%	59%	26%	78%
Unemployment	% of population aged 16 and older unemployed but seeking work	4.4%	5.1%	3.6%	14.7%
Children in poverty	% of children under age 18 in poverty	18%	28%	12%	60%
Income inequality	Ratio of household income at the 80th percentile to income at the 20th percentile	4.9	5.3	3.7	8.0
Children in single-parent households	% of children that live in a household headed by a single parent	33%	44%	23%	78%
Social associations	# of membership associations per 10,000 population	9.3	12.6	2.7	23.1
Violent crime	# of reported violent crime offenses per 100,000 population	386	279	26	755
Injury deaths	# of deaths due to injury per 100,000 population	67	85	45	162
PHYSICAL ENVIRONMENT					
Air pollution – particulate matter	Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5)	8.6	9.9	8.7	10.7
Drinking water violations	Indicator of the presence of health-related drinking water violations. Yes - indicates the presence of a violation, No - indicates no violation.	N/A	N/A	No	Yes
Severe housing problems	% of households with overcrowding, high housing costs, or lack of kitchen or plumbing facilities	18%	16%	10%	25%
Driving alone to work	% of workforce that drives alone to work	76%	85%	76%	93%
Long commute – driving alone	Among workers who commute in their car alone, % commuting > 30 minutes	35%	32%	11%	61%

2019 County Health Rankings: Ranked Measure Sources and Years of Data

	Measure	Source	Years of Data
HEALTH OUTCOMES			
Length of Life	Premature death	National Center for Health Statistics – Mortality files	2015-2017
Quality of Life	Poor or fair health	Behavioral Risk Factor Surveillance System	2016
	Poor physical health days	Behavioral Risk Factor Surveillance System	2016
	Poor mental health days	Behavioral Risk Factor Surveillance System	2016
	Low birthweight	National Center for Health Statistics – Natality files	2011-2017
HEALTH FACTORS			
HEALTH BEHAVIORS			
Tobacco Use	Adult smoking	Behavioral Risk Factor Surveillance System	2016
Diet and Exercise	Adult obesity	CDC Diabetes Interactive Atlas	2015
	Food environment index	USDA Food Environment Atlas, Map the Meal Gap	2015 & 2016
	Physical inactivity	CDC Diabetes Interactive Atlas	2015
	Access to exercise opportunities	Business Analyst, Delorme map data, ESRI, & U.S. Census Files	2010 & 2018
Alcohol and Drug Use	Excessive drinking	Behavioral Risk Factor Surveillance System	2016
	Alcohol-impaired driving deaths	Fatality Analysis Reporting System	2013-2017
Sexual Activity	Sexually transmitted infections	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB	2016
	Teen births	National Center for Health Statistics – Natality files	2011-2017
CLINICAL CARE			
Access to Care	Uninsured	Small Area Health Insurance Estimates	2016
	Primary care physicians	Area Health Resource File/American Medical Association	2016
	Dentists	Area Health Resource File/National Provider Identification file	2017
	Mental health providers	CMS, National Provider Identification file	2018
Quality of Care	Preventable hospital stays	Mapping Medicare Disparities Tool	2016
	Mammography screening	Mapping Medicare Disparities Tool	2016
	Flu vaccinations	Mapping Medicare Disparities Tool	2016
SOCIAL AND ECONOMIC FACTORS			
Education	High school graduation	State-specific sources & EDFacts	Varies
	Some college	American Community Survey	2013-2017
Employment	Unemployment	Bureau of Labor Statistics	2017
Income	Children in poverty	Small Area Income and Poverty Estimates	2017
	Income inequality	American Community Survey	2013-2017
Family and Social Support	Children in single-parent households	American Community Survey	2013-2017
	Social associations	County Business Patterns	2016
Community Safety	Violent crime	Uniform Crime Reporting – FBI	2014 & 2016
	Injury deaths	CDC WONDER mortality data	2013-2017
PHYSICAL ENVIRONMENT			
Air and Water Quality	Air pollution – particulate matter*	Environmental Public Health Tracking Network	2014
	Drinking water violations	Safe Drinking Water Information System	2017
Housing and Transit	Severe housing problems	Comprehensive Housing Affordability Strategy (CHAS) data	2011-2015
	Driving alone to work	American Community Survey	2013-2017
	Long commute – driving alone	American Community Survey	2013-2017

*Not available for AK and HI.

2019 County Health Rankings: Additional Measure Sources and Years of Data

	Measure	Source	Years of Data
HEALTH OUTCOMES			
Length of Life	Life expectancy	National Center for Health Statistics - Mortality Files	2015-2017
	Premature age-adjusted mortality	CDC WONDER mortality data	2015-2017
	Child mortality	CDC WONDER mortality data	2014-2017
	Infant mortality	CDC WONDER mortality data	2011-2017
Quality of Life	Frequent physical distress	Behavioral Risk Factor Surveillance System	2016
	Frequent mental distress	Behavioral Risk Factor Surveillance System	2016
	Diabetes prevalence	CDC Diabetes Interactive Atlas	2015
	HIV prevalence	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2015
HEALTH FACTORS			
HEALTH BEHAVIORS			
Diet and Exercise	Food insecurity	Map the Meal Gap	2016
	Limited access to healthy foods	USDA Food Environment Atlas	2015
Alcohol and Drug Use	Drug overdose deaths	CDC WONDER mortality data	2015-2017
	Motor vehicle crash deaths	CDC WONDER mortality data	2011-2017
Other Health Behaviors	Insufficient sleep	Behavioral Risk Factor Surveillance System	2016
CLINICAL CARE			
Access to Care	Uninsured adults	Small Area Health Insurance Estimates	2016
	Uninsured children	Small Area Health Insurance Estimates	2016
	Other primary care providers	CMS, National Provider Identification File	2018
SOCIAL & ECONOMIC FACTORS			
Education	Disconnected youth	American Community Survey	2013-2017
Income	Median household income	Small Area Income and Poverty Estimates	2017
	Children eligible for free or reduced price lunch	National Center for Education Statistics	2016-2017
Family and Social Support	Residential segregation - black/white	American Community Survey	2013-2017
	Residential segregation - non-white/white	American Community Survey	2013-2017
Community Safety	Homicides	CDC WONDER mortality data	2011-2017
	Firearm fatalities	CDC WONDER mortality data	2013-2017
PHYSICAL ENVIRONMENT			
Housing and Transit	Homeownership	American Community Survey	2013-2017
	Severe housing cost burden	American Community Survey	2013-2017
DEMOGRAPHICS			
All	Population	Census Population Estimates	2017
	% below 18 years of age	Census Population Estimates	2017
	% 65 and older	Census Population Estimates	2017
	% Non-Hispanic African American	Census Population Estimates	2017
	% American Indian and Alaskan Native	Census Population Estimates	2017
	% Asian	Census Population Estimates	2017
	% Native Hawaiian/Other Pacific Islander	Census Population Estimates	2017
	% Hispanic	Census Population Estimates	2017
	% Non-Hispanic white	Census Population Estimates	2017
	% not proficient in English	American Community Survey	2013-2017
	% Females	Census Population Estimates	2017
	% Rural	Census Population Estimates	2010

Technical Notes and Glossary of Terms

What is health equity? What are health disparities? And how do they relate?

Health equity means that everyone has a fair and just opportunity to be as healthy as possible. This requires removing obstacles to health such as poverty and discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care.

Health disparities are differences in health or in the key determinants of health such as education, safe housing, and discrimination, which adversely affect marginalized or excluded groups.

Health equity and health disparities are closely related to each other. Health equity is the ethical and human rights principle or value that motivates us to eliminate health disparities. Reducing and ultimately eliminating disparities in health and its determinants of health is how we measure progress toward health equity.

Braveman P, Arkin E, Orleans T, Proctor D, and Plough A. What is Health Equity? And What Difference Does a Definition Make? Robert Wood Johnson Foundation. May 2017

How do we define racial/ethnic groups?

In our analyses by race/ethnicity we define each category as follows:

- Hispanic includes those who identify themselves as Mexican, Puerto Rican, Cuban, Central or South American, other Hispanic, or Hispanic of unknown origin.
- American Indian/Alaskan Native includes people who identify themselves as American Indian or Alaskan Native and do not identify as Hispanic. This group is sometimes referred to as Native American in the report.
- Asian/Pacific Islander includes people who identify themselves as Asian or Pacific Islander and do not identify as Hispanic.
- Black includes people who identify themselves as black/African American and do not identify as Hispanic.
- White includes people who identify themselves as white and do not identify as Hispanic.

All racial/ethnic categories are exclusive so that one person fits into only one category. Our analyses do not include people reporting more than one race, as this category was not measured uniformly across our data sources.

We recognize that “race” is a social category, meaning the way society may identify individuals based on their cultural ancestry, not a way of characterizing individuals based on biology or genetics. A strong and growing body of empirical research provides support for the notion that genetic factors are not responsible for racial differences in health factors and very rarely for health outcomes.

How did we compare county ranks and racial/ethnic groups for length and quality of life?

Data are from the same data sources and years listed in the table on page 14. The mean and standard deviation for each health outcome measure (premature death, poor or fair health, poor physical health days, poor mental health days, and low birthweight) are calculated for all ranked counties within a state. This mean and standard deviation are then used as the metrics to calculate z-scores, a way to put all measures on the same scale, for values by race/ethnicity within the state. The z-scores are weighted using CHR&R measure weights for health outcomes to calculate a health outcomes z-score for each race/ethnicity. This z-score is then compared to the health outcome z-scores for all ranked counties within a state; the identified-score calculated for the racial/ethnic groups is compared to the quartile cut-off values for counties with states. You can learn more about calculating z-scores on our website under Rankings Methods.

How did we select evidence-informed approaches?

Evidence-informed approaches included in this report represent those backed by strategies that have demonstrated consistently favorable results in robust studies or reflect recommendations by experts based on early research. To learn more about evidence analysis methods and evidence-informed strategies that can make a difference to improving health and decreasing disparities, visit What Works for Health.

Technical Notes:

- In this report, we use the terms disparities, differences, and gaps interchangeably.
- We follow basic design principles for cartography in displaying color spectrums with less intensity for lower values and increasing color intensity for higher values. We do not intend to elicit implicit biases that “darker is bad”.
- In our graphics of state and U.S. counties we report the median of county values, our preferred measure of central tendency for counties. This value can differ from the state or U.S. overall values.

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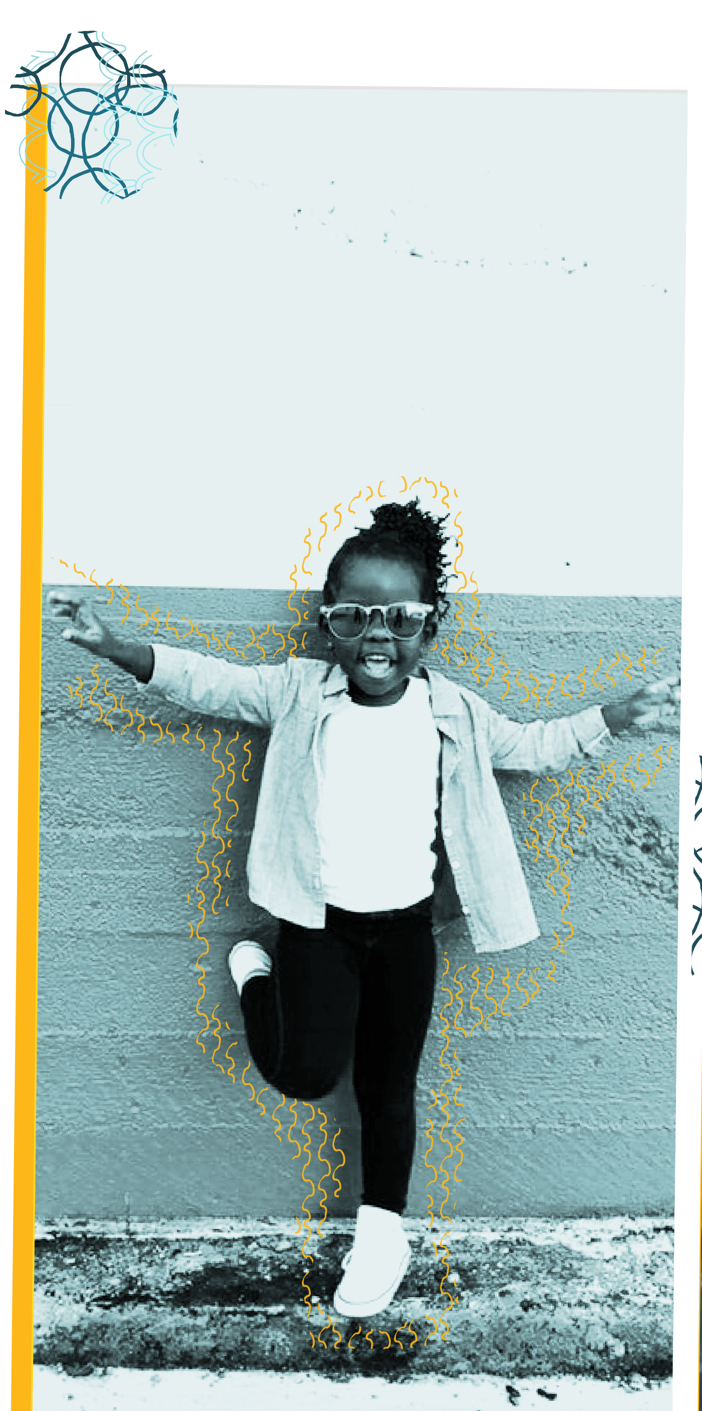
County Health Rankings & Roadmaps

Building a Culture of Health, County by County

A Robert Wood Johnson Foundation program

Appendix E: Mississippi KIDS COUNT Fact Book, 2019



2019 FACTBOOK

KIDS COUNT

MISSISSIPPI kids count

INTRODUCTION

We are pleased to report that, in the most recent national KIDS COUNT Data Book, Mississippi rose in ranking for overall child well-being from worst among all states at 50th in 2017 to 48th in 2018. While this is still in the lowest tier, it is the highest ranking Mississippi has received since 1991. The theme of the current 2019 Mississippi KIDS COUNT Fact Book is prevention, and these national findings, along with other indicators we explore in this fact book, point to the successes of some preventive measures in Mississippi—and the lack or failure of efforts in other areas. To explain the rise in ranking, we look to trends since 2010 (when Mississippi also ranked 50th) in the sixteen indicators of children's economic well-being, education, health, and family and community life used in the national data book. For a detailed chart of these findings, please see page 8.

Mississippi showed modest improvements since 2010 in each of the four indicators of children's economic well-being used in the national data book: fewer children are living in poverty (down by 3%) or in households with a high housing cost burden (down by 7%); fewer children have parents lacking secure employment (down by 5%); and fewer teens in Mississippi are not in school or working (down by 4%). While these gains are promising, they are not surprising, as the overall economic picture for the country has improved since the recession in 2008. Nevertheless, Mississippi showed gains over and above other states in children's economic well-being, resulting in a ranking of 48th in this category.

Like the nation as a whole, Mississippi saw gains since 2010 in its percent of fourth graders who are proficient in reading and its percent of high school students graduating on time. However, the state also saw a seven percentage point gain in the percent of 8th graders who are proficient in math, while the nation as a whole remained stagnant. Mississippi lost a percentage point in ensuring its children ages three and four are in school, though, while the nation remained constant. The improvements in education in Mississippi relative to other states led the state to be ranked 44th in education. These findings point to the additional gains that could be achieved if state-funded Pre-K was extended to all children in the state. Currently, state allocations serve less than 6% of all four year olds.

Regarding the health of its children, Mississippi ranked 47th this year. Since 2010, the state has seen slight improvements in the number of low-birthweight babies, while the nation as a whole remained stagnant. Mississippi had a three percentage point improvement in children with health insurance, with a resultant 95% of all children being covered in 2016. And the state had a slight uptick in child and teen deaths, while the nation as a whole remained constant. We are not able to compare the percent of teens who abused alcohol or drugs since the data collection procedures for this measure changed. Despite the state's mixed outcomes in this category, Mississippi still showed improvements overall and ranked higher than several other states.

Unfortunately, Mississippi still ranks 50th among all states in children's family and community life, revealing an area of particular concern. While Mississippi showed modest improvements since 2010, it was not enough to rise above other states in this category. For example, while Mississippi's percent of children living in a high-poverty area improved by two percentage points, the current figure of 26% of Mississippi's children living in poverty is double that of the national average. Like the nation as a whole, Mississippi saw reductions in the teen birth rate. Mississippi also saw modest improvements in children living in single-parent families and families where the household head lacks a high school diploma.

While our state has made gains in a number of areas, the overall statistics paint a much bleaker picture for children in Mississippi compared to other states. In order to ensure we cultivate an environment that promotes, rather than limits, opportunity for children, we must allocate sufficient state resources for prevention in all four of these areas. This coupled with private investments at a community level could increase the odds of positive outcomes for Mississippi's children, communities, and eventual workforce. In this fact book, we drill down to view additional indicators of children's economic well-being, education, health, and family and community life by geography and race to underscore that not all children experience improvements equally and to demonstrate where additional prevention-related resources need to be directed.

We are also very pleased to have Mississippi's State Health Officer, Dr. Mary Currier, to provide a foreword for this book. Under Dr. Currier's leadership the state of Mississippi made significant public health gains, yet there is an acknowledgement that more can be done. Her discussion of the many important public health prevention projects in Mississippi that have benefited children and paved the way for a stronger public health system in the state is noteworthy. Dr. Currier's recognition of the importance of beginning early in a child's life with appropriate investments and interventions has resulted in many positive outcomes.

Let us celebrate our gains and build on the momentum they provide to ensure all of Mississippi's children develop to their fullest potential!

Heather L. Hanna, Ph.D.
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Co-Directors, Mississippi KIDS COUNT

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FOREWORD

BY DR. MARY CURRIER

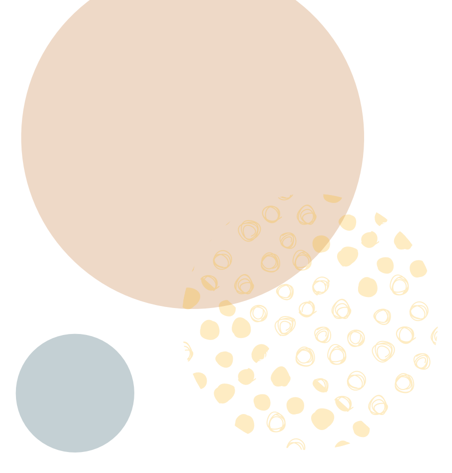
I am so pleased to have this opportunity to speak about Mississippi, its children, and the public health prevention efforts I have witnessed during my 34-year career in state service. Being recently retired from the role of State Health Officer at the Mississippi State Department of Health (MSDH), I am in a position to reflect on some of the systemic causes of poor health in Mississippi, the state's gains in public health prevention over the years, and what remains to be done.

My family moved to Mississippi when I was five years old. Since then, I have only left the state for a short length of time to continue my education. Mississippi is home, and I love it. I love the people, the land, and the opportunity here.

Early on in my education, it became clear to me that preventing disease experienced by many adults was much more palatable than treating disease. It was this prevention focus that led me to a career in public health and a belief that our social and physical environment affects our health and well-being. These environmental factors span a range of domains, from building design to traffic safety to school policy, and so on. For example, one might examine the appeal and accessibility of taking the stairs vs. the elevator; whether citizens have safe sidewalks and crosswalks that allow them to walk, rather than drive a car; and whether schools are serving healthy or unhealthy foods. These are all policy considerations with public health implications.

The biggest environmental driver of poor health is poverty. The cycle of poverty in families, and the difficulty of rising above it without help, affects everyone in the state, not just those in poverty. Without a safe place to live, a food supply that is assured, and shoes and a jacket to be warm while heading for school, children cannot learn well and will fall behind. Learning cannot be a priority. The cumulative impacts of environmental poverty and racism are associated with the health and well-being of our children, families, and communities.

There is a role for state agencies in Mississippi to address the environmental drivers of poor health among children and families. The Mississippi State Department of Health (MSDH) engages in 1) health promotion by providing healthy food, nutritional education, and breastfeeding support for mothers and infants; 2) health service provision through clinics for vaccines and family



planning; and 3) a regulatory role through inspections of child care centers and some health care facilities. Additionally, other state agencies, including the Departments of Child Protective Services; Rehabilitation Services; Education; Mental Health; Human Services; and the Division of Medicaid provide assistance for children and families that are necessary for good health. I am proud to report that, due to Medicaid and the Children's Health Insurance Program, most children have some access to health care in Mississippi, regardless of the situation they were born into.

Many of the services provided by these agencies form a support system that serves all children who need it, not just those in poverty. For example, the MSDH Early Intervention Program, which is supported by state and federal funds, and in part by health insurance, provides systematic access to service coordination for infants and young children who are developmentally delayed or at risk for such. Without this program, parents have little help in discovering services necessary for their children to reach their potential. Nevertheless, many more children than those currently served could benefit from these services, indicating a need for 1) expanded funding for this program, 2) greater education of, and early detection by, parents and physicians, and 3) more health care providers specializing in early childhood developmental health to address these issues before they require early intervention services.

"I am also proud of the Mississippi State Department of Health being accredited by the national Public Health Accreditation Board. This was an agency-wide effort that took several years to accomplish."

"**Promoting developmental screenings and wellness** checks for all young children is necessary for the **long-term health** of our state."

Another important—and perhaps the greatest—public health success by MSDH has been ensuring that children in Mississippi are immunized. For every dollar invested in vaccinating our children, there is a $10 return due to savings in health care and loss of productivity. In Mississippi, almost all children entering school are appropriately vaccinated, protecting both the immunized children and those around them who have an illness that prevents them from being vaccinated themselves. I am also proud of the Mississippi State Department of Health being accredited by the national Public Health Accreditation Board. This was an agency-wide effort that took several years to accomplish.

Compared to other states, Mississippi has high rates of infant and maternal mortality. However, improvement is occurring slowly in some areas with a concerted effort of public and private organizations working together. With the creation of the Maternal Mortality Review Committee, established by the Mississippi legislature, maternal mortality data is now being assessed in detail, increasing the opportunity for making more data-driven decisions in preventing these tragedies. A number of public health policies are being implemented to improve maternal and infant health, including provision of places for women to breastfeed and not accepting elective deliveries of babies before 39 weeks gestation.

Nevertheless, much work remains to be done in these and other areas. Mississippi consistently has the highest, or next to the highest, obesity rate among states. Additionally, the importance of quality early childhood learning settings cannot be overstated. Increasing the standards of child care centers to ensure all children are safe and have appropriate interactions with well-trained child care providers is essential, particularly for the youngest and most vulnerable children. Furthermore, promoting developmental screenings and wellness checks for all young children is necessary for the long-term health of our state. These are just a few of the changes that can be made. Most importantly, public policy and programmatic decisions need to be made with the long term in mind. It can take time to see the results of these changes, but decisions made for the short term often result in short-term gains and no real change.

In summary, the goal of a strong public health system that spans across state agencies and other institutions is to ensure Mississippi's children and families have the basic supports they need for children to grow and develop optimally, so they can contribute to our state and improve well-being for all. Mississippi faces a number of obstacles—most notably profound poverty—in accomplishing this goal. Therefore, we must continue to further the work that has been done over the years and use a public health lens that addresses environmental causes of poor health to create additional solutions. Our children are our future and our blessing, and they are worth the investment of our time and public dollars.

DR. MARY CURRIER

DR. MARY CURRIER

Mary Currier became Mississippi's State Health Officer in 2010 after serving as State Epidemiologist from 1993 through 2003 and again from 2007 through 2009.

Dr. Currier has 34 years of state service experience and 28 years serving in public health. Prior to serving as State Epidemiologist, she was a medical consultant with the Mississippi State Department of Health where she began her career as a staff physician for the Prenatal Care, Family Planning, STD and Pediatrics Programs.

Dr. Currier is a member of the American Medical Association, the Mississippi Central Medical Society, the American Public Health Association and American College of Preventive Medicine.

Dr. Currier received her Doctor of Medicine degree from the University of Mississippi School of Medicine in 1983 and her Master of Public Health degree from the Johns Hopkins School of Hygiene and Public Health in 1987 and is Board Certified in General Preventive Medicine and Public Health.

WHAT WOULD IT TAKE?

FOR MISSISSIPPI TO BE **NUMBER ONE** IN THE **SOUTHEAST**

For almost three decades, the Annie E. Casey Foundation has produced state rankings of child well-being. Mississippi continues to be in or near last place in the Southeast for all of the following indicators. What would have to change to move Mississippi to number one in the Southeast (out of 10 states)?

INDICATORS:

ECONOMIC WELL-BEING	COMPARED YEARS	THEN	NOW	CURRENT RANKING	TO BE #1 IN SOUTHEAST
Percent of children in households that spend more than 30% of their income on housing	2010 & 2016	35%	28%	4TH	26%
Percent of children in poverty (income below $24,339 for a family of two adults and two children in 2016)	2010 & 2016	33%	30%	10TH	21%
Percent of children living in families where no parent has full-time, year-round employment	2010 & 2016	39%	34%	9TH	29%
Percent of teens ages 16 to 19 not attending school and not working	2010 & 2016	13%	9%	8TH	7%
EDUCATION					
Percent of 4th graders who scored below proficient in reading	2009 & 2017	78%	73%	9TH	59%
Percent of 8th graders who scored below proficient in math	2009 & 2017	85%	78%	8TH	65%
Percent of young children not in school	(2009-2011) & (2014-2016)	47%	48%	1ST	
Percent of high school students not graduating on time	(2010-2011) & (2015-2016)	25%	18%	6TH	11%
HEALTH					
Child and teen death rate (deaths per 100,000 children ages 1 to 19)	2010 & 2016	38	40	10TH	23
Percent of low-birthweight babies	2010 & 2016	12.1%	11.5%	10TH	8.7%
Percent of children without health insurance	2010 & 2016	8%	5%	8TH	2%
Percent of teens ages 12 to 17 who abused alcohol or drugs in the past year	2015-2016	N/A	4%	N/A	4%
FAMILY AND COMMUNITY					
Percent of children in families where the household head lacks a high school diploma	2010 & 2016	17%	13%	8TH	11%
Percent of children in single-parent families	2010 & 2016	46%	45%	10TH	36%
Percent of children living in high-poverty areas (census tracts with poverty rates ≥ 30%)	(2008-2012) & (2012-2016)	28%	26%	10TH	12%
Teen birth rate (births per 1,000 females ages 15 to 19)	2010 & 2016	55	33	9TH	19

States included in the Southeast are Alabama, Arkansas, Florida, Georgia, Kentucky, Mississippi, South Carolina, North Carolina, Tennessee, and Louisiana.

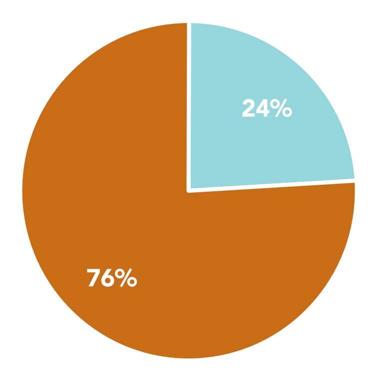
Source: Annie E. Casey Foundation, KIDS COUNT Data Center. More recent data may be available for some indicators, http://datacenter.kidscount.org

CHILD & FAMILY DEMOGRAPHICS IN MS

ABOUT 1 IN 2 KIDS ARE CHILDREN OF COLOR.[1]

TOTAL CHILD POPULATION: 713,567

TOTAL POPULATION BY AGE, 2017[2]



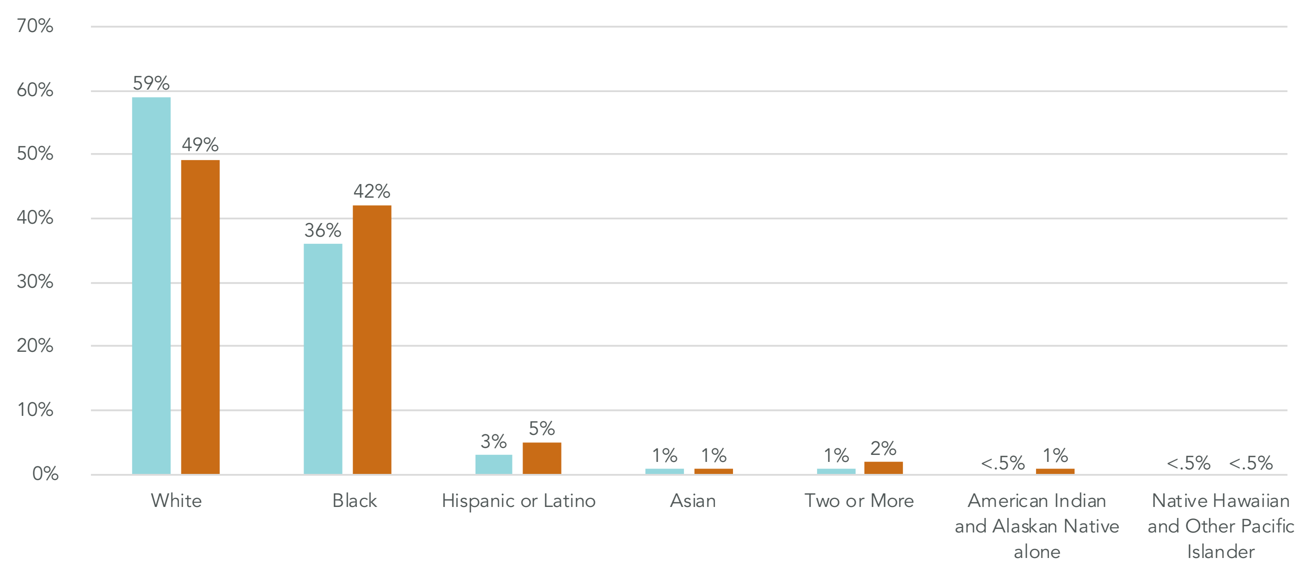
Under age 18 Age 18 and over

4.6%

CHILDREN IN IMMIGRANT FAMILIES, 2017[3]

30,641

TOTAL POPULATION BY RACE AND ETHNICITY, 2017[1,4]



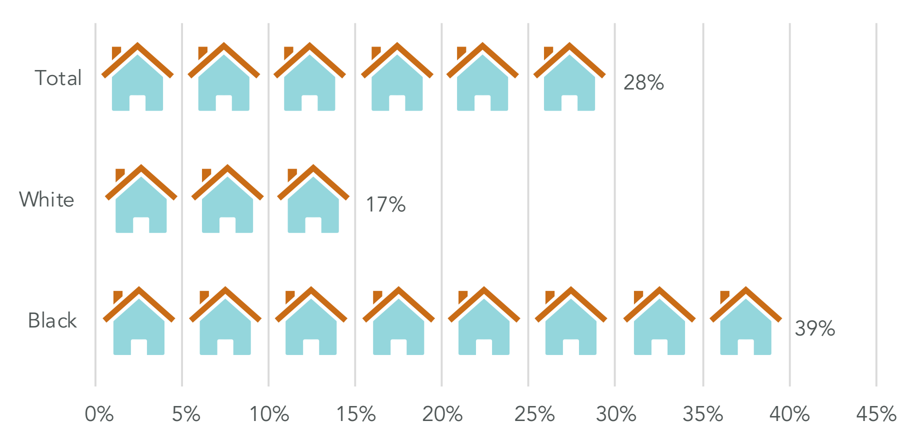
ECONOMIC WELL-BEING

INTRODUCTION

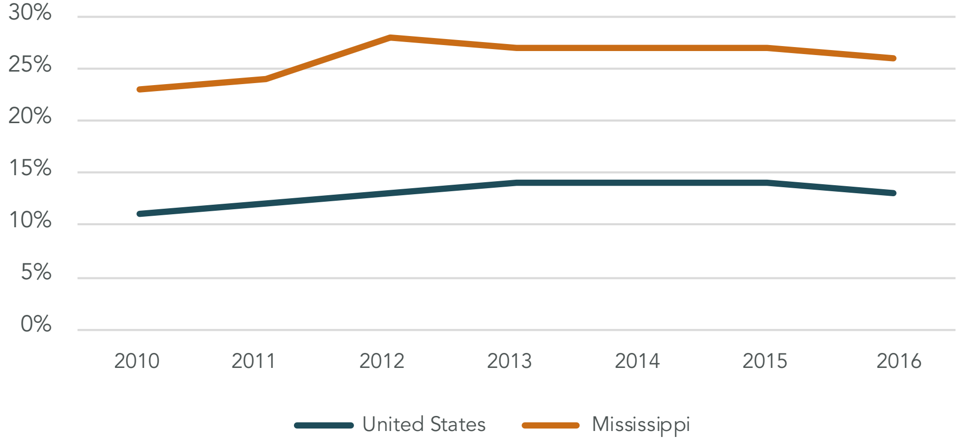
While Mississippi improved on the four measures of economic well-being highlighted in the national 2018 KIDS COUNT Data Book, in this section we explore some additional indicators of economic well-being, drilling down to the county level and disaggregating the data by race when possible. We do this in order to show that not all children experienced improvements and to emphasize where additional prevention-related resources may be directed. Looking at these data, we find a very different economic picture for Blacks than for Whites in the state. For example, the median income is $27,800 for Black families compared to $70,000 for White families, and Black families are twice as likely to experience a high housing cost burden. Consequently, Black children are more than three times as likely as White children to live in poverty. Maps in this section demonstrate the geographic diversity in child indicators of well-being, and the data in this section also show large discrepancies between the well-being of children in Mississippi versus the nation as a whole.

CHILDREN LIVING IN HOUSEHOLDS WITH HIGH HOUSING COSTS BY RACE IN MS, 2016[1]

The chart on the right shows the percentages of children in households with high housing cost burdens by race in Mississippi in 2016. Households with high housing cost burdens are those in which more than 30% of monthly pre-tax income is spent on housing, such as rent, mortgage, property taxes and insurance expenses. The chart on the right indicates Black children (39%) are more than twice as likely to live in households with a high housing cost burden than White children (17%) in Mississippi.



CHILDREN LIVING IN HIGH POVERTY AREAS*, 2010-2016[2]



*Note: Each data point represents a five-year estimate from the American Community Survey

The chart on the left shows the percentages of children living in high poverty areas from 2010 to 2016 in both Mississippi and in the United States. The economic recession of 2008 affected poverty rates in Mississippi and the United States as a whole. While the trends were similar for both Mississippi and the United States between 2010 and 2016, Mississippi's poverty rates increased slightly more than the national average. In 2010, the percentage of children in high poverty areas in Mississippi was 23%, while the national average was 11%. In 2016, these percentages increased to 26% in Mississippi and 13% in the United States.

The map on the right indicates the percentages of children living in poverty by county in Mississippi in 2017. In this year, the statewide average of children living in poverty was 27.6%, while the national average was 18.4%. Leflore County had the highest percentage of children living in poverty in the state (60.2%), followed by Quitman County (57.5%). Rankin County had the lowest percentage of children living in poverty in Mississippi (11.9%).

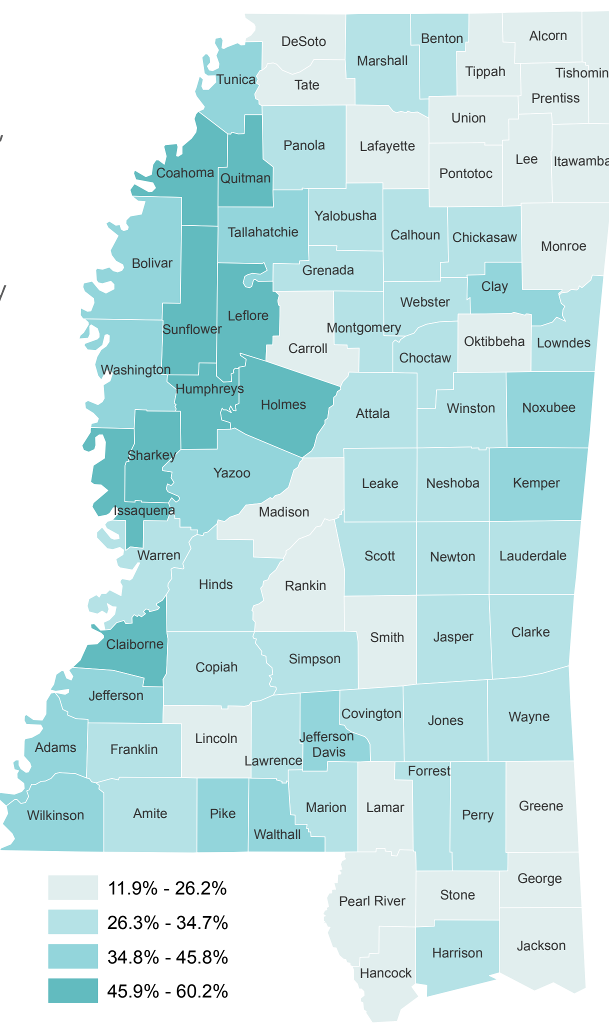
The 2017 rates of children living in poverty differ throughout the state. Leflore County's population was 24.5% White and 73.2% Black, while Rankin County's population is approximately 77% White and 20% Black.[5] The chart below shows the racial differences of children living in poverty across the state between 2008 and 2017. While the poverty gap between the White and Black populations slightly decreased overall, Black children were more than three times as likely as White children to live in poverty in Mississippi in 2017.

Highest		Lowest	
Leflore	60.2%	Lamar	18.6%
Quitman	57.5%	Lafayette	18.4%
Humphreys	56.2%	Madison	14.3%
Claiborne	53.5%	DeSoto	12.8%
Holmes	52.5%	Rankin	11.9%

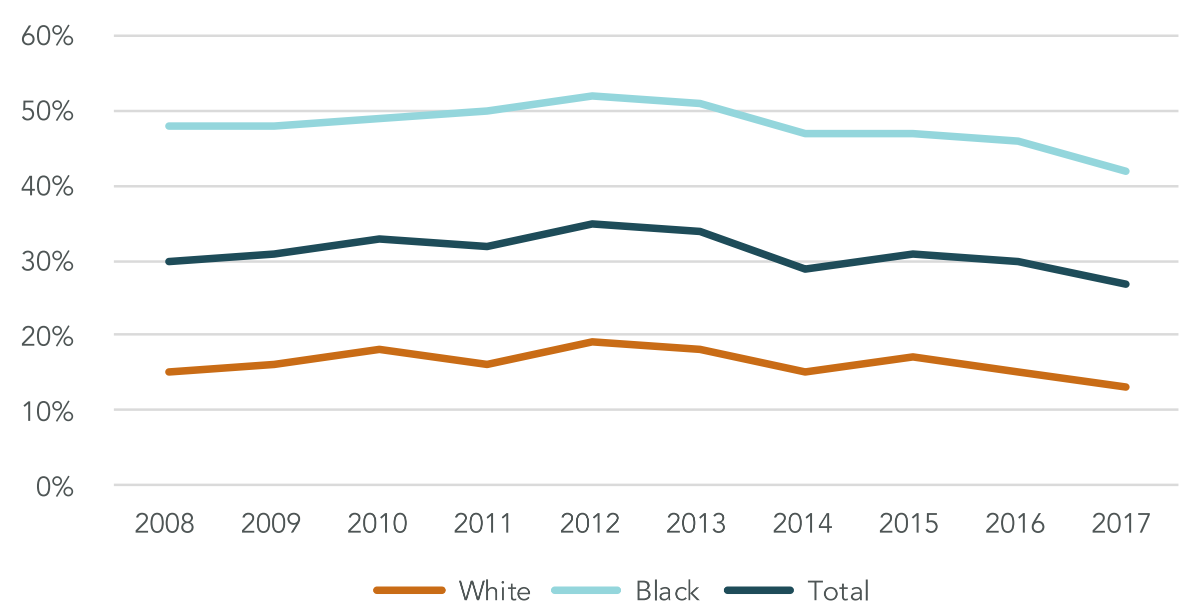
MS: 27.6%

U.S.: 18.4%

CHILDREN LIVING IN POVERTY BY COUNTY IN MS, 2017[3]

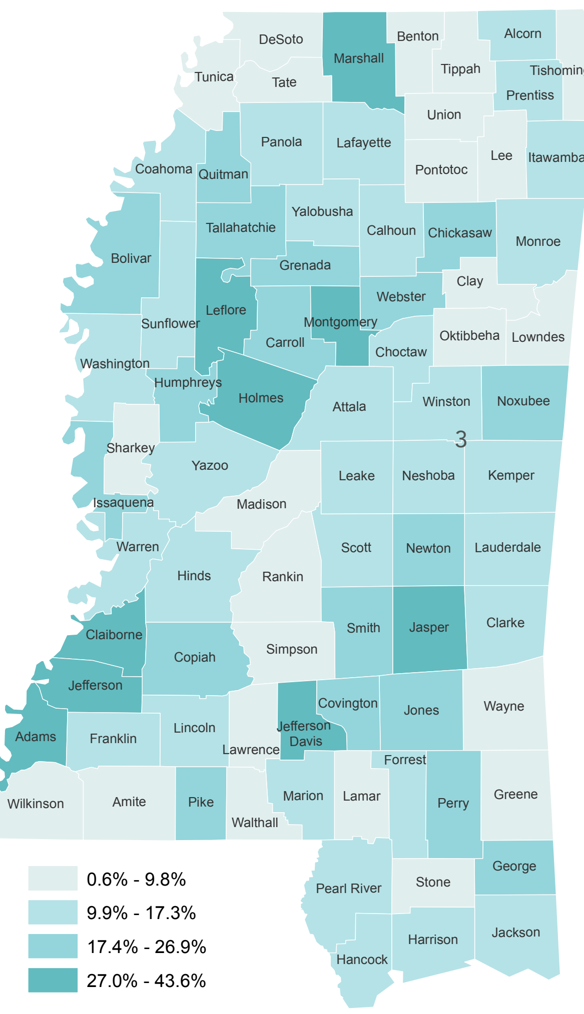


CHILDREN LIVING IN POVERTY BY RACE IN MS, 2008-2017[4]



CHILDREN UNDER SIX YEARS OLD WITH NO PARENT WORKING BY COUNTY IN MS, 2016[5]

The map on the right reflects that 13.5% of children in Mississippi under age six lived in homes with no parent working in 2016. Holmes County had the highest percentage of children under age six with no employed parent (43.6%), followed by Jefferson Davis County (36.8%), Montgomery County (36.3%), Leflore County (34.5%), and Adams County (34.3%). Greene County, a county with a predominately White population, had the lowest percentage of children under age six with no employed parent (0.6%).[5-6]

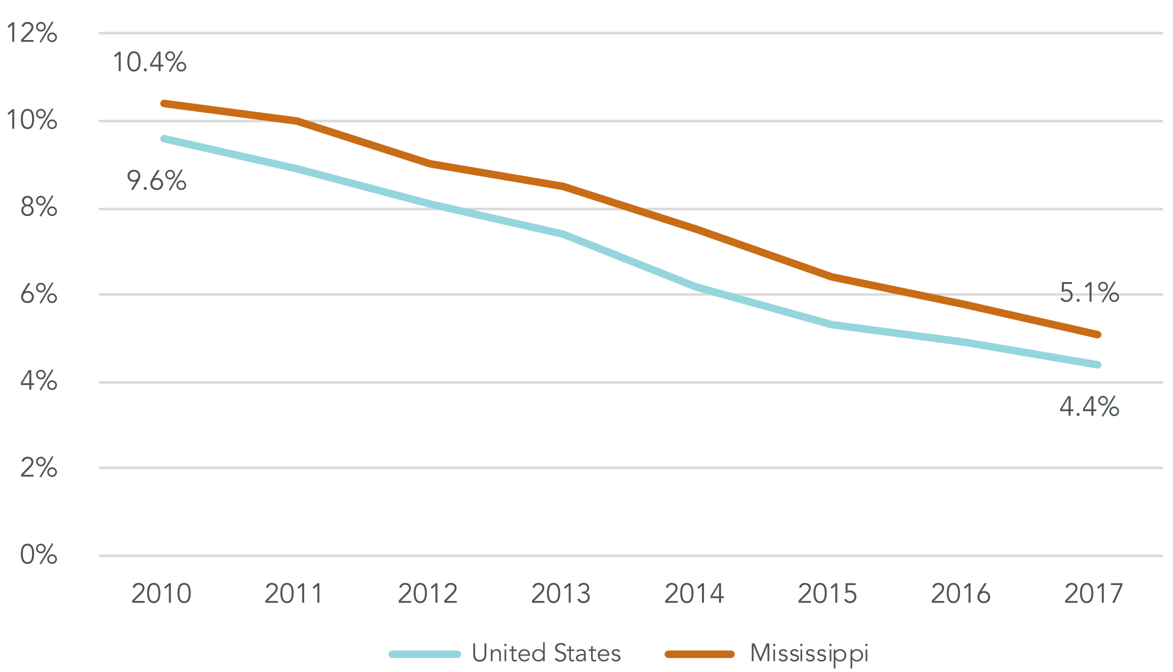


Highest	
Holmes	43.6%
Jefferson Davis	36.8%
Montgomery	36.3%
Leflore	34.5%
Adams	34.3%

Lowest	
Tippah	4.7%
Lamar	4.6%
Rankin	3.2%
Benton	2.5%
Greene	0.6%

UNEMPLOYMENT RATES, 2010-2017[7]

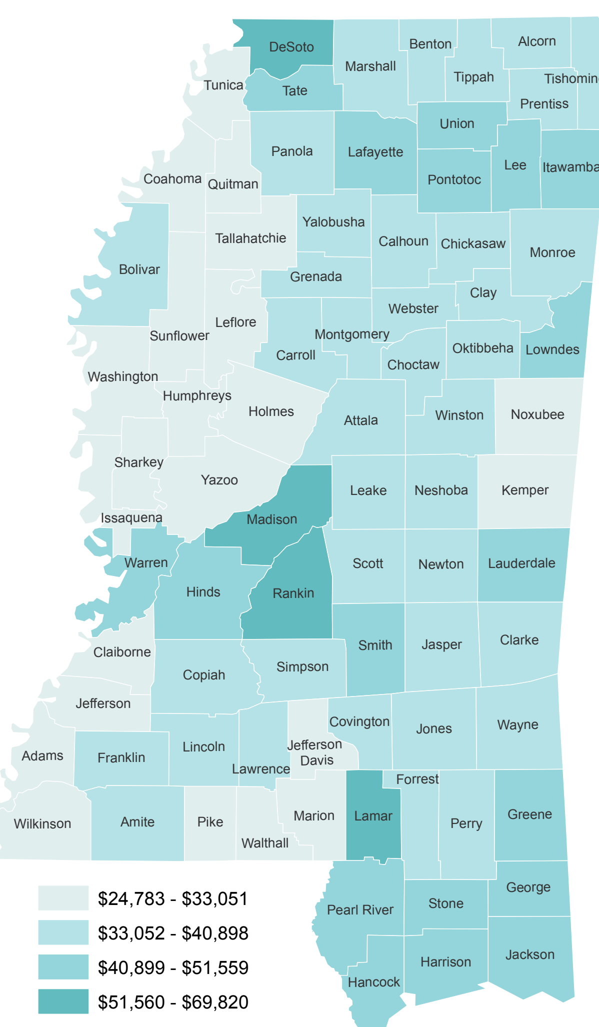
The chart below indicates unemployment rates in Mississippi and the United States from 2010 and 2017. Both rates have continued to decrease since the end of the economic recession in 2009. Mississippi's unemployment rate has decreased by more than half from 2010 to 2017, along with the national trend.



The map on the right shows the 2017 median household income level for each county in Mississippi. The 2017 median income in Mississippi was $43,595, less than the national median income of $60,336. The counties with the highest median incomes in Mississippi have populations with a majority of White residents, while the counties with the lowest median incomes have mostly Black residents. The bar chart below indicates that the median income levels for White members of the workforce in Mississippi were more than twice those for Black workforce members in 2016.

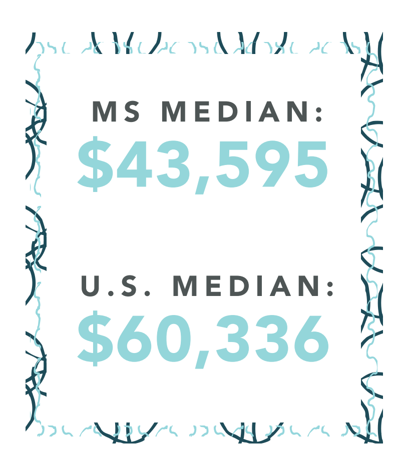
Median income differs by gender as well as by race. Research from the National Partnership for Women and Families in 2017 shows that, when holding constant for education levels, women in Mississippi's workforce are paid approximately 76 cents for every dollar paid to men.[9]

MEDIAN HOUSEHOLD INCOME BY COUNTY IN MS, 2017[8]

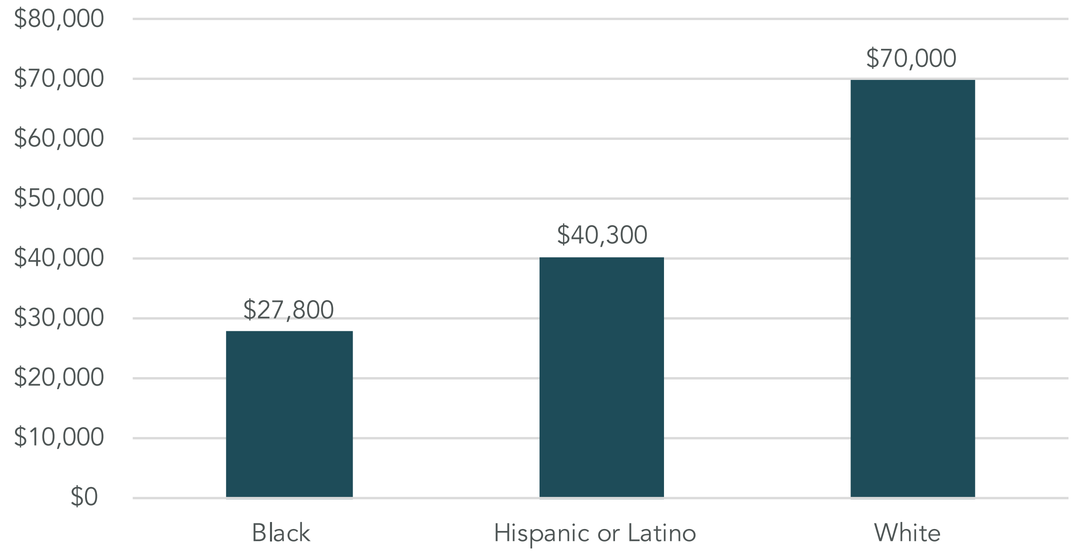


Highest	
Madison	$69,820
DeSoto	$66,125
Rankin	$65,504
Lamar	$57,125
Lee	$51,559

Lowest	
Jefferson	$27,925
Quitman	$26,740
Humphreys	$26,489
Leflore	$25,569
Holmes	$24,783



MEDIAN HOUSEHOLD INCOME BY RACE AND ETHNICITY IN MS, 2016[10]



FOOD INSECURE CHILDREN IN MISSISSIPPI, 2016[11-12]

Children who are food insecure live in households that at times experience a lack of access to enough or nutritionally adequate foods. Mississippi's percentage of food insecure children is higher than that of the national percentage. The map below shows the counties with the highest rates of food insecure children in Mississippi in 2016. Issaquena County had the highest rate of child food insecurity in the nation in 2016 (40%). Research from Feeding America in 2016 shows that food insecurity increases children's chances of:

- Risks for delays in developmental milestones
- Low academic performance
- Poor physical and mental health
- Low birthweight

SCHOOL BUS

Food Insecure Children in **MS**
24.4%

Food Insecure Children in **US**
17.5%

Mississippi's food insecure children would fill 2,453 school buses.

Sunflower
Leflore
Carroll
Washington
Humphreys
Holmes
Sharkey
Yazoo
Issaquena
Warren
Hinds
Claiborne
Copiah
Jefferson

16.7% - 21.6%
21.7% - 25.3%
25.4% - 29.7%
29.8% - 40%

MS

	Food Insecure Children	MS Rate	Average Meal Cost	Annual Food Budget Shortfall	US Rate
2016	176,580	24.4%	$2.97	$304,654,000	17.5%
2015	191,750	26.3%	$2.88	$332,456,000	17.9%
2014	200,600	27.4%	$2.88	$338,917,000	20.9%

HIGHEST

	Food Insecure Children	Rate	Average Meal Cost	Annual Food Budget Shortfall
Issaquena	80	40.0%	$3.12	$240,000
Jefferson	630	35.6%	$3.02	$1,402,000
Holmes	1,730	34.5%	$3.25	$3,592,000
Claiborne	670	33.7%	$3.15	$1,662,000
Humphreys	810	33.3%	$3.06	$1,551,000

LOWEST

	Food Insecure Children	Rate	Average Meal Cost	Annual Food Budget Shortfall
Rankin	6,030	16.7%	$3.14	$9,646,000
DeSoto	7,800	17.0%	$2.96	$11,006,000
Madison	4,510	17.3%	$3.35	$9,001,000
Lamar	2,960	19.4%	$3.07	$4,646,000
Lafayette	1,910	20.2%	$3.75	$6,317,000

POLICY CONSIDERATIONS

Increase Understanding of Career Pathways and Options

Background:
It is the mission of public education in Mississippi to give students multiple opportunities to develop knowledge and skills in order to achieve success.[1] Success in the workforce can be demonstrated in a broad range of career paths. Young people often learn that they are not interested in their chosen career paths or discover careers compatible with their interests and skillsets later in life, forcing them to start over. Delayed entry into the labor market among those unaware of all applicable career options can affect individuals' lifetime earnings.[2] The Mississippi Department of Education implements Career and Technical Education (CTE) programs in 242 public high schools (out of 332 statewide) to help students prepare for a broad range of careers.[3-5] Ninety-five percent of students who completed CTE programs in 2017 graduated from high school, which is higher than the state average of 83% and the national average of 84%.[4-5] Creating career-oriented programs that consist of relevant and engaging instruction for all levels of education and that encourage students to develop career-related skills can improve students' opportunities for success.[6] Furthermore, the Get2College program provides college planning services to families and educators to assist with college entry.

Recommendations:

- Provide high school staff with comprehensive professional development and technical assistance for preparing high school graduates for the workforce.
- Provide information and training for school counselors to introduce a wide variety of career options to students at a young age, including professional specialty areas and the necessary requirements of specific careers in order to better advise students of relevant courses and other opportunities.
- Expand funding for CTE programs, so all high school and community college students have opportunities to participate statewide.
- Expand flexible apprenticeship programs, allowing for increased stakeholder input to meet needs of prospective employers, while increasing students' marketability.

Ensure Equal Pay for Women to Benefit Families

Background:
Overall in Mississippi, women are paid 76 cents for every dollar paid to men. This disparity is even greater for Black women, who are paid 56 cents for every dollar paid to White men.[7] This pay gap cannot be explained solely through employment choices that women make. Gender discrimination, implicit biases, and the need for flexible working hours in order to care for children are all contributing factors to this disparity.[8] Additionally, a lack of paternity leave reinforces the idea that women should be the primary caregivers for children, requiring them to sacrifice wages for flexible schedules.[9] These lowered wages contribute to the high poverty rate of children in Mississippi. Of children under age 18, 52% live in families with incomes less than 200% of the federal poverty level. Of female-headed households in Mississippi, just 28% received child support in 2016, so single mothers are often the sole income earners for their households.[10] Mississippi is one of two states in the nation that does not have an equal pay law, which would protect employees from discriminatory compensation practices based on gender. Mississippi is also one of many states that does not have a pay transparency law, which would allow employees to discuss their wages and apply to receive lost wages if discriminatory wage practices are found, paving the way for women and families to increase their opportunities, boost the economy, reduce poverty rates, and improve outcomes for their children.[11-12]

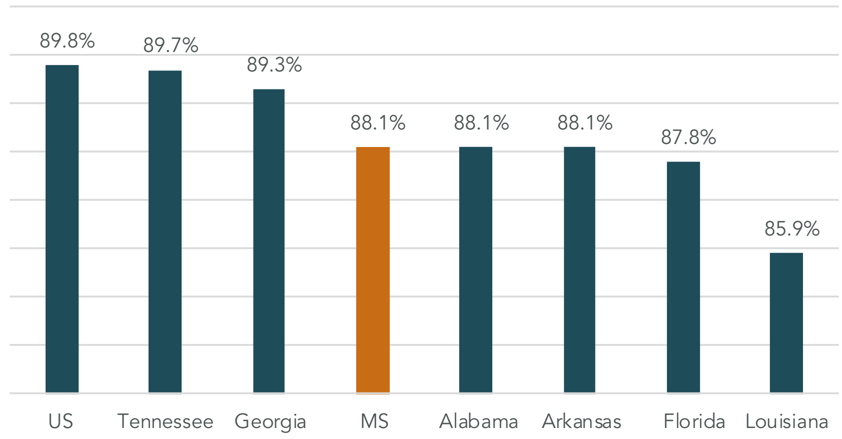
Recommendations:

- Enact legislation that guarantees equal pay for equal work.
- Enact a state pay transparency law to protect employees from retaliation for discussing wages.
- Create protections for employees who request flexible work arrangements.
- Encourage employers to offer benefits that include paid family leave opportunities, including maternity and paternity leave.
- Set a statewide minimum wage that accounts for the cost of living and is designed to adjust for inflation.
- Enact a state Earned Income Tax Credit to help working mothers retain more of their income.

INTRODUCTION

While Mississippi had mixed results on the four measures of children's health highlighted in the national 2018 KIDS COUNT Data Book, in this section we again explore some additional indicators, drilling down to the county level and disaggregating the data by race when possible. We do this in order to show that not all children experienced improvements and to emphasize where additional prevention-related resources may be directed. Looking at these data, we find that Black families have less optimistic perceptions of their children's health than White families, with Black parents being less likely to state their children are in excellent or very good health and more likely to state that their children are obese. Black mothers are less likely than White mothers to receive prenatal care, and vaccination rates for Black children are lower than for White children.

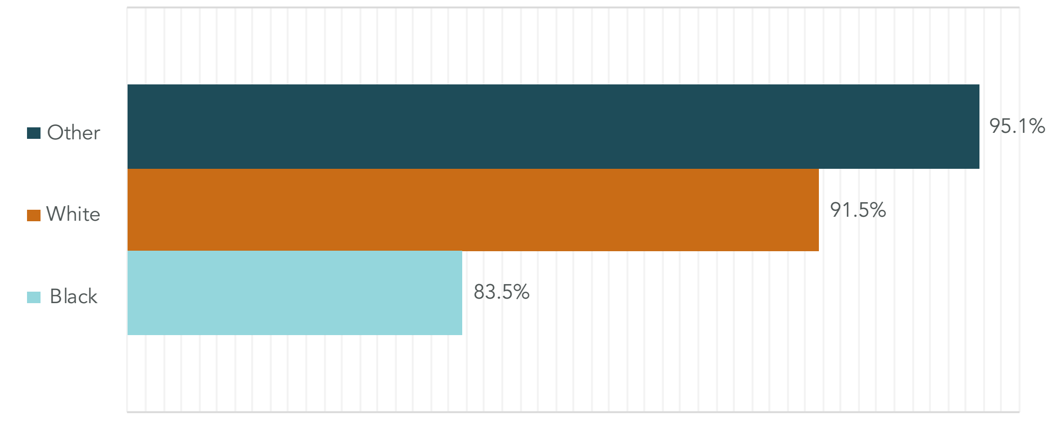
CHILDREN IN EXCELLENT OR VERY GOOD HEALTH, 2016-2017[1]



The health status of children aged 0 to 17 years are categorized in the 2016-2017 National Survey of Children's Health as "excellent or very good," "good," and "fair or poor," as reported by their parents. The chart on the left compares the rate of children in Mississippi in "excellent or very good" health with the rates of children in other states in the Southeast and in the United States as a whole. All percentages of children reported to be in "excellent or very good" health in the states shown here are below the national average of 89.8%. Of these southeastern states, Mississippi has the third highest rate (88.1%), along with Alabama and Arkansas. When compared with parents in other southeastern states, parents in Mississippi perceive their children's health status to be similar. When these perceptions are broken down by race, however, there are meaningful differences in White parents' and Black parents' perceptions of their children's health.

CHILDREN IN EXCELLENT OR VERY GOOD HEALTH BY RACE IN MS, 2016-2017[1]

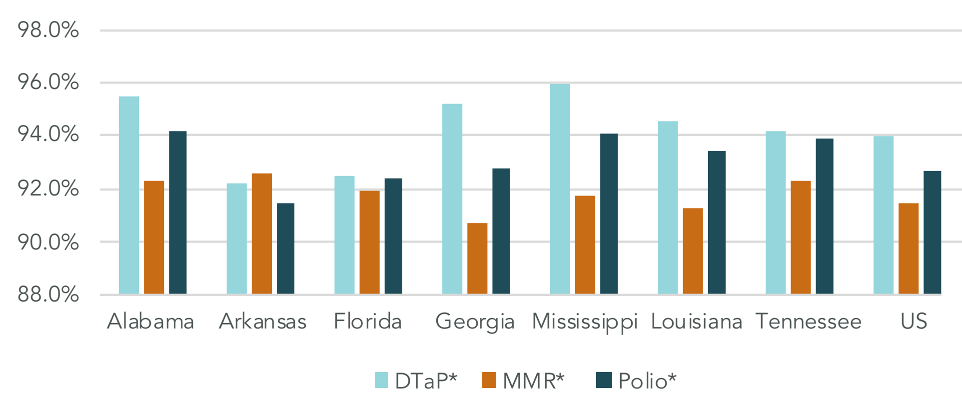
The chart below shows the health status of children in Mississippi by race in 2016-2017. Overall, the quality of Black children's health was rated lower than White children's and children of other races. In Mississippi, 91.5% of White families reported their children to be in "excellent or very good health," compared to 83.5% of Black families.



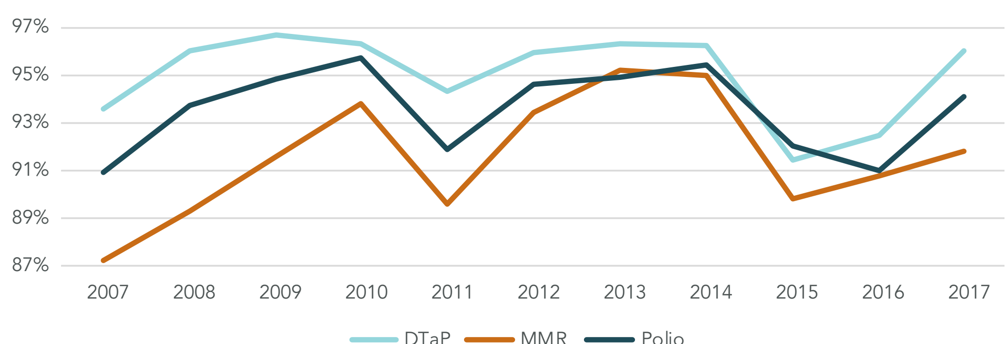
VACCINATION COVERAGE

The chart on the right indicates the 2017 vaccination rates among children aged 19 to 35 months in several southeastern states. In 2017, Mississippi had the highest Diphtheria toxoid, Tetanus toxoid, and acellular Pertussis (DTaP) vaccination rate of these states (96%), a rate higher than that of the United States as a whole (94%). There was less variation in the 2017 Measles, Mumps, and Rubella (MMR) vaccine rates among these southeastern states. Mississippi's MMR vaccination rate (91.8%) was slightly higher than the national rate (91.5%). Mississippi's 2017 Polio vaccination rate ranked the second highest among these southeastern states (94.1%) and higher than the national average (92.7%).

VACCINATION RATES AMONG CHILDREN AGED 19-35 MONTHS, 2017[2]

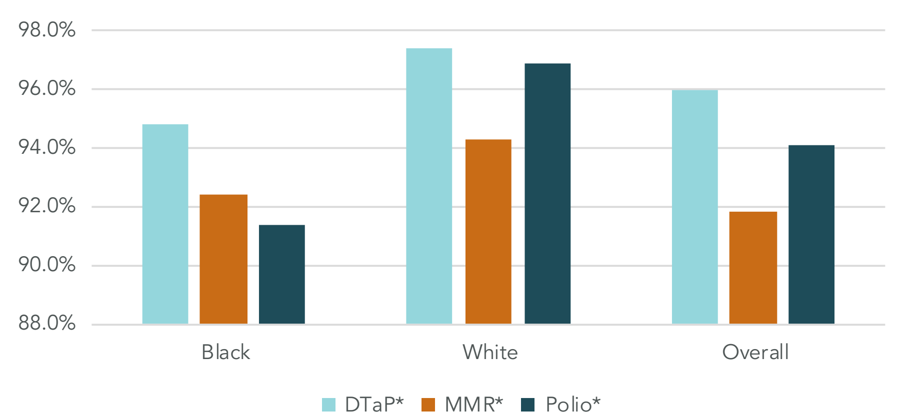


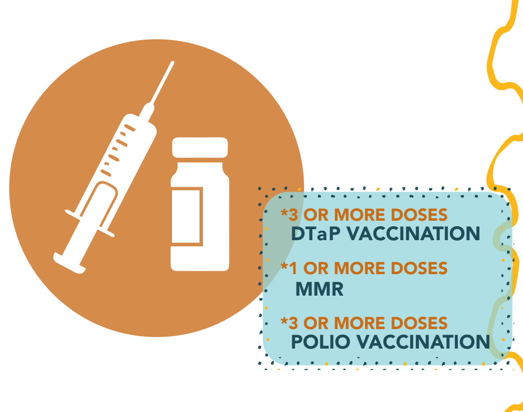
VACCINATION RATE TREND IN MS, 2007-2017[2]



The bar chart below shows the vaccination rates for children aged 19 to 35 months by race in Mississippi in 2017. Although Mississippi ranks as one of the highest vaccinated states nationwide, vaccination rates vary within the state by race. Of the vaccinations listed below (DTaP, MMR, Polio), White children in Mississippi received all three at rates higher than the national rates in 2017. Black children in Mississippi received both DTaP and MMR vaccines at rates higher than the national average but Polio vaccinations at a rate lower than the national average in 2017.

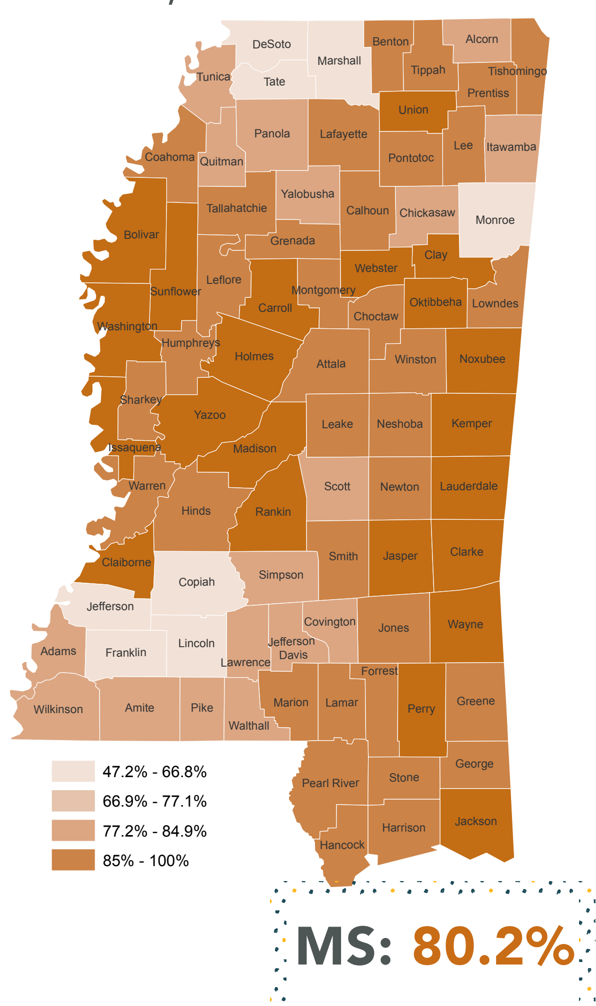
VACCINATION RATES AMONG CHILDREN AGED 19-35 MONTHS BY RACE IN MS, 2017[2]





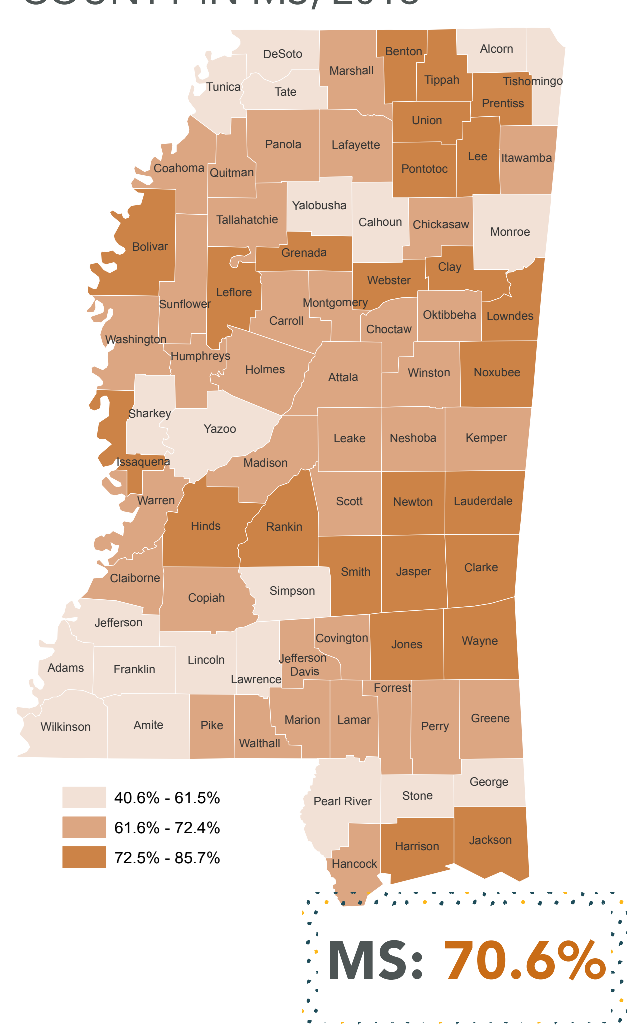
PRENATAL CARE

WHITE WOMEN RECEIVING PRENATAL CARE DURING FIRST TRIMESTER BY COUNTY IN MS, 2016[3]



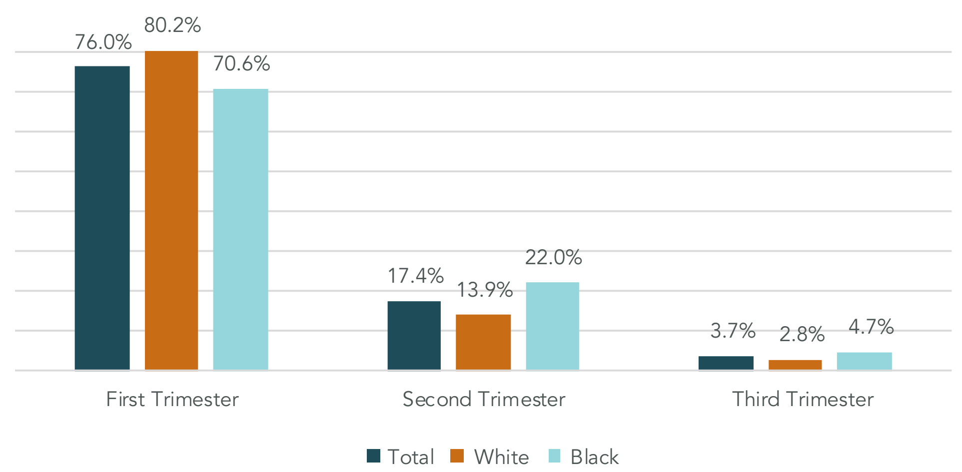
MS: 80.2%

BLACK WOMEN RECEIVING PRENATAL CARE DURING FIRST TRIMESTER IN MS BY COUNTY IN MS, 2016[3]



MS: 70.6%

PRENATAL CARE ACCESS BY TRIMESTER AND BY RACE IN MS, 2016[3]



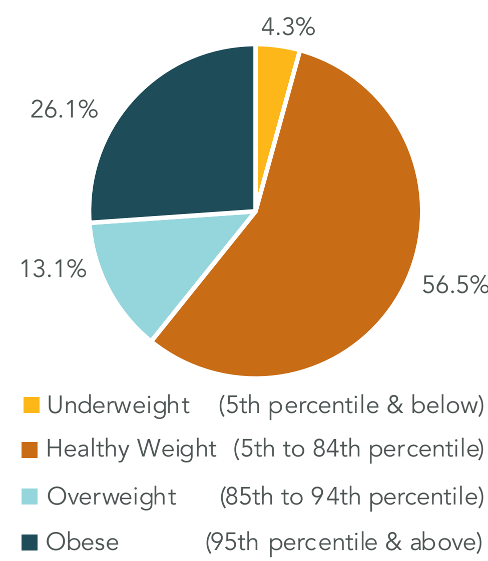
Prenatal care can improve the health of both infants and mothers. The maps above show the percentages of expectant mothers who first accessed prenatal care during their first trimester of pregnancy by race in each county in Mississippi in 2016. These maps indicate that, in Mississippi, a higher percentge of White women recieved prenatal care during their first trimesters than Black women.

The chart on the left shows that most expectant mothers in Mississippi first accessed prenatal care during their first trimester of pregnancy in 2016. The timing of the first prenatal care visit, however, varies by race. In 2016, Black women accessed prenatal care for the first time during their second and third trimesters at rates almost twice as those of White women.

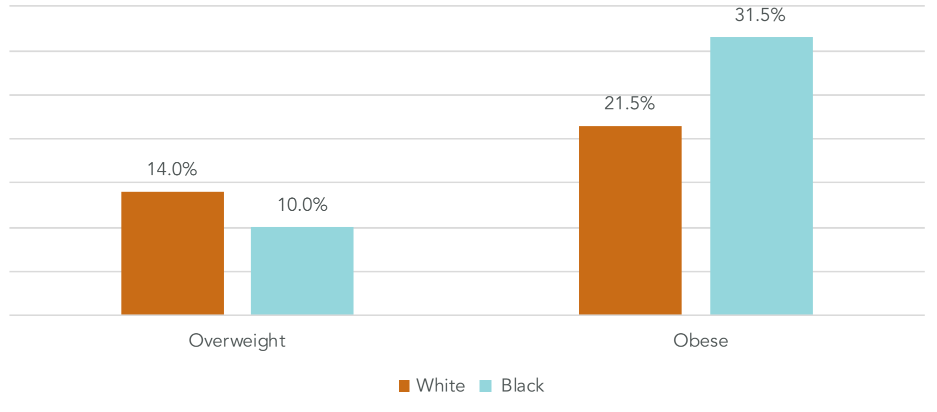
CHILDHOOD OBESITY

WEIGHT RANKINGS FOR CHILDREN AGED 10-17 YEARS IN MS, 2016-2017[4]

The charts on this page show the percentages of Mississippi children in various weight categories, as reported by their families. The pie chart on the right shows that approximately half of 10- to 17-year-old children in Mississippi were reported to be at a healthy weight (56.5%). While only 13.1% of Mississippi children were reported to be in the overweight category, almost twice as many children were ranked as obese (26.1%). A higher percentage of Black children were reported to be obese than White children in Mississippi, while a higher percentage of White children were ranked as overweight than Black children. Many factors can affect children's weight, such as access to nutritious food, physical activity, and social supports. Overall, the highest percentage of parents surveyed reported that their children typically excercise one to three days per week.



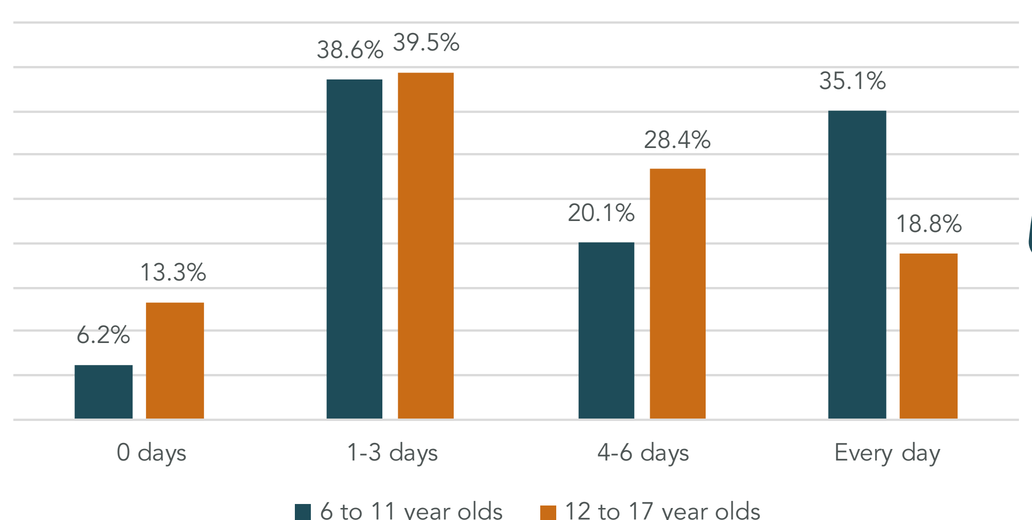
OVERWEIGHT & OBESE CHILDREN AGED 10-17 YEARS BY RACE IN MS, 2016-2017[6]



HEALTH RISKS OF OBESITY IN CHILDHOOD

- diabetes
- sleep apnea
- asthma
- joint problems
- liver disease
- anxiety & depression[5]

CHILD AND TEEN PHYSICAL ACTIVITY IN MS, 2016-2017[7]



PREVENTIVE CARE

PRACTICING PEDIATRICIANS BY COUNTY IN MS, 2017[8]

The map on the right shows the primary locations of actively practicing pediatricians' clinics in each county in Mississippi. Hinds County has the most pediatricians in the state (114), more than three times the county with the second most pediatricians, DeSoto County (35).

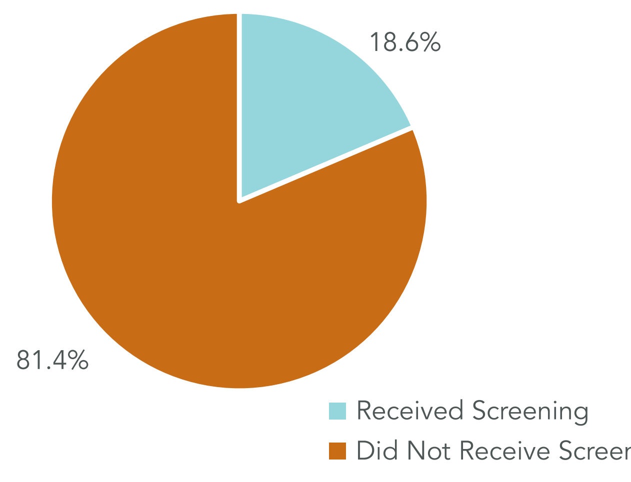
The pie chart below shows the developmental screening rates for 9- to 35-month-old children in Mississippi in 2016-2017, as reported by their parents. In Mississippi 18.6% of children aged 9 to 35 months received developmental screenings, compared to 31.1% of children nationwide. Mississippi ranks as the state with the second lowest rate in the nation, above Florida (16%).

The bar chart below shows the rates for children aged 1 to 17 years receiving preventive dental care in Mississippi. A higher percentage of Black children in Mississippi received preventive dental visits in 2016-2017 than White children.

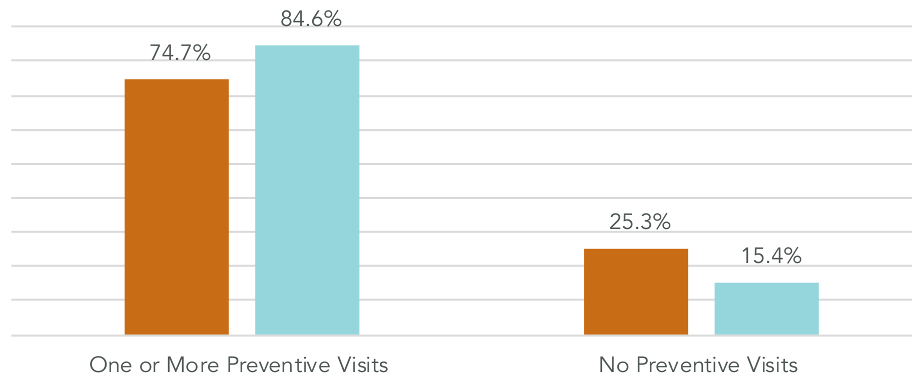
0 - 2
3 - 11
12 - 34
35 - 114

TOTAL NUMBER OF PEDIATRICIANS
385

DEVELOPMENTAL SCREENING RATES AMONG CHILDREN AGED 9-35 MONTHS IN MS, 2016-2017[9]



PREVENTIVE DENTAL VISITS FOR CHILDREN IN MS BY RACE, 2016-2017[10]



White Black

POLICY CONSIDERATIONS

Promote Early Childhood Screening

Background:
As children grow, their experiences and environments contribute to their physical, behavioral, emotional, and social development. When children under the age of six do not meet developmental milestones at the expected age, it is called a developmental delay. Developmental delays can occur in one or several areas. Developmental screenings can help identify a wide array of developmental delays, from minor lags in speech or motor skills to severe behavioral or developmental disorders. The earlier a delay is discovered and addressed, the more likely the child will benefit from the therapy. Federally funded early intervention programs are available to provide services for children to promote educational success.[1-2] Though Mississippi's children face a higher than average risk of developmental delays due to the state's high poverty rate and other factors, only 18.6% of 9- to 35-month-old children receive developmental screenings.[3-4] Mississippi has the foundations of a developmental screening program through Early Periodic Screening, Diagnostic, and Treatment (EPSDT), a comprehensive health program for Medicaid-eligible recipients from birth up to age 21.[5] Ensuring that all young children in Mississippi receive developmental screenings at recommended ages (9 months, 18 months, and 30 months) through EPSDT, or when there is a concern, and linking families with appropriate early intervention services will promote healthy development and improve outcomes for young children and their families.[6]

Recommendations:
- Support parents in a) understanding the importance of children's developmental and behavioral health, b) being familiar with developmental milestones, and c) requesting that primary care providers conduct formal developmental screenings.
- Require professional development on the topic of early childhood development in early care and education settings, and equip child care centers with validated developmental screening tools and referral resources.
- Support health care providers to integrate developmental health education, developmental screenings of children, and linkages to appropriate services into their practices by increasing Medicaid support for widespread pediatric care coordination services.
- Include comprehensive early childhood developmental health training for nursing and medical school students, pediatricians, family practitioners, and pediatric and family nurse practitioners.

Require Childhood Vaccination

Background:
Childhood vaccination is an effective way to prevent disease and save lives. Nevertheless, its use has varied geographically and over time. For example, while vaccinations have significantly reduced cases of measles in the U.S., reported cases worldwide have increased by over 30% since 2016. In 2017, North and South America were among the regions with the highest increases of measles cases.[7] Mississippi has been relatively successful in vaccinating its children. Within the U.S., Mississippi has the highest vaccination rate for school-age children in the country. During the 2016-2017 school year, 99.4% of kindergartners were fully vaccinated.[8] The success of the vaccination program can be attributed in large measure to a strong public health law that limits vaccine exemptions to medical indications only.[9] Mississippi also has a strong public health system; the Mississippi State Department of Health was awarded national accreditation from the Public Health Accreditation Board in 2017.[10] While the current vaccination program has been successful, there is room for improvement. The vaccination rates for young children prior to kindergarten entry are lower than those for kindergarteners. In 2016, 70.4% of children in Mississippi completed their CDC-recommended, seven-vaccine series by their third birthday, a rate just below the national average of 70.7%.[11] Under-vaccination can largely be attributed to vaccine hesitancy among parents, lack of access to health care, and missed well-child visits.[12-13] In an attempt to increase vaccination access, the Vaccines for Children program (VFC) was designed for Native Americans and children who are enrolled in Medicaid or have health insurance that does not cover vaccinations, so that vaccinations can be made available at no cost to families. Currently, 350 private health care providers in Mississippi are enrolled in this program. Health care providers who agree to follow the Advisory Committee on Immunization Practices Recommended Immunization Schedule can enroll in the VFC program for free in order to administer these vaccines at no or low cost to qualifying children.[14]

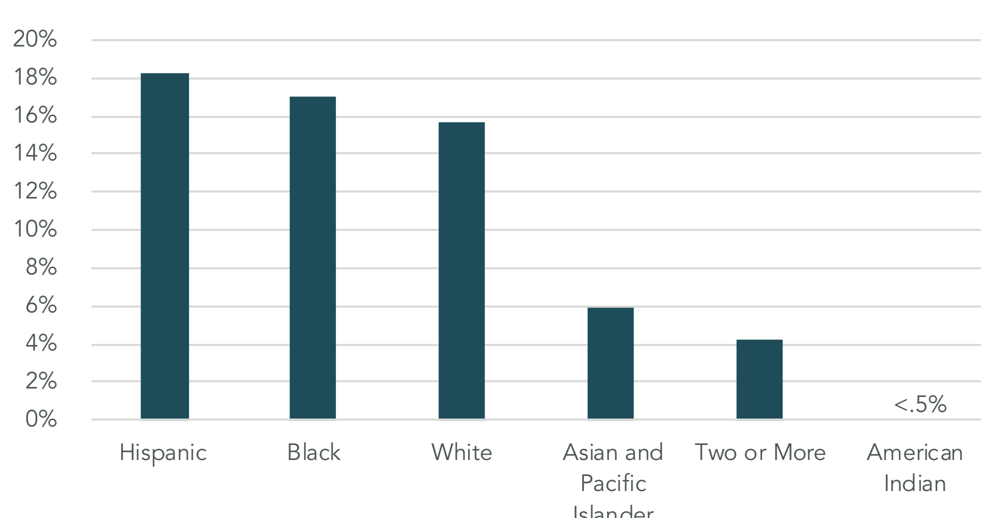
Recommendations:
- Continue to require vaccination, without allowing religious or philosophical exemptions, before children can enroll in school.
- Increase awareness among health care providers and families about the Vaccines for Children (VFC) program that allows children to receive vaccinations at no or low cost.
- Equip early childhood professionals with comprehensive training on utilizing the Immunization Registry in order to promote well-child visits and completion of the seven-vaccine series before children reach school age.
- Fully fund a parent outreach or counseling system that encourages parents to have their children vaccinated according to CDC-recommended schedules.

INTRODUCTION

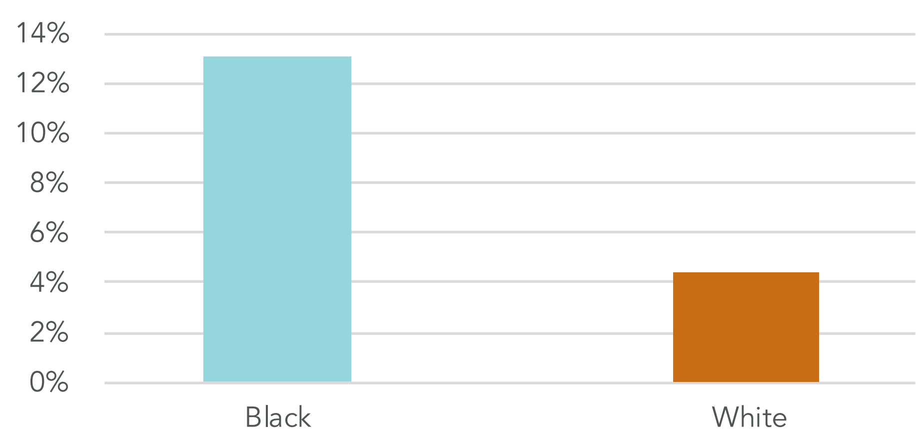
While Mississippi showed modest improvements on the four measures of family and community life highlighted in the national 2018 KIDS COUNT Data Book, in this section we again explore some additional indicators of family and community life, drilling down to the county level and disaggregating the data by race when possible. Looking at these data, we find that many of Mississippi's children have environmental circumstances that often limit resources and opportunity, such as having young parents aged 18-24. This is an age group less likely to have established financial security. Hispanic and Black parents are more likely to fall into this age bracket. Black children are also more likely to have an incarcerated parent or to live in a neighborhood that their parents describe as unsafe—conditions also limiting opportunity for children.

YOUNG PARENTS (AGED 18-24) BY RACE AND ETHNICITY IN MS, 2015-2017[1]

Overall, there are approximately 44,000 young parents aged 18 to 24 years in Mississippi. The chart on the right shows slight differences among the percentages of young parents aged 18 to 24 by race and ethnicity in Mississippi. The group with the highest percentage of young parents is Hispanic parents (18.3%), followed by Black parents (17%) and then by White parents (15.7%). Of the approximately 54,000 children with young parents in Mississippi, 76% live in families with incomes less than 200% of the federal poverty level.[1]



CHILDREN IN HOUSEHOLDS IN WHICH NO ADULT HAS A HIGH SCHOOL DIPLOMA BY RACE IN MS, 2016-2017[2]



According to the 2016-2017 National Survey of Children's Health, 8.5% of children in Mississippi live in households in which no adult has received a high school diploma. The chart on the left indicates that 13.1% of Black children live in households in which no adult has received a high school diploma, compared with 4.4% of White children in the state. Parent education levels can affect employment opportunities, income levels, and stress, and in turn, affect parent-child relationships, children's future opportunities, their chances of success in school, and child development outcomes.[3]

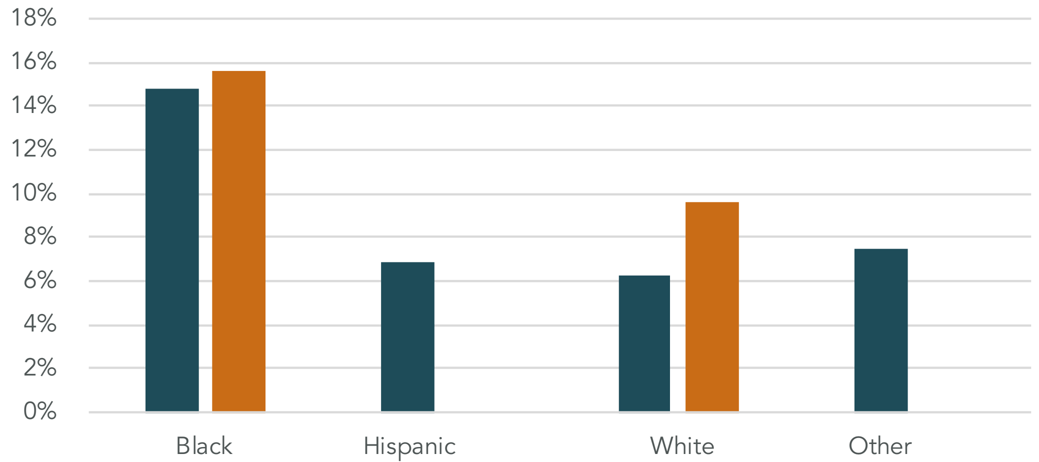
INCARCERATION[4]

According to the 2017 National Survey of Children's Health, Mississippi's children have the fifth highest rate of parents who have been incarcerated in the nation. The chart below shows that a higher percentage of Black children had parents who have been incarcerated than White children in Mississippi in 2016-2017. There are no available data for Hispanic or other races of children who have experienced a parent's incarceration in Mississippi. The disparity between White and Black children who have had an incarcerated parent holds true for the United States, as well.

According to the American University Law Review, the statistics for children aged 13 to 17 years sentenced to life without parole in Mississippi show a similar trend; in 2016, 69% of juveniles serving life without parole in prisons with adults in Mississippi were Black, while 31% were White. Assigning juvenile life without parole (JLWOP) has been declared unconstitutional in many cases nationwide since 2010, and in 2016, the U.S. Supreme Court ruled that this sentence can only be applied in extreme homicide cases. The number of juveniles serving life without parole in Mississippi will likely decrease since, in 2013, the Mississippi Supreme Court applied a finding from a previous case to retroactively rule JLWOP sentencing practices in Mississippi unconstitutional.[5-6]

> "Mississippi might want to explore moving youth certified as adults from county jails back under juvenile jurisdiction…[T]his would protect youth pending adult charges in a more developmentally appropriate setting."
>
> - Campaign for Youth Justice CEO Marcy Mistrett[7]

CHILDREN WHO HAVE HAD INCARCERATED PARENTS BY RACE AND ETHNICITY IN MS, 2016-2017[4]

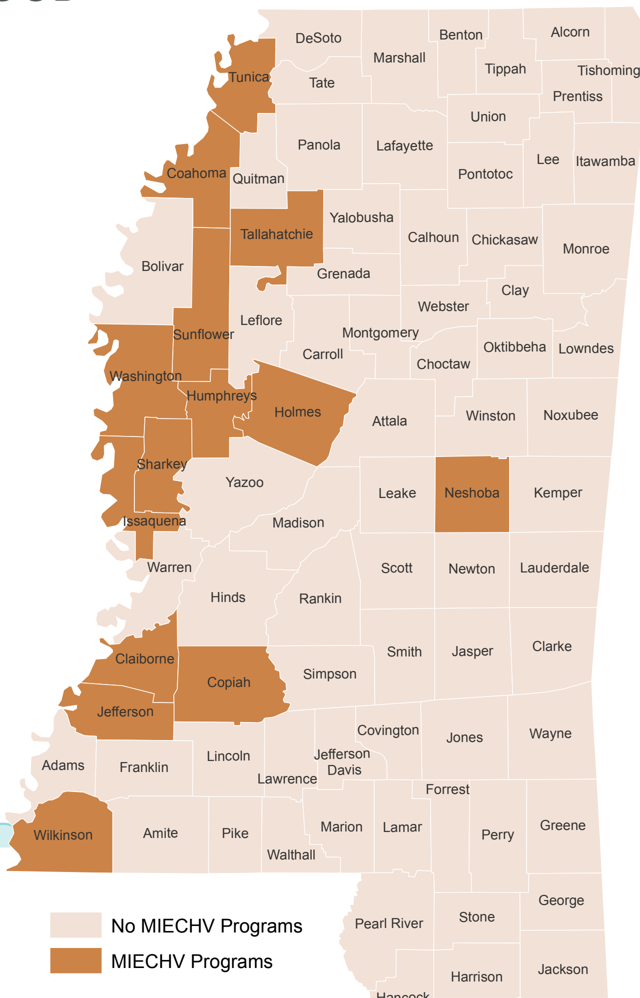


HOME VISITING

MATERNAL, INFANT, AND EARLY CHILDHOOD HOME VISITING (MIECHV) PROGRAMS BY COUNTY IN MS, 2017[8]

The federal Maternal, Infant and Early Childhood Home Visiting (MIECHV) grant from the Health Resources and Services Administration funds the evidence-based home visiting program Healthy Homes Mississippi (a program of Healthy Families America) through the Mississippi Department of Human Services. Healthy Homes Mississippi strives to link families to relevant community resources and information on child development and safety, nutrition, financial management, and other supports. Healthy Homes Mississippi served 693 households in fiscal year 2017. Of these households, 90.8% were low income. The map on the right shows the 14 counties served by the MIECHV-funded programs in Mississippi in 2017.[8]

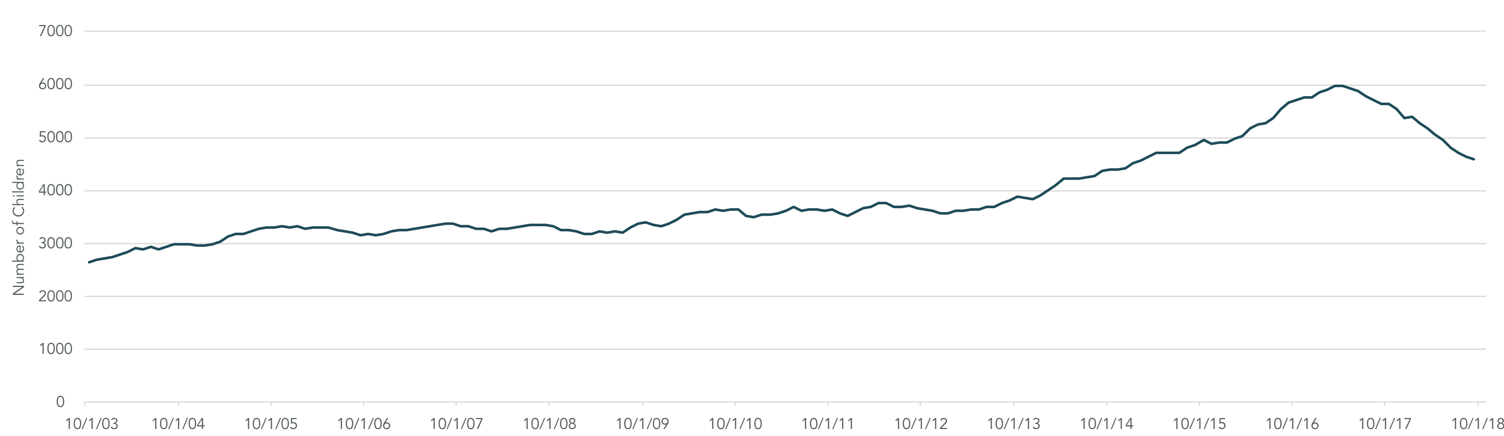
Research has shown that high-quality home visiting programs during the first years of children's lives can reduce child abuse and neglect, improve the health of both children and mothers, improve school readiness factors for young children, and support positive parenting and child development.[8]



FOSTER CARE

CHILDREN IN FOSTER CARE IN MS, 2003-2018[9]

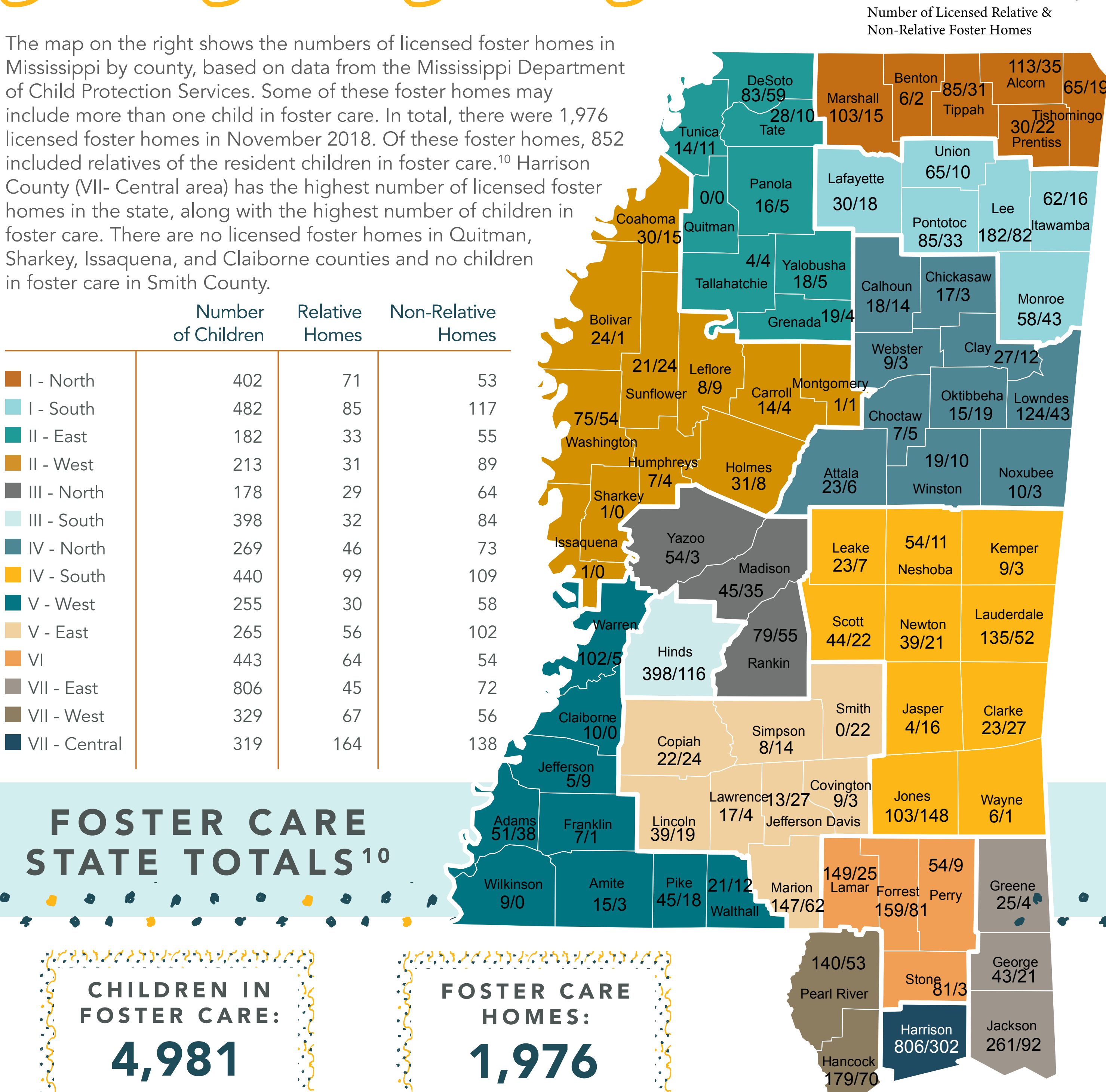
In November 2018, there were 4,981 children in foster care throughout the state. The trend chart below shows the numbers of children in foster care from 2003 to 2018. From 2003 to 2013, overall, the number of children in foster care increased, peaking to its highest number (5,984) in March 2017. Between March 2017 and September 2018, the amount of children in foster care in Mississippi decreased by approximately 23%.[10] (See paragraph at the bottom of page 25 for more information).



FOSTER CARE

The map on the right shows the numbers of licensed foster homes in Mississippi by county, based on data from the Mississippi Department of Child Protection Services. Some of these foster homes may include more than one child in foster care. In total, there were 1,976 licensed foster homes in November 2018. Of these foster homes, 852 included relatives of the resident children in foster care.[10] Harrison County (VII- Central area) has the highest number of licensed foster homes in the state, along with the highest number of children in foster care. There are no licensed foster homes in Quitman, Sharkey, Issaquena, and Claiborne counties and no children in foster care in Smith County.

	Number of Children	Relative Homes	Non-Relative Homes
I - North	402	71	53
I - South	482	85	117
II - East	182	33	55
II - West	213	31	89
III - North	178	29	64
III - South	398	32	84
IV - North	269	46	73
IV - South	440	99	109
V - West	255	30	58
V - East	265	56	102
VI	443	64	54
VII - East	806	45	72
VII - West	329	67	56
VII - Central	319	164	138



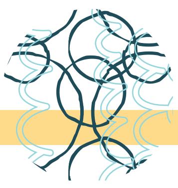
FOSTER CARE STATE TOTALS[10]

CHILDREN IN FOSTER CARE: 4,981

FOSTER CARE HOMES: 1,976

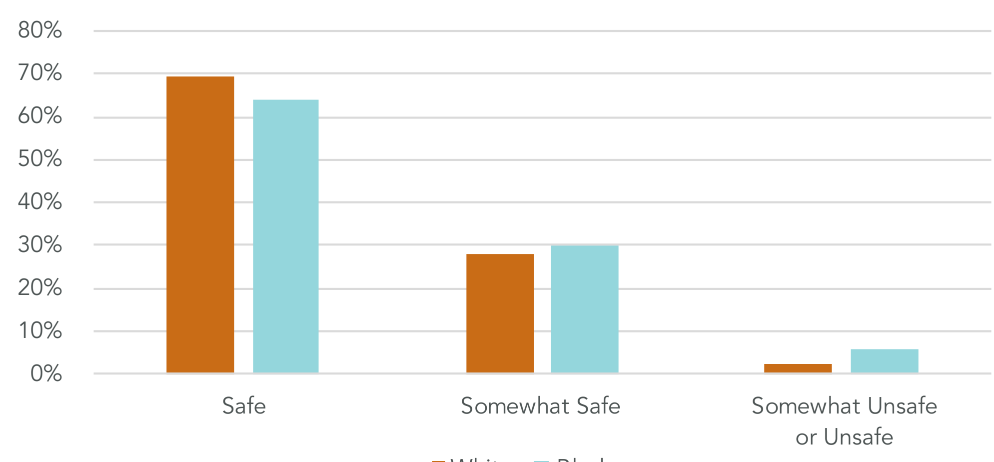
In reference to page 24 Foster Care graph: According to a May 25, 2018, Child Protective Services release, this reduction is attributable to greater emphasis on reunification of foster children and youth with their birth families, adoption of a "Safe at Home" model that works to keep families intact, and greater facilitation of adoption.[11] Judge John Hudson, Jurist in Residence, Mississippi Supreme Court, also credits the decreases to a pilot program that has provided legal representation for parents in youth courts. He states, "Parent representation reduces removal by exploring alternatives, hastening reunification, and bringing accountability to the process." This pilot program has been funded through a mix of grant, state, and county dollars. The program currently serves ten counties, with expansion plans developed. Other, non-pilot-site counties also report the use of parent representation. Hudson notes,"It is not coincidental that the reductions are being driven by counties with parent representation."[12]

COMMUNITIES



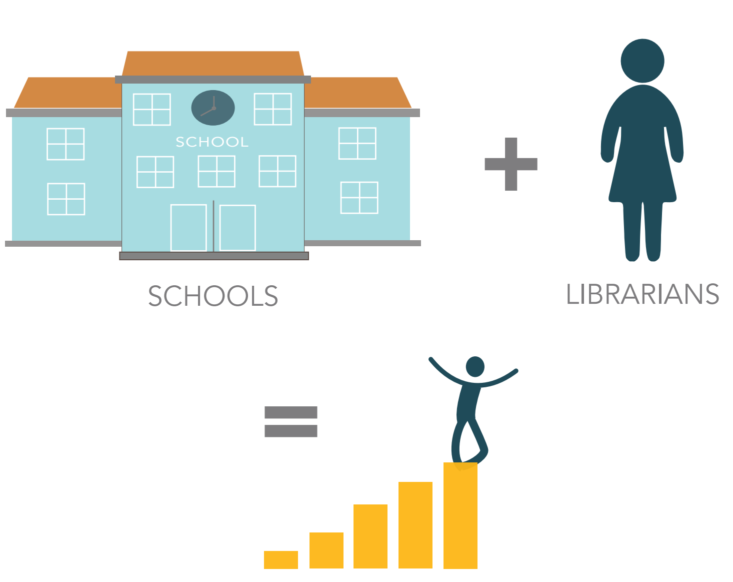
PARENTS' PERCEPTIONS OF NEIGHBORHOOD SAFETY BY RACE IN MS, 2016-2017[13]

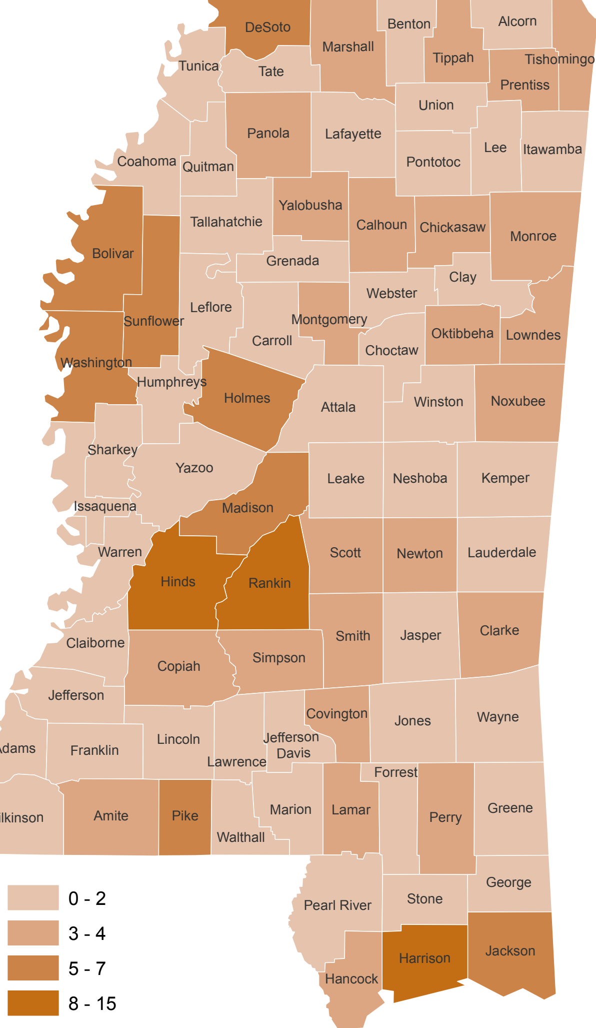
Based on data from the 2016-2017 National Survey of Children's Health, the chart on the right indicates that, in Mississippi, a higher percentage of White parents reported feeling that they live in safe neighborhoods than Black parents. Black parents reported feeling that their neighborhoods were either somewhat unsafe or unsafe at more than twice the rate as White parents.



PUBLIC LIBRARIES BY COUNTY IN MS, 2018[14]

The map on this page shows the concentration of public libraries throughout the state by county. Issaquena County has no public library, while 23 counties in Mississippi have only one public library. Hinds County has 15 public libraries, the highest number in the state. Harrison County has 10, the second highest number of public libraries in the state.





POLICY CONSIDERATIONS

Address Effects of Parental Incarceration

Background:
Parental incarceration affects children adversely in many ways. Children with parents who are incarcerated have been found to experience more stress due to the separation and financial instability caused by the incarceration.[1] These impacts can alter the trajectory of young children, affecting their performance in school, personal behavior, and overall health. Eight percent of children in the United States have had a parent or guardian who has been incarcerated. In Mississippi, this number is 11%.[2] Parental incarceration occurs most often in communities that lack support systems for children in difficult situations, and it disproportionately affects low-income families and families of color.[1] The rise in strict sentencing standards, and thus incarceration rates, has caused only a small decrease in crime, yet the resulting costs of unemployment, poverty, poor health, drug addiction, and family disruption have been notable.[3]

Recommendations:
- Continue building on the progress of criminal justice and sentencing reforms to create a more just and equal justice system.
- Ensure children have access to supportive services during and after their parent's incarceration.
- Prevent future offenses by providing pathways to employment for parents rejoining their communities after their time is served.
- Expand programs that allow children to connect with their parents while they are incarcerated, such as letter-writing programs and visitation days.

Increase Prenatal and Infant Home Visiting Programs

Background:
Living in poverty can cause stress within families and adversely affect children's developmental health. In Mississippi, 52% of children live at or below 200% of the federal poverty level. Home visiting programs have been shown to benefit low-income families by linking them to support programs and services.[4] Research shows that high-quality home visiting programs can yield from $1.75 to $5.70 for every dollar invested.[5] Mississippi has utilized Maternal, Infant, and Early Childhood Home Visiting (MIECHV) funds to implement the evidence-based Healthy Families America model through the Healthy Families Mississippi program. This program focuses on providing information and linkages to community services and resources on child development, financial and safety education, and nutrition education to pregnant women and families with children until the child's third birthday. Families are enrolled when they are pregnant or have a newborn less than three months of age.[6-7] Mississippi has implemented other home visiting programs that are not funded by MIECHV, such as the Perinatal High Risk Management/Infant Services System (PHRM/ISS), a case management program that includes home visits for high-risk pregnant women and their babies up to age one year.[8] Another model that is implemented in many states to improve the health of children is the evidence-based Nurse-Family Partnership, which includes nurse visits from pregnancy to two years of age.[9] Mississippi is one of eight states that does not have a Nurse-Family Partnership program.[10] Evidence-based home visiting models that focus on prenatal and early childhood health are important for increasing developmental screening rates of children and teaching first-time parents healthy parenting practices.

Recommendations:
- Expand existing home visiting programs that focus on the health of pregnant mothers, infants, and young children, and ensure that these are available to parents in every county.
- Ensure that home visiting programs promote developmental screenings and provide parents with information on positive parenting practices.
- Utilize home visiting programs to connect families with relevant community support services.
- Consider allocating Title V funding for home visiting programs.
- Create a home visiting network so that various home visiting programs can more cohesively utilize standardized curricula and provide more streamlined services to children and families.
- Routinely equip providers with up-to-date information regarding eligibility criteria for home visiting programs and other child development services.

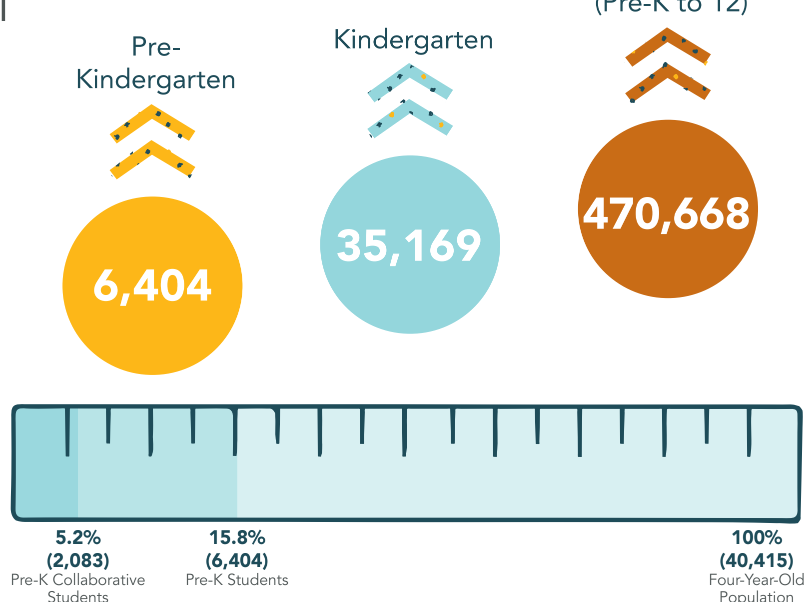
EDUCATION

INTRODUCTION

While Mississippi improved on three of the four measures of education highlighted in the national 2018 KIDS COUNT Data Book, in this section we again explore some additional indicators of education, drilling down to the county level and disaggregating the data by race when possible. We do this in order to show that not all children experienced improvements and to emphasize where additional prevention-related resources may be directed. Looking at these data, we find that while the state has seen gains in its high school graduation rate, huge opportunity remains to strengthen its early learning system. Much of the state is considered a "child care desert," and high-quality, state-funded Pre-K programs are serving a fraction of the children who could benefit.

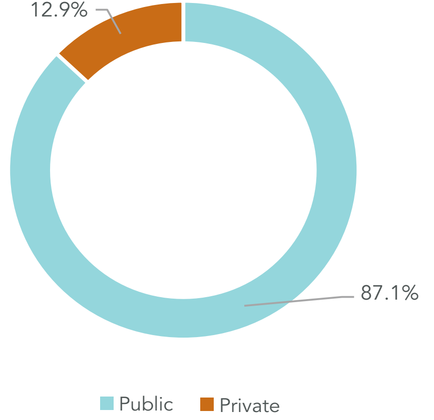
PUBLIC EDUCATION ENROLLMENT IN MS, 2018-2019[1]

According to the 2017 American Community Survey, there are approximately 40,415 four-year-old children in Mississippi.[2] Of these four year olds, approximately 6,404, or 15.8%, are enrolled in Pre-K programs. Of the 6,404 children enrolled in Pre-K, 2,083, or 5.2% of four year olds in the state, are enrolled in state-funded Pre-K Collaboratives.[3] There are approximately 17 times more children attending kindergarten than those attending state-funded Pre-K Collaboratives statewide. Mississippi requires children to attend school starting at age six. Kindergarten attendance is not required, nor is full-day kindergarten required to be provided in the state.[4]

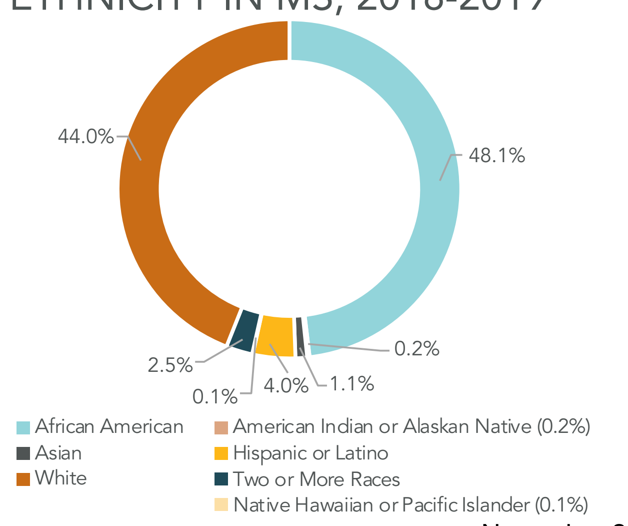


While most school-aged children in Mississippi are White, the chart below shows that the highest percentage of students enrolled in public Pre-K-12 programs in Mississippi are Black. During the 2017-2018 school year, 12.9% of Mississippi's children were enrolled in private schools, and 87.1% were enrolled in public schools.

PUBLIC AND PRIVATE SCHOOL ENROLLMENT IN MS, 2017-2018[2]



PRE-K-12 STUDENTS ENROLLED IN PUBLIC SCHOOLS BY RACE AND ETHNICITY IN MS, 2018-2019[1]

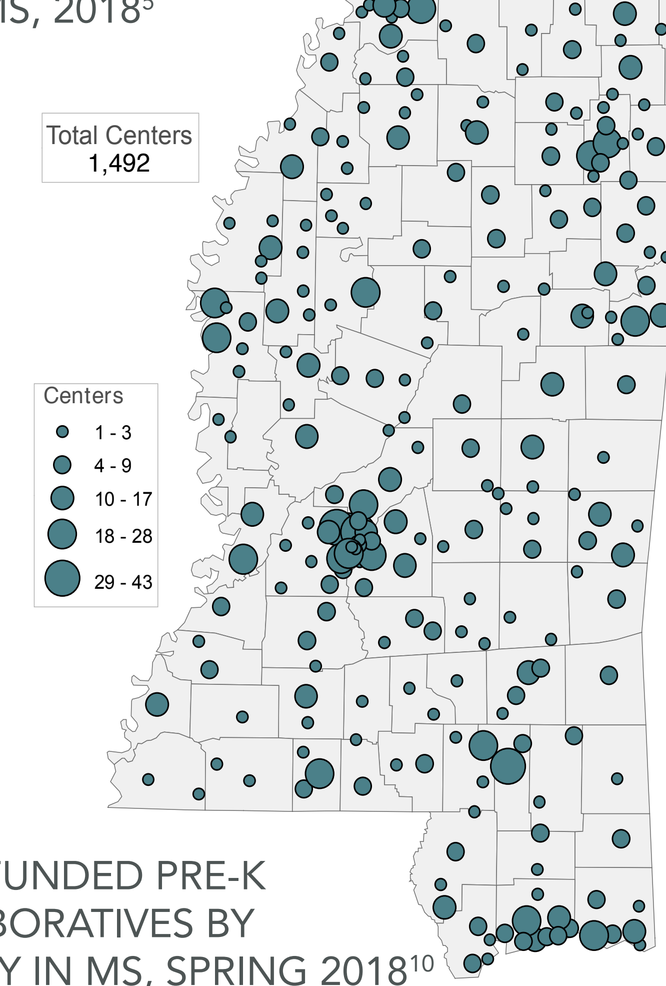


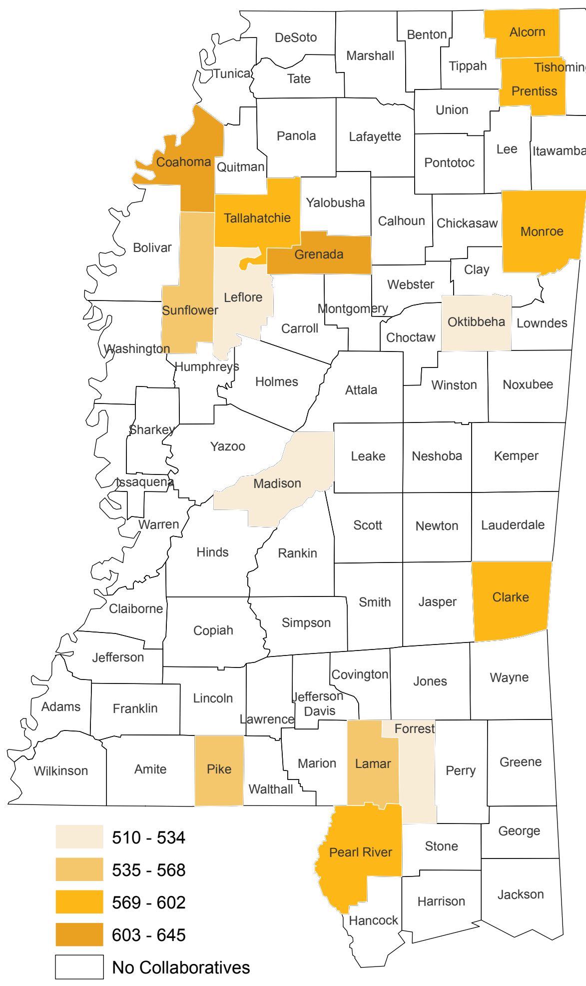
EARLY EDUCATION

LICENSED CHILD CARE CENTERS IN MS, 2018[5]

The map on the right indicates the number and locations of child care centers licensed by the Mississippi State Department of Health by zip code, including Head Start programs.

According to a 2018 report from the Center for American Progress, 48% of people in Mississippi live in child care deserts, a term defined as "areas with an insufficient supply of licensed child care."[6] Of people living in rural areas in Mississippi, 60% live in child care deserts, almost twice as many as those living in suburban areas.[7] In-home child care centers in Mississippi may not be licensed, depending on how many children are being cared for at one time who are not related to the in-home providers.[8] Overall, in-home providers offer child care at lower rates (17% of income for a family at the poverty level) than licensed child care centers (26% of income for a family at the poverty level). Because child care programs in family homes may not be required to be licensed, these programs may not follow some of the health, safety, and child development regulations and guidelines on which licensed child care centers are monitored.[9]





STATE-FUNDED PRE-K COLLABORATIVES BY COUNTY IN MS, SPRING 2018[10]

Mississippi's Early Learning Collaboratives have been recognized by the National Institute of Early Education Research (NIEER for meeting the majority of early childhood education quality standards. In the 2018-2019 school year, there are 14 Early Learning Collaboratives in the state, serving 15 counties in all. In the 2019-2020 school year, five new Collaboratives will open in the Cleveland, George, Hattiesburg, Oxford, and Marion County school districts. These new Collaboratives will serve an additional 1,076 students, bringing the total number of students enrolled in state-funded Pre-K Collaboratives in the state to 3,200.[11]

The map on the left shows the locations of state-funded Pre-K Collaboratives by county during the 2018-2019 school year, as well as the spring 2018 average scores of Pre-K Collaborative students on the Mississippi Kindergarten Readiness Assessment. The Mississippi Kindergarten Readiness Assessment is administered to incoming kindergartners and students attending public Pre-K programs, including Early Learning Collaboratives, each year in order to provide families and educators with information regarding the development of early literacy skills.[12-13] The statewide average spring 2018 score of Pre-K Collaborative students on this assessment was 573, above the benchmark score of 530.[14] Of these, the county with the highest average scores in spring 2018 was Grenada County at 645, and the county with the lowest spring 2018 average scores was Oktibbeha County at 510.

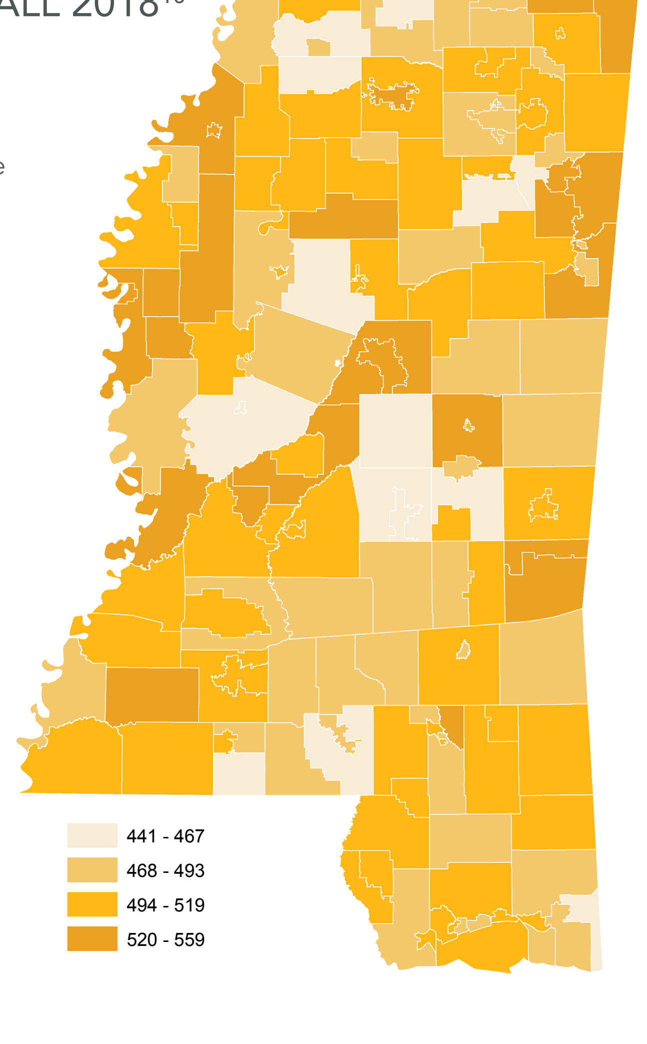
KINDERGARTEN READINESS

KINDERGARTEN READINESS ASSESSMENT SCORES BY SCHOOL DISTRICT IN MS, FALL 2018[10]

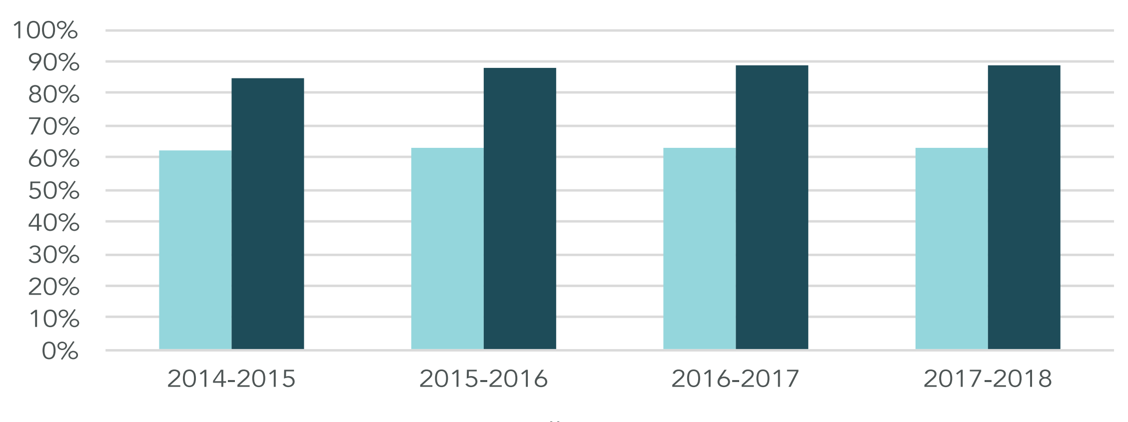
Students who score a 530 or above on the Mississippi Kindergarten Readiness Assessment are considered ready to learn early literacy skills expected of kindergartners based on the Mississippi College- and Career-Readiness Standards.[12] The average statewide score on the fall 2018 assessment among kindergarten students was 501, below the benchmark of 530.[10] The school district with the highest average score in fall 2018 was Western Line School District in Washington County at 559, and the school district with the lowest fall 2018 average score was Forest Municipal School District in Scott County at 441.

	Highest
Western Line School District	559
Hollandale School District	557
Quitman Municipal School District	554
Leland School District	543
Clinton Public School District	543

	Lowest
Forest Municipal School District	441
Scott County School District	444
Yazoo City Municipal School District	449
Holly Springs School District	452
Leake County School District	453



KINDERGARTEN READINESS TREND IN MS, 2014-2018[15]



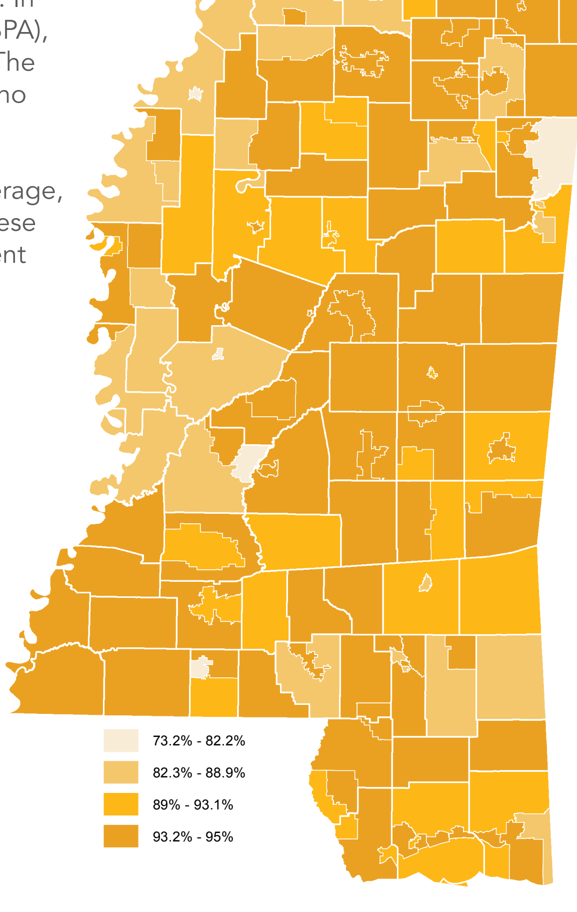
This chart shows the kindergarten readiness score trend between 2014 and 2018 for both spring and fall semesters. While kindergarten students show similar amounts of growth between the fall and spring semesters each school year, incoming kindergarten students have not shown growth between 2014 and 2018.

ACADEMIC ACHIEVEMENT

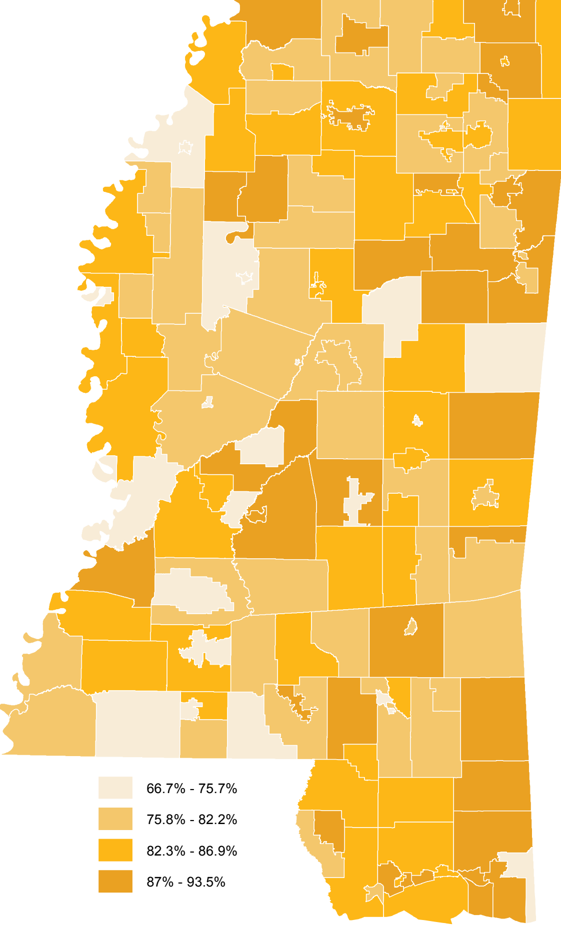
MAAP ELA ASSESSMENT SCORES BY SCHOOL DISTRICT, 2017-2018[14]

The Mississippi Academic Assessment Program (MAAP) English Language Arts (ELA) Assessment serves as the annual assessment for third graders. In order to meet the requirements of the Literacy-Based Promotion Act (LBPA), students must pass this test in order to be promoted to fourth grade.[14] The map on the right shows the percentage of third graders in Mississippi who met the LBPA requirements during the 2017-2018 school year.

Students in grades 3-8 complete MAAP testing each year. While, on average, students scored about 5% higher on the MAAP in 2018 than in 2017, these scores differ by race. In 2018, 27.9% of Black students scored as proficient on the MAAP, while 58% of White students scored as proficient.[16]

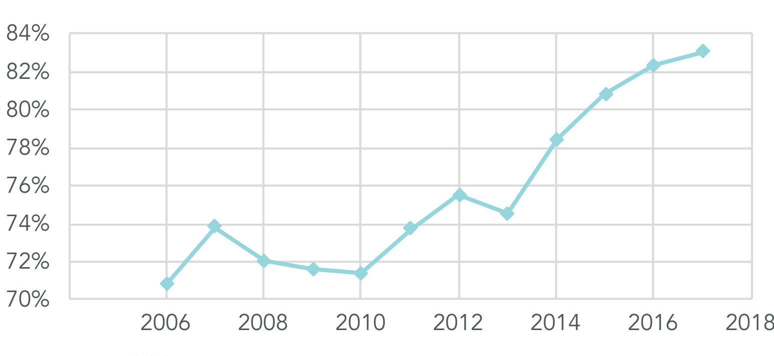


PUBLIC HIGH SCHOOL GRADUATION BY SCHOOL DISTRICT IN MS, 2017[17]



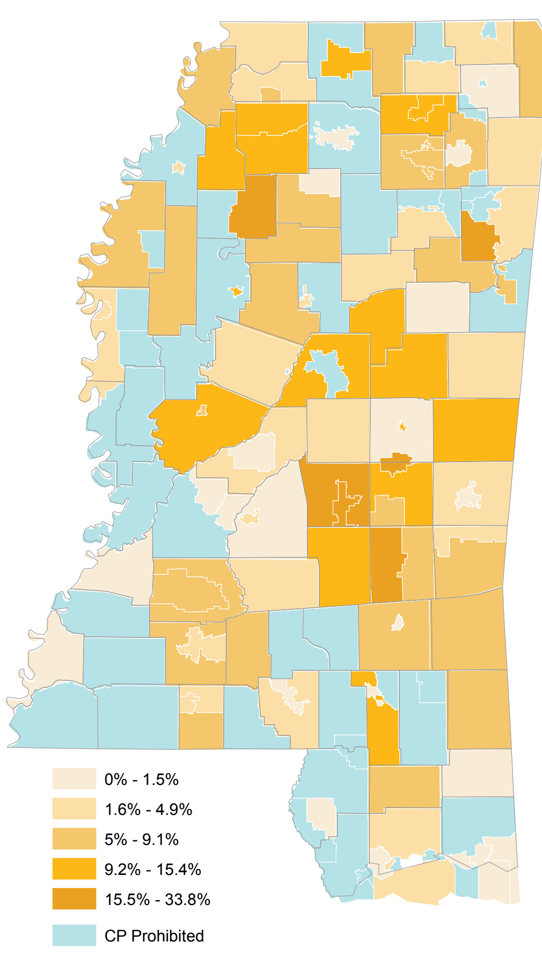
The map on the left shows the percentages of 2017 public high school graduates in Mississippi by school district. The statewide percentage of public high school graduates in 2017 was 83%, the highest for Mississippi of all time.[18] Durant Public School District and Yazoo City School District had the lowest percentage of graduates in the state (66.7%), whereas Pearl Public School District and Chickasaw County School District had the highest percentage of graduates in 2017 (93.5% and 93.1%, respectively).

PUBLIC HIGH SCHOOL GRADUATION IN MS, 2006-2017[17]



The chart on the right shows the graduation trend between 2006 and 2017, which indicates an overall increase in these rates.

SCHOOL ENVIRONMENT

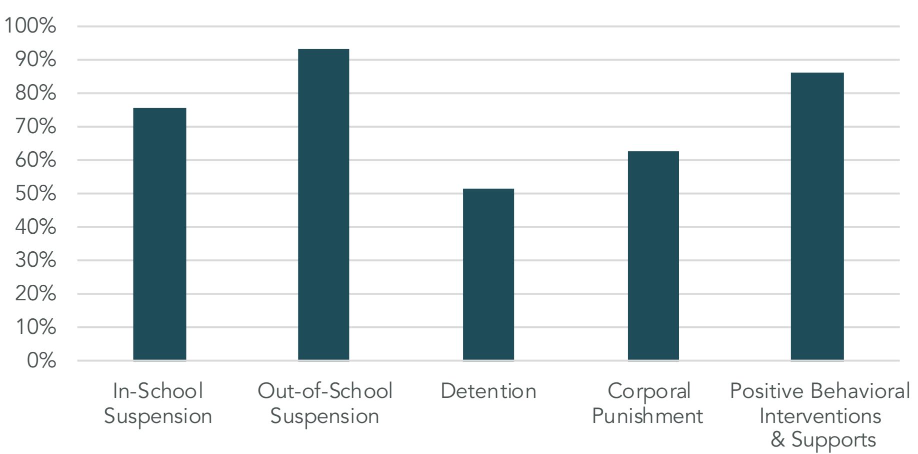


CORPORAL PUNISHMENT BY SCHOOL DISTRICT, 2016-2017[19]

The map on the left shows the percentage of students who have experienced corporal punishment as a behavioral intervention in each school district in Mississippi. Sixteen school districts—ten percent of those in the state—have banned the use of corporal punishment in public schools.[19]

SCHOOL PRINCIPALS' REPORTED USE OF DISCIPLINE STRATEGIES IN MS, 2018[19]

The chart below shows the frequency with which principals in Mississippi reported the use of specific discipline strategies in 2018. Mississippi school districts are required to include evidence-based practices and Positive Behavioral Intervention Supports (PBIS) in discipline policies. In a recent study by Mississippi KIDS COUNT, principals who were interviewed about their discipline strategies rated PBIS as the most effective strategy.[19]



SCHOOL SAFETY

While schools are required to collect information regarding infractions committed by employees and report this to the Mississippi Department of Education, such instances, which include sexual misconduct toward students, may be underreported. The Every Students Succeeds Act attempts to address this on a federal level by withholding some funding from districts when information regarding employees' sexual misconduct toward students is suppressed. While ten states have passed or proposed laws to require disclosure of sexual abuse by school employees toward students as of July 2018, Mississippi has not proposed this type of law. Disclosure of such information would allow other school districts to be aware of applicants' infractions.[20]

POLICY CONSIDERATIONS

Improve Early Childhood Education

Background:

From 2016-2018, approximately 64% of students entering kindergarten each fall in Mississippi have scored below the recommended score to demonstrate kindergarten readiness on the Mississippi Department of Education's readiness assessment. High-quality Pre-K programs can help prepare children for success in kindergarten, with the most substantial positive outcomes occurring among dual language learners and children living in poverty.[1] The Early Learning Collaborative Act of 2013 established a state-funded Pre-K program. The funds for this program are awarded through a competitive grant process, which limits participation. Given these constraints, this high-quality program was offered to just 10% of school districts for fiscal years 2014 through 2016.[2] Therefore, just 5.2% of four year olds in Mississippi are currently enrolled. The quality standards of other early learning programs in Mississippi have been found to vary. In 2017, Mississippi became the first state in the country to end its quality rating and improvement system (QRIS), making it difficult to assess the effectiveness of each program and precluding parent and public access to this information.[3] Centers accepting child care vouchers from enrollees are categorized as standard or comprehensive. As of January 2019, no centers were classified as comprehensive.[4] According to the Quality Compendium (qualitycompendium.org), Mississippi is the only state in the country that does not have, or is not working to establish, a QRIS or quality improvement initiative. The quality of early childhood education programs is impacted by teacher education and adult-to-child ratios, among other factors. State funded Pre-K programs in Mississippi require preschool teachers to hold a bachelor's degree or higher. Many other early learning programs require employees to have a high school diploma or GED or at least three years of experience caring for children not related to them. These positions pay an average of $18,310, less than half of the state's median income.[5-6] Furthermore, Mississippi child care regulations require a ratio of one adult for every nine 18 month olds and one adult for every 16 four year olds. The National Association of the Education of Young Children (NAEYC) recommends that programs maintain a ratio of one adult for every four infants and one adult for every 10 preschoolers.[8]

Recommendations:

- Increase state funding for Early Learning Collaborative Pre-K programs to allow the development of these programs in all areas of the state, beginning with the most impoverished areas.
- Reinstate a research-based quality assessment system for licensed childcare centers and preschools that includes comprehensive training for employees in health, safety, and early childhood development.
- Raise the wages of teachers in child care settings when they meet educational requirements or obtain credentials.
- Implement a universal school readiness assessment for all children with a framework for sharing results with parents.
- Strengthen childcare licensing regulations to ensure high-quality care for all children.

Ensure All Students Have the Supports They Need to Pass the Third-grade Literacy Test

Background:

In 2013, the Mississippi state legislature passed the Literacy-Based Promotion Act (LBPA), which requires all third-grade students to pass a literacy test in order to advance to fourth grade, a policy commonly known as the "third grade reading gate." First-try pass rates for the English Language Arts test have continuously improved since the implementation of the LBPA, reaching 93.2% in 2018. The LBPA was amended in 2016, however, and changes include increased achievement expectations.[9] Beginning in 2019, students will need to meet a Performance Level of 3 to pass, rather than the previous Performance Level of 2.[10-11] Based on 2017-2018 data, just 74% of students would have met the elevated standard on the first try.[12] If students do not initially pass this test, they have two more opportunities to do so, one before school ends and again in the summer. If they still do not pass, they are retained and assigned resources, such as summer reading instruction. There are exceptions for students 1) with limited English proficiency and less than two years in an English Language Learner program, 2) with a disability whose Individualized Education Program notes that state assessments are not appropriate for them, 3) who have received intensive remediation in reading for two years or were previously retained in kindergarten to third grade, 4) or who show an acceptable level of reading proficiency on an alternative assessment approved by the Mississippi Board of Education.[13] Summer reading instruction is one example of an intervention that schools offer in order to support the improvement of grade-level literacy skills before students take their final assessments. These programs and interventions require adequate funding, however, to be successful. While school districts may use federal Title I or special education funds to purchase evidence-based interventions, many districts may struggle to provide sufficient resources for students, placing an unfair disadvantage on students from these schools.[14]

Recommendations:

- Provide schools with appropriate funding to implement research-based interventions to support the growth of students' literacy skills throughout the year, including summer and out-of-school learning opportunities.
- Increase technical assistance and coaching to schools to ensure administrators and instructional staff have access to professional development opportunities. Currently 182 elementary schools (out of approximately 400) are identified as Literacy Support Schools for 2018-2019, meaning they receive an MDE coach (at least part time).[11]
- Increase funding and access for research-based programs to support parents and families in learning about ways to help their children develop age-appropriate literacy skills.
- Invest in partnerships with early childhood programs to support teachers in providing age-appropriate pre-reading instruction.
- Engage local businesses in partnerships to promote school engagement among working parents.
- Continue funding for professional development of pre-service teachers in research-based literacy practices and interventions.

REFERENCES

Demographics

1. KIDS COUNT data center. (n.d.). Child population by race. Retrieved from https://datacenter.kidscount.org/data/tables/103-child-population-by-race?loc=26&loct=2#detailed/2/26/false/871/68,69,67,12,70,66,71,72/423,424
2. KIDS COUNT data center. (n.d.). Total population by child and adult. Retrieved from https://datacenter.kidscount.org/data/tables/99-total-population-by-child-and-adult-populations?loc=26&loct=2#detailed/2/26/false/871/any/417
3. United States Census Bureau, American Community Survey (ACS). (n.d.). Age and nativity of own children under 18 years in families and subfamilies by number and nativity of parents: 2017. Retrieved from https://factfinder.census.gov/ [Table B05009]
4. KIDS COUNT data center. (n.d.). Child and adult population by race. Retrieved from https://datacenter.kidscount.org/data/tables/6539-adult-population-by-race?loc=26&loct=2#detailed/2/26/false/871/68,69,67,12,70,66,71,2800/13517,13518

Economic Well-Being | Data

1. KIDS COUNT data center. (n.d.). Children living in households with high housing costs by race. Retrieved from https://datacenter.kidscount.org/data/tables/7678-children-living-in-households-with-a-high-housing-cost-burden-by-race?loc=26&loct=2#detailed/2/26/false/870/10,11,9,12,1,185,13/14833
2. KIDS COUNT data center. (n.d.). Children living in high poverty areas – 5 year estimates. Retrieved from https://datacenter.kidscount.org/data/tables/6795-children-living-in-high-poverty-areas?loc=26&loct=2#detailed/2/26/true/1607,1572,1485,1376,1201,1074,880,11/any/13892
3. KIDS COUNT data center. (n.d.). Children living in poverty by county. Retrieved from https://datacenter.kidscount.org/data/tables/3740-poverty-by-age-group?loc=26&loct=2#detailed/5/3914-3995/false/871/2713/7697
4. KIDS COUNT data center. (n.d.). Children living in poverty by race and ethnicity. Retrieved from https://datacenter.kidscount.org/data/tables/44-children-in-poverty-by-race-and-ethnicity?loc=26&loct=2#detailed/2/26/false/871,870,573,869,36,868,867,133,38,35/10,11,9,12,1,185,13/323
5. KIDS COUNT data center. (n.d.). Children under six years old with no parent working. https://datacenter.kidscount.org/data/tables/8373-children-under-age-6-with-no-parent-in-the-labor-force?loc=26&loct=2#detailed/5/3914-3995/false/1607/any/16967
6. KIDS COUNT data center. (n.d.). Total population by race and county. Retrieved from https://datacenter.kidscount.org/data/tables/7692-total-population-by-race?loct=5#detailed/5/3914-3995/false/1691/107,133,10,172,670,4,185,13/14856
7. KIDS COUNT data center. (n.d.). Unemployment rates. Retrieved from https://datacenter.kidscount.org/data/tables/3735-unemployment-rate?loc=26&loct=2#detailed/2/any/false/871,870,573,869,36,868,867,133/any/10237
8. KIDS COUNT data center. (n.d.). Median household income levels by county. Retrieved from https://datacenter.kidscount.org/data/tables/3738-median-household-income?loc=26&loct=2#detailed/5/3914-3995/false/871/any/7631
9. National Partnership for Women & Families. (2017). Mississippi women and the wage gap fact sheet. Retrieved from http://www.nationalpartnership.org/our-work/resources/workplace/fair-pay/4-2017-ms-wage-gap.pdf
10. KIDS COUNT data center. (n.d.). Median household income by race and ethnicity. Retrieved from https://datacenter.kidscount.org/data/tables/8782-median-family-income-among-households-with-children-by-race-and-ethnicity?loc=26&loct=2#detailed/2/26/false/870,573,869,36,133,35,16/4038,4040,4039,2638,2597,4758,1353/17618
11. Feeding America. (2018). Mind the meal gap 2018: child food insecurity in Mississippi by county in 2016. Retrieved from https://www.feedingamerica.org/sites/default/files/research/map-the-meal-gap/2016/child/MS_AllCounties_CDs_CFI_2016.pdf
12. Feeding America. (2018). Child food insecurity. Retrieved from https://www.feedingamerica.org/sites/default/files/research/map-the-meal-gap/2016/2016-map-the-meal-gap-child-food-insecurity.pdf

Economic Well-Being | Policy Considerations

1. Mississippi Department of Education (MDE). (2018). About. Retrieved from https://www.mdek12.org/
2. Workforce Information Advisory Council. (2018). Recommendations for the Improvement of the Workforce and Labor Market Information System. Retrieved from https://www.doleta.gov/wioa/wiac/docs/WIAC-Recommendations-Report-DRAFT-for-Secretary-v2.pdf
3. Mississippi Department of Education (MDE). (2017). Mississippi Career Development Resource Document. Retrieved from https://www.rcu.msstate.edu/Portals/0/Media/MS%20Career%20Development%20Resource%20Document.pdf?ver=2017-12-15-093409-050
4. Perkins Web Portal. (2018). Performance Data. Retrieved from https://perkins.ed.gov/pims/DataExplorer/Performance
5. Mississippi Department of Education (MDE). (2018). Mississippi's Graduation Rate Continues Climb, Closing the Gap with the National Rate. Retrieved from https://www.mdek12.org/News/2018/02/15/Mississippis-Graduation-Rate-Continues-Climb-Closing-the-Gap-with-the-National-Rate
6. Santelises, S.B. (2016). "Are high schools preparing students to be college- and career-ready?" The Hechinger Report. Retrieved from https://hechingerreport.org/are-high-schools-preparing-students-to-be-college-and-career-ready/
7. National Partnership for Women & Families. (2017). "Mississippi Women and the Wage Gap." Retrieved from http://www.nationalpartnership.org/research-library/workplace-fairness/fair-pay/4-2017-ms-wage-gap.pdf
8. Blau, F. & Kahn, L. (2016). "The Gender Wage Gap: Extent, Trends, and Explanations." IZA Institute of Labor Economics Discussion Papers. Retrieved from http://ftp.iza.org/dp9656.pdf
9. Stoneman, T. (2017). "International Economic Law, Gender Equality, and Paternity Leave: Can the WTO Be Utilized to Balance the Division of Care Labor Worldwide?" Emory International Law Review. Retrieved from http://law.emory.edu/eilr/content/volume-32/issue-1/articles/economic-law-gender-equality-paternity-wto-care-labor.html
10. KIDS COUNT data center. (n.d.). Female-headed families receiving child support. Retrieved from https://datacenter.kidscount.org/data/tables/66-female-headed-families-receiving-child-support?loc=26&loct=2#detailed/2/26/false/870,573,869,36,868,867,133,38,35,18/any/366,367
11. Women's Bureau. (2017). "Equal Pay and Pay Transparency Protections." United States Department of Labor. Retrieved from https://www.dol.gov/wb/EqualPay/equalpay_txt.htm

12. Milli, J., Huang, Y., Hartmann, H., & Hayes, J. (2017). "The Impact of Equal Pay on Poverty and the Economy." Institute for Women's Policy Research. Retrieved from https://iwpr.org/publications/impact-equal-pay-poverty-economy/

Health | Data

1. National Survey of Children's Health. (NSCH). (2016-2017). In general, how would you describe this child's health? Retrieved from http://childhealthdata.org/browse/survey
2. Center for Disease Control and Prevention (CDC). (2017). Vaccination Coverage among children 19-35 months. Retrieved from https://www.cdc.gov/vaccines/imz-managers/coverage/childvaxview/index.html
3. Mississippi Department of Health (MSDH). (2016). Prenatal Care in Mississippi. Retrieved from http://www.msdh.state.ms.us/phs/2016/Summary/bthsumm_cnty_2016.pdf
4. National Survey of Children's Health. (NSCH). (2016-2017). What is the weight status of this child based on Body Mass Index (BMI) for age 10-17 years? Retrieved from http://childhealthdata.org/browse/survey/results?q=5281&r=1&r2=26
5. Center for Disease Control and Prevention (CDC). (2016). Childhood obesity causes & consequences. Retrieved from https://www.cdc.gov/obesity/childhood/causes.html
6. National Survey of Children's Health. (NSCH). (2016-2017). Percent of adolescents, age 10-17 years, who are obese (BMI at or above the 95th percentile.) Retrieved from http://childhealthdata.org/browse/survey/results?q=5429&r=26&g=652
7. National Survey of Children's Health. (NSCH). (2016-2017). Percent of adolescents, ages 12 through 17, who are physically active at least 60 minutes per day. Retrieved from http://childhealthdata.org/browse/survey/results?q=5411&r=26
8. Practicing Pediatricians in Mississippi. (n.d.). Mississippi State Board of Medical Licensure. Retrieved from https://www.msbml.ms.gov/
9. National Survey of Children's Health. (NSCH). (2016-2017). Did the child receive a developmental screening using a parent-completed screening tool in the past 12 months, age 9-35 months? Retrieved from http://childhealthdata.org/browse/survey/results?q=5454&r=26
10. National Survey of Children's Health. (NSCH). (2016-2017). Percent of children, ages 1 through 17, who had a preventive dental visit in the past year. Retrieved from http://childhealthdata.org/browse/survey/results?q=5419&r=26&g=652

Health | Policy Considerations

1. Michigan Medicine, University of Michigan. (2018). "Developmental Delay" Your Child Development & Behavior Resources: A Guide to Information & Support for Parents. Retrieved from http://www.med.umich.edu/yourchild/topics/devdel.htm
2. Mississippi Thrive! (2018). Concerned about your child's development? Retrieved from https://mississippithrive.com/wp-content/uploads/2018/11/Early-Intervention-flyer_older-than-3_less-ink.pdf and https://mississippithrive.com/wp-content/uploads/2018/11/Early-Intervention-flyer_younger-than-3_less-ink.pdf
3. The Annie E. Casey Foundation. (2018). Mississippi Overall Rank. KIDS COUNT Profile. Retrieved from https://www.aecf.org/m/databook/2018KC_profiles_MS.pdf
4. Data Resource Center for Child & Adolescent Health. (2017). "Did the child receive a developmental screening using a parent-completed screening tool in the past 12 months, age 9-35 months?" 2016-2017 National Survey of Children's Health. Retrieved from http://www.childhealthdata.org/browse/survey/results?q=5390&r=26
5. Mississippi Division of Medicaid. (2016). Early and Periodic Screening, Diagnosis, and Treatment. Retrieved from https://medicaid.ms.gov/programs/early-and-periodic-screening-diagnosis-and-treatment-epsdt/
6. American Academy of Pediatrics. (2017). Recommendations for Preventive Pediatric Health Care. Retrieved from https://www.aap.org/en-us/Documents/periodicity_schedule.pdf
7. World Health Organization (WHO). (2018). Measles cases spike globally due to gaps in vaccination coverage. Retrieved from http://www.who.int/news-room/detail/29-11-2018-measles-cases-spike-globally-due-to-gaps-in-vaccination-coverage
8. Seither, R., Calhoun, K., Street, E., Mellerson, J., Knighton, C., Tippins, A., Underwood, M. (2017). Vaccination Coverage for Selected Vaccines, Exemption Rates, and Provisional Enrollment Among Children in Kindergarten-United States, 2016-17 School Year. Morbidity and Mortality Weekly Report (MMWR). Centers for Disease Control and Prevention. Retrieved from https://www.cdc.gov/mmwr/volumes/66/wr/mm6640a3.htm
9. National Conference of State Legislatures. (NCSL). (2017). States with Religious and Philosophical Exemptions from School Immunization Requirements. Retrieved from http://www.ncsl.org/research/health/school-immunization-exemption-state-laws.aspx
10. Public Health Accreditation Board. (PHAB). (2018). Accredited Health Departments. Retrieved from https://www.phaboard.org/
11. National Center for Health Statistics. (2017). "Health, United States, 2017." Centers for Disease Control and Prevention. Retrieved from https://www.cdc.gov/nchs/data/hus/hus17.pdf
12. Ventola, L. (2016). "Immunization in the United States: Recommendations, Barriers, and Measures to Improve Compliance." Pharmacy & Therapeutics. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4927017/pdf/ptj4107426.pdf
13. Blue Cross Blue Shield (BCBS). (2018). Early Childhood Vaccination Trends in America. Retrieved from https://www.bcbs.com/sites/default/files/file-attachments/health-of-america-report/HoA.Childhood.Vaccines.Report_1.pdf
14. Mississippi State Department of Health (MSDH). (2018). Vaccines for Children Program (VFC). Retrieved from http://www.msdh.state.ms.us/msdhsite/_static/14,0,71,184.html

Family and Community | Data

1. The Annie E. Casey Foundation. (2018). Opening doors for young parents. Retrieved from https://www.aecf.org/resources/opening-doors-for-young-parents/
2. National Survey of Children's Health. (NSCH). (2016-2017). What is the highest education of adult in this child's household? Retrieved from http://childhealthdata.org/browse/survey/results?q=6454&r=26
3. Masarik, A.S. & Conger, R.D. (2017). Stress and child development: A review of the Family Stress Model. Current Opinion in Psychology, 13, 85-90. Retrieved from https://www.sciencedirect.com/science/article/pii/S2352250X16300549

4. National Survey of Children's Health. (NSCH). (2016-2017). To the best of your knowledge, has this child ever experienced the following: parent or guardian served time in jail? Retrieved from http://childhealthdata.org/browse/survey/results?q=5549&r=26
5. Juvenile Indigent Defense Delivery System. (NJDC). (2018). Mississippi fact sheet. Retrieved from https://njdc.info/practice-policy-resources/state-profiles/mississippi/
6. Mills, J.R., Dorn A.M., & Hritz A.C. (2016). Juvenile Life without Parole in Law and Practice: Chronicling the Rapid Change Underway. American University Law Review, 65(3). Retrieved from http://www.aulawreview.org/juvenile-life-without-parole-in-law-and-practice-chronicling-the-rapid-change-underway/
7. Turner, A. (2017, Aug 31). Impact of Raise the Age on Mississippi's juvenile courts. Retrieved from http://www.campaignforyouthjustice.org/campaigns/item/impact-of-raise-the-age-on-mississippi-s-juvenile-courts
8. Mississippi home visiting program. Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program. Retrieved from https://mchb.hrsa.gov/sites/default/files/mchb/MaternalChildHealthInitiatives/HomeVisiting/pdf/ms.pdf
9. Fostering Court Improvement. (2018). Statewide: Foster Care Dynamics. Retrieved from https://s3.amazonaws.com/fci1/ms/County/Adams/cip1_fcdyn1state.pdf
10. Mississippi Department of Child Protective Services. (MDCPS). (2018). Data provided to MS KIDS COUNT by the Director of Communication of MDCPS for December 1, 2018.
11. Mississippi Department of Child Protective Services. (MDCPS). (2018). MDCPS safely reduces number of children in state custody. https://www.mdcps.ms.gov/wp-content/uploads/2018/05/Reduction-in-Foster-Children.pdf
12. Hudson, J. (2019). Information provided to MS KIDS COUNT by Judge John Hudson, Jurist in Residence, Mississippi Supreme Court on January 14, 2019.
13. National Survey of Children's Health. (NSCH). (2016-2017). Does this child live in a safe neighborhood? Retrieved from http://childhealthdata.org/browse/survey/results?q=6432&r=1&g=653
14. Hardest to Count 2020. (n.d.). Public library locations by county in 2018. Retrieved from https://www.censushardtocountmaps2020.us/?latlng=32.60086%2C-88.82737&z=7&query=states%3A%3A28&promotedfeaturetype=states&arp=arpRaceEthnicity&layers=counties%2Ctribal%20lands%2Clibraries
15. Institute of Museum and Library Services. (2013). Growing Young Minds: How Museums and Libraries Create Lifelong Learners. Retrieved from https://www.imls.gov/assets/1/AssetManager/GrowingYoungMinds.pdf

Family and Community | Policy Considerations

1. The Annie E. Casey Foundation. (2016). "A Shared Sentence: The Devastating Toll of Parental Incarceration on Kids, Families and Communities." Retrieved from https://www.aecf.org/resources/a-shared-sentence/
2. KIDS COUNT data center. (n.d.). Children who had a parent who was ever incarcerated. Retrieved from https://datacenter.kidscount.org/data/tables/9688-children-who-had-a-parent-who-was-ever-incarcerated?loc=26&loct=2#detailed/2/26/false/1539/any/18927,18928
3. McLaughlin, M., Pettus-Davis, C., Brown, D., Veeh, C., Renn, T. (2016). "The Economic Burden of Incarceration in the U.S." Concordance Institute for Advancing Social Justice. Retrieved from https://joinnia.com/wp-content/uploads/2017/02/The-Economic-Burden-of-Incarceration-in-the-US-2016.pdf
4. Duffee, J., Mendelsohn, A., Kuo, A., Legano, L., & Earls, M. (2017). "Early Childhood Home Visiting." American Academy of Pediatrics. Retrieved from http://pediatrics.aappublications.org/content/140/3/e20172150
5. National Conference of State Legislatures. (2018). "Home Visiting: Improving Outcomes for Children." Retrieved from http://www.ncsl.org/research/human-services/home-visiting-improving-outcomes-for-children635399078.aspx
6. Mississippi Department of Human Services. (MDHS). (2018). Early Childhood Care & Development. Retrieved from http://www.mdhs.state.ms.us/early-childhood-care-development/
7. HRSA Maternal & Child Health. (2017). Mississippi MIECHV Program FY 2017. Retrieved from https://mchb.hrsa.gov/sites/default/files/mchb/MaternalChildHealthInitiatives/HomeVisiting/pdf/ms.pdf
8. HHS Office of Adolescent Health. (2018). "OAH Pregnancy Assistance Fund Program Successful Strategies: Mississippi State Department of Health Perinatal High-Risk Case Management: Addressing Barriers for Expectant and Parenting Teens." Retrieved from https://msdh.ms.gov/msdhsite/_static/resources/7797.pdf
9. US Department of Health and Human Services. (2018). "Implementing Nurse-Family Partnership: Model Overview." Retrieved from https://homvee.acf.hhs.gov/Implementation/3/Nurse-Family-Partnership--NFP--sup---sup-/14/1
10. Mader, J. (2017). "Could more home visits improve outcomes for Mississippi moms and kids?" The Hechinger Report. Retrieved from https://hechingerreport.org/home-visits-improve-outcomes-mississippi-moms-kids/

Education | Data

1. Mississippi Department of Education (MDE). (2018). Enrollment data. Retrieved from https://mdereports.mdek12.org/
2. United States Census Bureau, American Community Survey (ACS). (n.d.). School enrollment: 2017. Retrieved from https://factfinder.census.gov/ [Table S1401]
3. Mississippi Department of Education (MDE). (2018). 2017-2018 Pre-Kindergarten assessment results for early learning collaborative and other four-year-old classrooms. Retrieved from https://www.mdek12.org/sites/default/files/Offices/MDE/OEA/OPR/2018/2018_ELC_PK_Results_FY2018_Post-test_Final.pdf
4. National Center for Education Statistics. (n.d.). State Education Reforms (SER). Retrieved from https://nces.ed.gov/programs/statereform/tab5_3.asp
5. Mississippi Department of Health (MSDH). (2018). Licensed child care centers. Retrieved from https://www.msdh.provider.webapps.ms.gov/ccsearch.aspx
6. Malik, R., Hamm, K., Schochet, L., Novoa, C., Workman, S., & Jessen-Howard, S. (2018). America's Child Care Deserts in 2018. Retrieved from https://www.americanprogress.org/issues/early-childhood/reports/2018/12/06/461643/americas-child-care-deserts-2018/

7. Center for American Progress. (n.d.). Do you live in a child care desert? Retrieved from https://childcaredeserts.org/index.html?state=MS&urbanicity=All&split=true
8. Mississippi Department of Health (MSDH). (2018). How to get a child care license. Retrieved from http://www.msdh.state.ms.us/msdhsite/index.cfm/30,3448,183,pdf/How_to_get_a_child_care_license.pdf
9. Childcare Aware of America 30 years. (2017). Parents and the high cost of child care. Retrieved from http://usa.childcareaware.org/wp-content/uploads/2017/12/2017_CCA_High_Cost_Report_FINAL.pdf
10. Mississippi Department of Education (MDE). (2018). Kindergarten readiness assessment results – November 2018. Retrieved from https://www.mdek12.org/sites/default/files/Offices/MDE/OEA/OPR/2019/Fall-2018-Kindergarten-Readiness-Results_FINAL.docx
11. Mississippi Department of Education (MDE). (2018). State Board of Education Approves Five New Early Learning Collaboratives. Retrieved from https://mdek12.org/ocgr/news/2018/12/20/State-Board-of-Education-Approves-Five-New-Early-Learning-Collaboratives
12. Mississippi Department of Education (MDE). (2018). Kindergarten readiness assessment. Retrieved from https://www.mdek12.org/OSA/K_Readiness
13. Mississippi Department of Education (MDE). (2018). Mississippi K-3 assessment support system (MKAS). Retrieved from https://www.mdek12.org/sites/default/files/Page_Docs/mkas2_jenniferrobinson.pdf
14. Mississippi Department of Education (MDE). (2018). 3rd grade Mississippi academic assessment program English language arts assessment results. Retrieved from https://www.mdek12.org/sites/default/files/Offices/MDE/OEA/OPR/2018/3RD_GRADE_MAAP_ELA_RESULTS_2018_5.31.18_Final.pdf
15. KIDS COUNT data center. (n.d.). Kindergarten readiness. Retrieved from https://datacenter.kidscount.org/data/tables/9302-kindergarten-readiness?loc=26&loct=2#detailed/2/any/false/1648,1603,1539,1381/5596,5597/18410
16. Skinner, K. (2018, Aug 18). More Mississippi students scoring proficient on state tests. Retrieved from https://mississippitoday.org/2018/08/16/more-mississippi-students-scoring-proficient-on-state-tests/?utm_source=Mississippi+Today+Supporters&utm_campaign=6e6208ed82-EMAIL_CAMPAIGN_2018_08_16_10_19&utm_medium=email&utm_term=0_2ac1d8600e-6e6208ed82-168909457&mc_cid=6e6208ed82&mc_eid=0b584347b8
17. KIDS COUNT data center. (n.d.). High school graduation. Retrieved from https://datacenter.kidscount.org/data/tables/7549-graduation-rates?loc=26&loct=10#detailed/10/7461-7612/false/871,870,573,869,36,868,867,133,38,35/any/14680
18. Mississippi Department of Education (MDE). (2018). Mississippi's Graduation Rate Continues Climb, Closing the Gap with the National Rate. Retrieved from https://www.mdek12.org/News/2018/02/15/Mississippis-Graduation-Rate-Continues-Climb-Closing-the-Gap-with-the-National-Rate
19. Mississippi Data Project. (2018). Balancing Act: Mississippi administrators and teachers weigh in on discipline policies in schools. Retrieved from https://kidscount.ssrc.msstate.edu/wp-content/uploads/2018/06/KC-Balancing-Act-Brief-1-1.pdf
20. Lehrman, M. (n.d.). Legislation to Address Educator Sexual Misconduct and Abuse. Retrieved from https://www.enoughabuse.org/legislation/mapping-state-legislative-efforts/educator-misconduct-abuse.html

Education | Policy Considerations

1. Brookings and Duke Center for Child and Family Policy. (2017). "The Current State of Scientific Knowledge on Pre-Kindergarten Effects." Retrieved from https://www.brookings.edu/wp-content/uploads/2017/04/duke_prekstudy_final_4-4-17_hires.pdf
2. Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER). (2015, Nov 17). Report to the Mississippi Legislature: The Early Learning Collaborative Act of 2013: Evaluation of the Operations and Effectiveness of the Program. Retrieved from https://www.peer.ms.gov/reports/rpt600.pdf
3. Butrymowicz, S. & Mader, J. (2016, Dec 4). "Mississippi Defies National Trend; Decreases Scrutiny of Early Child Care Quality." The Hechinger Report. Retrieved from https://hechingerreport.org/mississippi-defies-national-trend-decreases-scrutiny-early-child-care-quality/
4. MS Dept. Human Services. Child Care and Development Fund Plan for Mississippi FFY 2019–2021. Retrieved January 30, 2019, from http://www.mdhs.ms.gov/wp-content/uploads/2018/08/CCDF-Plan-for-MS-FINAL-DRAFT.pdf.
5. Butrymowicz, S. & Mader, J. (2016, Feb 7). "High turnover and low pay for employees may undermine state's child care system." The Hechinger Report. Retrieved from https://hechingerreport.org/high-turnover-and-low-pay-for-employees-may-undermine-states-child-care-system/
6. National Center for Children in Poverty. (2016). Mississippi Early Childhood Profile. Retrieved from http://www.nccp.org/profiles/MS_profile_16.html#19
7. Mississippi State Department of Health. (2017). Regulations Governing Licensure of Child Care Facilities. Retrieved from https://msdh.ms.gov/msdhsite/_static/resources/78.pdf
8. National Association of the Education of Young Children. (2018). Staff-to-Child Ratio and Class Size. Retrieved from https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/accreditation/early-learning/staff_child_ratio.pdf
9. Mississippi Department of Education (MDE). (2018). Literacy-Based Promotion Act. Retrieved from https://mdek12.org/OEER/LBPA
10. Skinner, K. (2018, Jun 5). "More Third-Graders Pass Reading Test on First Try, State Says." Mississippi Today. Retrieved from https://mississippitoday.org/2018/06/05/more-third-graders-pass-reading-test-on-first-try-state-says/
11. Mississippi Department of Education (MDE). (2018). 3rd Grade Mississippi Academic Assessment Program English Language Arts Assessment Results. Retrieved from https://www.scribd.com/document/381278277/3rd-Grade-Maap-Ela-Results-2018-5-31-18-Final-2#from_embed
12. Michael Cormack, Jr. (2019, Jan 6). Electronic Correspondence.
13. Mississippi Department of Education (MDE). (2018). Good Cause Exemption Documentation (LBPA). Retrieved from https://www.mdek12.org/sites/default/files/documents/OAE/Literacy/ResourcesForAdmin/good-cause-exemption-determination-and-documentation-packet-1_20170411085602_42876.pdf
14. The Center for Education Innovation. (n.d.). "Mississippi's Third Grade Gate: Providing Students with the Keys to Unlock the Gate." Retrieved from http://www.mscei.com/blog/mississippis-third-grade-gate-providing-students-with-the-keys-to-unlock-the-gate

FRIEND
LOVE
Fun
Joy
Courage
Imagination
Hope
INSPIRE
Smiles
Encouragement
friends
DELL
PEACE
Reading is good for you

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The Annie E. Casey Foundation creates a brighter future for the nation's children by developing solutions to strengthen families, build paths to economic opportunity, and transform struggling communities into safer and healthier places to live, work, and grow. Mississippi KIDS COUNT is part of the national KIDS COUNT network of state-based organizations supported by the Annie E. Casey Foundation. For more information about Mississippi KIDS COUNT, visit www.kidscount.ssrc.msstate.edu

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MISSISSIPPI
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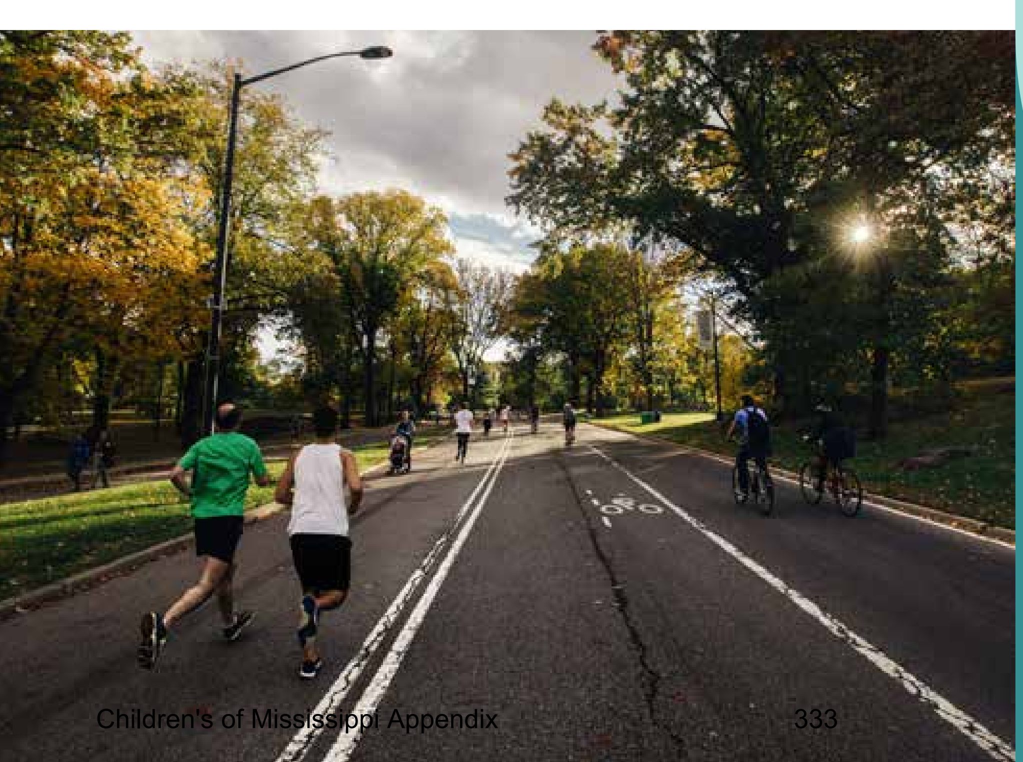
Appendix F: Uproot Mississippi

Building a Healthier Mississippi from the Ground UP

State Health Assessment and Improvement Plan

UProot



Building a Healthier Mississippi from the Ground UP

State Health Assessment and Improvement Plan May, 2016

Mississippi State Department of Health
570 E. Woodrow Wilson Avenue
Jackson, Mississippi 39216

This report is accessible online at www.uprootms.org.

A collaborative effort led by the

MISSISSIPPI STATE DEPARTMENT OF HEALTH

Mary Currier, MD, MPH
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The Mississippi State Health Assessment and Improvement Plan was developed by the Mississippi State Department of Health with the assistance of the Mississippi State Health Assessment and Improvement Committee (SHAIC), an advisory council comprising experts, stakeholders, and representatives from across the state public health system. The SHAIC provided guidance on the assessment process, selected priority areas to address in the State Health Improvement Plan, and will be monitoring the implementation of the Plan. A list of participating partners can be found in Appendix A.

The assessment and improvement plan would not have been possible without the commitment and dedication of MSDH staff and staff from the Mississippi Public Health Institute and CommonHealth ACTION, who participated in data collection and analysis for this process. A list of participating MSDH staff can be found in Appendix B.

We acknowledge the contribution of our consultants,

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for providing coaching and facilitation of the MAPP process and development of the assessment reports.

Pearls of Wisdom Consulting

for providing coaching and facilitation of the Balanced Scorecard process and development of priority area work plans.

This state health assessment and improvement plan was made possible by financial support obtained from the National Public Health Improvement Initiative, the Preventive Health and Health Services Block Grant, and the Public Health Emergency Preparedness Cooperative Agreement.

Letter from the State Health Officer

Dear Colleagues,

It is with great pleasure that I present Mississippi's first-ever State Health Assessment and Improvement Plan. Over the past year, Mississippi State Department of Health staff and the Mississippi State Health Assessment and Improvement Committee (SHAIC), in collaboration with partners across the state public health system, have worked hard to develop this comprehensive assessment.

The findings from the Building a Healthier Mississippi State Health Assessment provide insight on the health and quality of life of Mississippians across the state, and inform the development of the Mississippi State Health Improvement Plan, which lays out a comprehensive roadmap for improving the health of Mississippi residents over the next five years.

The findings of the State Health Assessment highlight significant challenges for our state. However, they also reveal many assets and resources present in our communities and across the public health system that we can leverage to improve health outcomes and to strengthen public health for Mississippians. Improving the health and quality of life of Mississippians will require an alignment of efforts throughout the state, and the inclusion of health as a consideration in everything we do. We must change our culture to be one of health, using the data gathered in this assessment to start that process and measure our success.

As we move forward, I want to sincerely thank all of the partners and residents across the state who contributed to this assessment process, and ask for your continued engagement in the future as we develop and implement our State Health Improvement Plan.

Sincerely,

Mary Currier, MD, MPH

Mary Currier, MD, MPH

Mississippi State Health Officer

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Executive Summary

In 2014 through 2016, the Mississippi State Department of Health began its first-ever State Health Assessment and State Health Improvement Plan to determine the state's greatest health needs. This process was a collaborative effort that engaged more than 19,000 residents, public health professionals, and community partners across the state.

The **Building a Healthier Mississippi** State Health Assessment provides an overview of the health and social wellbeing of Mississippians and the issues affecting our state's public health system. Understanding our state's current health and quality of life, as well as the many factors that influence health, provided an important foundation of knowledge to inform the development of **Building a Healthier Mississippi** State Health Improvement Plan to improve our state's health.

The findings from the State Health Assessment informed the selection of nine priority issues across three categories. The development of the **Building a Healthier Mississippi** State Health Improvement Plan narrowed the nine priorities to four which are highlighted in yellow below:

Address Social Determinants of Health

- Reduce Poverty
- Increase Educational Attainment

Strengthen Public Health Infrastructure

- Create a Culture of Health
- Improve Access to Care
- Shared Public Health Agenda

Improve Health Status and Reduce Health Disparities

- Improve Mental Health
- Reduce Rates of Chronic Disease
- Improve Sexual Health
- Improve Infant Health

The process of developing the 2016 **Building a Healthier Mississippi** State Health Improvement Plan (SHIP) has served as a catalyst for moving diverse groups and sectors of the state toward a common health agenda over the next five years.

In this Plan, there are specific goals with each of the identified community health priorities. While this Plan does not address every strength and weakness identified in the State Health Assessment, it does provide a clear course of direction for this Plan cycle. The Plan identifies high-impact strategic issues and desired health and public health system outcomes to be achieved by the coordinated activities of the many partners who provided input.

Part I – State Health Assessment

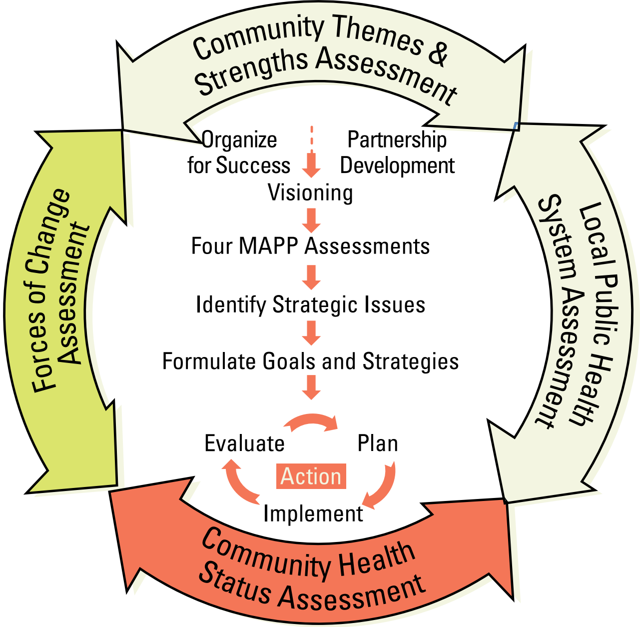
Mobilizing for Action through Planning and Partnerships (MAPP) Framework

The Mississippi State Department of Health and the Mississippi State Health Assessment and Improvement Committee (SHAIC) used the MAPP framework to guide the assessment process. MAPP is a community-driven[1] strategic planning framework that assists communities in developing and implementing efforts around the prioritization of public health issues and the identification of resources to address them. The MAPP process was developed by the National Association for County and City Health Officials (NACCHO) and the Centers for Disease Control and Prevention (CDC), and is considered the gold standard for health assessment and improvement planning.

The MAPP framework promotes a system focus, emphasizing the importance of partners across the public health system and the dynamic interplay of factors and forces within the public health system. The focus on an inclusive, community-driven process assures that the diverse perspectives of public health system stakeholders and community residents are sought to inform a shared understanding of health and quality of life, as well as a shared vision for a healthy future. Partnerships and collaboration are emphasized in the MAPP model to underscore the critical importance of shared resources and responsibility to make the vision for a healthy future a reality[2].

The key phases of the MAPP process include:

- Organizing for Success and Developing Partnerships
- Visioning
- Conducting the Four MAPP Assessments
- Identifying Strategic Issues
- Formulating Goals and Strategies
- Taking Action (Planning, Implementing, and Evaluating)



The four MAPP assessments include:

- State Health Status Assessment
- State/Community Themes and Strengths Assessment
- Forces of Change Assessment
- State Public Health System Assessment

1 For the purposes of the MAPP process, the Mississippi State Department of Health defines community broadly as the residents of the state of Mississippi and the state's partners through the state's public health system, including state and local government agencies, businesses, non-profits, academia, and other entities that influence the health and well-being of Mississippians.

2 National Association for County and City Health Officials, 2015.

Collaborative Approach

The State Health Assessment was a collaborative effort that engaged a diverse range of public health partners, stakeholders, and Mississippi residents to inform a shared understanding of health and quality of life, create a common vision for a healthy future, and build collective investment in implementing strategies to address priority issues.

MAPP's emphasis on a system-focused approach rather than an agency-focused approach underscores the critical role of partnerships and collaboration in the State Health Assessment process. The SHAIC, an advisory council comprised of experts, stakeholders, and representatives from across the state public health system, played a central role in the assessment process and will continue this central role in the planning and implementation process. This collaborative approach assures shared ownership and responsibility for the State Health Assessment and State Health Improvement Plan.

Vision and Values

The SHAIC developed the following vision and values to guide the State Health Assessment process:

Vision:

All Mississippians living healthier, longer lives due to a thriving public health effort that is supported by active and committed citizens and organizations.

Values:

- **Integrity:** Strive to do the right thing to achieve the best public health outcomes through honesty, trustworthiness, and transparency in all we do;
- **Collaboration:** Value the diversity and unique contributions of partners, develop positive relationships, foster innovative solutions, and strengthen capacity to accomplish our mission;
- **Service:** Demonstrate a commitment to public health through compassionate actions and stewardship of time, resources, and talents;
- **Quality:** Exhibit superior performance and continuous improvement in knowledge and expertise;
- **Equity:** Promote equity through fairness and social justice within the context of health in diverse communities;
- **Effectiveness:** Utilize evidence, science, best practices, resources, and time to achieve optimal results; and
- **Accountability:** Maintain the highest standards of responsibility, transparency, and accountability to the citizens of Mississippi.

Process Flowchart for the State Health Assessment and Improvement Plan

The state health assessment and improvement plan was conducted following the process outlined below:

Leadership

MSDH Senior Advisory Committe	State Health Assessment and Improvement Committee	MSDH Staff Leadership Team	Community Engagement and Input

Vision and Values

All Mississippians living healthier, longer lives due to a thriving public health effort that is supported by active and committed citizens and organizations.

Integrity	Collaboration	Service	Quality	Equity	Effectiveness	Accountability

Health Assessments

State Health Assessment	State/Community Themes and Strengths Assessment		Forces of Change Assessment	State Public Health System Assessment
Epidemiological Analysis of Health and Social Determinants	Statewide Survey	Focus Group and Community Conversations	SHAIC Meeting	Stakeholder Meeting

Analysis of Cross Cutting Themes and Priority Issues

Key Findings Meeting with SHAIC	4 Community Input Webinars	Public Comment Period

Development of State Health Improvement Plan

Formulate Goals and Strategies	Develop Action Plan	Implement Action Plan	Evaluate Action Plan

Leadership

The State Health Assessment process began by convening the leadership structure. Senior staff of the Mississippi State Department of Health formed an advisory committee that met monthly over the course of a year to provide guidance on partnership development, assessment planning, and report development. As the MAPP model emphasizes a collaborative, stakeholder-engaged process, a State Health Assessment and Improvement Committee (SHAIC), comprised of a diverse range of organizations and stakeholders throughout the state public health system, was convened to serve as the primary advisory body for the process. This group met at least once each quarter to conduct MAPP assessments and review assessment findings.

A core team of MSDH staff led the coordination and implementation of the MAPP process, and engaged the MSDH district staff and public health partner organizations in assessment and community input activities.

The State Health Assessment engaged Mississippi residents and stakeholders to seek input at multiple stages of the process. Community input was sought through a statewide survey and a series of focus groups and community conversations that took place across Mississippi's nine public health districts. Key findings of the four MAPP assessments were shared broadly with the public through the MSDH website and Facebook page, and stakeholders and residents were invited to vet the priority areas selected by the SHAIC through a series of community input webinars and through a public comment period on the MSDH website. Public health districts and partner organizations participated in disseminating information on these input opportunities to ensure that they were shared widely among the public.

Vision and Values

During its preliminary meeting, the SHAIC composed vision and values statements to guide the State Health Assessment and Improvement Planning process, as well as a mission statement to summarize the purpose of the State Health Assessment and State Health Improvement Plan. This mission of the State Health Assessment, "Working together to establish public health priorities, goals, objectives, and strategies to develop a culture of healthy people in healthy communities," described how the state would achieve its vision of "All Mississippians living healthier, longer lives due to a thriving public health effort that is supported by active and committed citizens and organizations." The SHAIC's selection of values was referred to throughout the MAPP process to ensure that all State Health Assessment and Improvement Plan activities were in line with these guiding principles.

Health Assessments

The **State Health Status Assessment** was conducted through an epidemiological analysis of demographic, social, and health indicators from a variety of state and national surveillance data sources. MSDH epidemiologists gathered and analyzed these data, which were then compiled into a report. This assessment constitutes a snapshot of the health status and social wellbeing of Mississippians, highlighting disparities in health and social outcomes that must be addressed to improve population health and quality of life.

The **State/Community Themes and Strengths Assessment** sought community input from Mississippians through a statewide survey and a series of community conversations and focus groups throughout each of the state's nine public health districts.

Mississippi conducted a statewide survey of 18,946 Mississippians throughout the state. While not a representative sample, survey respondents generally reflected the demographic composition of the state. The survey explored Mississippians' perceptions on health status, health care, social services, quality of life, social support, and economic opportunity in their communities.

A total of 48 focus groups and community conversations were also held in communities throughout the state to explore local perspectives regarding community assets and challenges, and barriers to health and quality of life Mississippians experience in their communities. These focus groups and community conversations were also used to secure input from state residents on how we can improve health and wellbeing in communities across the state.

Results from the survey and focus group were analyzed and compiled into a report. This assessment represents Mississippians' perspectives and lived experience of important health and quality of life issues in their communities, highlighting the community voice on local health priorities.

The **Forces of Change Assessment** was conducted through a convening of the SHAIC to discuss trends, factors, and events present or on the horizon in the near future that affect the health of the state or the Mississippi public health system, and to explore threats and opportunities generated by these occurrences.

Dialogue from this assessment was captured and summarized in a report, highlighting important issues affecting public health in Mississippi and opportunities to address challenges and leverage resources to strengthen public health in the state. This assessment represents the preeminent challenges and opportunities the state must be prepared to address in the near future to protect and improve the health of Mississippians.

The **State Public Health System Assessment** was conducted through a day-long retreat of over 100 partners and stakeholders from sectors across the public health system, including government, community based organizations, businesses, academic institutions, health care providers, and non-profit and advocacy organizations. Participants assessed the public health system's collective performance in delivering essential public health services to Mississippians.

Dialogue from this assessment was captured and summarized in a report, highlighting strengths, weaknesses, and opportunities to collectively improve the state public health system. This assessment is an illustration of the performance of Mississippi's public health system and serves as a roadmap for partners and stakeholders across the state to collectively strengthen public health services.

Analysis of Cross Cutting Themes and Identification of Priority Issues

Upon completion of the four MAPP assessments and reports, the SHAIC convened to review key findings from the assessments and to discuss cross-cutting themes across the four assessments. Following analysis of cross-cutting themes, the SHAIC applied the following prioritization criteria to identify a list of strategic issues:

- The issue helps to achieve our vision.
- The consequences of not addressing the issue are severe.
- There are health disparities related to this issue that must be addressed.
- The issue is a root or underlying cause for multiple health/system issues.
- There are strengths and assets to leverage.

This process resulted in a list of nine priority issues across three categories:

Address Social Determinants of Health

- Reduce Poverty
- Increase Educational Attainment

Strengthen Public Health Infrastructure

- Create a Culture of Health
- Improve Access to Care
- Shared Public Health Agenda

Improve Health Status and Reduce Health Disparities

- Improve Mental Health
- Reduce Rates of Chronic Disease
- Improve Sexual Health
- Improve Infant Health

The key findings and priorities were then shared through a series of community input webinars to solicit feedback from partner organizations and state residents on the findings from the assessment and to vet the proposed priorities with the public. A recording of the webinar and information on each of the proposed priority issues were posted on the MSDH website, and public comment on the priorities was solicited over the course of two months. Community feedback demonstrated strong support for the proposed priority issues.

State Health Assessment Key Findings

State Health Status Assessment

Background & Methods

The **State Health Status Assessment** answers the questions:

- **How healthy are our residents?**
- **What does the health status of our community look like?**

The **State Health Status Assessment** was conducted through epidemiological analysis of state and national surveillance data.

Key Findings

Demographics

- 60% of the state's population identified as Caucasian in the most recent Census, 37% identified as African American, and 3% of the population identified as another race (Native American, American Indian, Asian or other). Three percent of the population identified as Hispanic or Latino.
- About 96% of the population speaks English as a primary language. The next largest primary language is Spanish, with 2.4% of Mississippians speaking Spanish as their primary language.
- Mississippi's population is growing, but at a slower rate than the average growth nationwide. Most of the growth in Mississippi is occurring in metropolitan areas, while the majority of rural areas are losing population.

Educational Attainment

- Mississippi has a smaller proportion of population who has completed higher education compared to the U.S.
- Among Mississippi's population 25 and older, approximately 1 in 5 has not completed high school.
- **Disparities:** African Americans and individuals living in rural communities have lower high school completion rates than Caucasians and individuals living in metro areas.

Poverty

- In 2013, the median household income in Mississippi was $40,000 compared to $53,000 nationally.
- 22.5% of Mississippi's population lives under the poverty level.
- **Disparities:** Statewide, 36% of African Americans live in poverty, compared with 14% of Caucasians. The poverty rate in rural counties is substantially higher than metro counties.

Access to Care

- From 2011 to 2013, 17.3% of Mississippians lacked health insurance.
- **Disparities:** 20% of African American residents and 38% of Latino/Hispanic Mississippians lack health insurance, compared with 15% of Caucasian Mississippians.

Mortality

- In 2012, Mississippi's age-adjusted mortality rate was 28% higher than the national rate, and the highest of all 50 states.
- The 5 leading causes of death for 2012 included: heart disease, cancer, emphysema and other chronic lower respiratory diseases, accidents/unintentional injuries, and stroke.
- **Disparities:** The 2012 age-adjusted mortality rate was higher for African American Mississippians than for Caucasian Mississippians.

Sexual Health

- In 2012, Mississippi had the highest rates of chlamydia and gonorrhea in the country, the 10th highest rate of HIV infection, and the 11th highest rate of syphilis in the nation.
- **Disparities:** Youth and young adults age 15-24 and African Americans are disproportionately affected by STIs.

Birth Outcomes

- Compared to national rates, Mississippi has significantly higher rates of: infant mortality, premature birth, low birth weight, and teen births.
- **Disparities:** African American Mississippians are disproportionately affected by adverse birth outcomes.

Chronic Disease Risk Factors

- In a recent survey, Mississippians reported very low reports of fruit and vegetable consumption and low rates of physical activity. Mississippi has the 5th highest smoking rate in the country.
- In 2013, Mississippi had the highest obesity rate in the nation, tied with West Virginia, and 40% of Mississippi children were overweight or obese. Mississippi's diabetes rate is higher than the national rate.
- **Disparities:** Individuals with lower educational attainment and lower income are more likely to report smoking. African American Mississippians are disproportionately affected by diabetes.

State/Community Themes and Strengths Assessment

Background & Methods

The **State/Community Themes and Strengths Assessment** answers the questions:

- **What is important to our community?**
- **How is quality of life perceived in our community?**
- **What assets do we have that can be used to improve community health?**

To answer these questions, the Mississippi State Department of Health conducted a statewide survey and facilitated a series of focus groups and community conversations across the state.

Key Findings

Perception of Community Health

- Survey respondents most frequently described their communities as "somewhat healthy." Only 21% of survey respondents described their communities as healthy or very healthy.
- In rating personal health, 57% of survey respondents rated their personal health as healthy or very healthy and 8% rated their personal health as unhealthy or very unhealthy.

Most Important Factors for a Healthy Community

Survey respondents rated the following as the top 5 most important factors for a healthy community:

- Good place to raise children
- Good schools
- Low crime/safe neighborhoods
- Good jobs and healthy economy
- Access to health care

Satisfaction with Quality of Life

When survey respondents were asked about satisfaction with quality of life in their community:

- 58% of Caucasian respondents reported satisfaction or strong satisfaction, compared with 43% of African American respondents.
- African American respondents were almost twice as likely to report that they were unsatisfied or strongly unsatisfied with quality of life in their communities compared to Caucasian respondents.

Community Challenges

Focus group and community conversation participants frequently cited the following as challenges they face in their communities:

- Lack of access to affordable housing, healthy food, and healthcare
- Community divisiveness and tension
- Lack of access to quality employment
- Lack of community infrastructure (lack of public transportation, sidewalks absent or in disrepair, etc.)
- Lack of access to recreational opportunities, particularly for youth and seniors
- Lack of community safety
- Distrust of healthcare providers and facilities

Community Assets

Focus group and community conversation participants frequently cited the following as the best parts of life in their communities:

- Friendly people
- Small-town feel
- Natural beauty
- Community safety

A detailed list of assets and resources can be found in Appendix C.

Barriers to Health

Focus group and community conversation participants discussed a variety of barriers to health in their communities:

Environmental

- Lack of safe places to exercise and play
- Air and water pollution

Economic

- High cost of accessing basic resources
- Lack of access to good paying jobs

Cultural

- Unhealthy traditional cuisine
- Traditions centered around food consumption

Social

- Unequal access to opportunities to participate in the community
- Lack of community unity
- Lack of social and recreational outlets for community members

Behavioral

Lack of healthy habits such as vegetable consumption and physical activity

Political

Lack of political and public support for public health

Forces of Change Assessment

Background & Methods

The Forces of Change Assessment answers the questions:

- **What is occurring or might occur that affects the health of our state or the Mississippi public health system?**
- **What specific threats or opportunities are generated by these occurrences?**

The Mississippi State Health Assessment and Improvement Committee convened to discuss important issues affecting Mississippi, and their potential implications on the health and quality of life of Mississippians and on the state's public health system.

Key Findings

Health Care System Infrastructure and Access to Care

- High rates of uninsured individuals, provider shortages
- Pressure on underfunded public health to fill gaps
- Payment model driven by treatment versus prevention
- **Opportunities:** Advocacy at local, state, and federal level, adoption of Medicaid expansion

Poverty

- High unemployment rate and limited access to jobs with living wages
- Low investment in education
- Inadequate investment in safety net services
- **Opportunities:** Invest in education, child development, vocational training, and workforce planning and development; improve access to healthcare and other basic services

Environmental, Structural, and Behavioral Barriers to Health

- Limited access to healthy foods
- Lack of access to recreation spaces
- Stress of living in unsafe neighborhoods
- **Opportunities:** Invest in walkable communities and parks; improve access to healthcare; create policies that improve living and working conditions; and educate the public on healthy behaviors

Health Literacy and Health Education

- Low levels of health literacy – affects ability to make appropriate health decisions
- Low educational attainment and literacy rates

- **Opportunities:** Create readily available, accessible, culturally appropriate health information; disseminate targeted health messages to different communities

Lack of Political and Financial Support of Public Health

- Severe underfunding of public health system, low tax revenue to support state governmental services
- Little public or political support to invest in infrastructure and services and create policy changes that remove barriers to good health
- **Opportunities:** Improve communication with policymakers and the public; articulate the critical role and importance of public health

Changing Demographics

- Growing demographic and cultural diversity
- Increasing population of incarcerated individuals and parolees
- Population loss and aging in rural communities
- **Opportunities:** Develop service delivery that reflects understanding of cultural differences; support re-entry efforts for formerly incarcerated individuals to prevent recidivism; create social supports for aging individuals to prevent isolation

Impact of Chronic Disease

- Obesity, diabetes, and heart disease are among Mississippi's most pressing health concerns
- Limits workforce productivity and increases state health care spending
- **Opportunities:** Ensure access to quality preventative care; increase access to healthy foods; support active living by building walkable communities; reduce tobacco use through statewide legislation and community-level smoking bans

Impact of Natural and Human-made Disasters

- Hurricane Katrina, BP Oil Spill, and other disasters have caused significant economic loss and severe environmental damage in Mississippi communities
- Families more vulnerable due to high poverty and unemployment
- **Opportunities:** Invest in emergency preparedness infrastructure; promote sustainable agricultural practices and environmental regulations

Urban/Rural Disparities

- Rural communities are at a disadvantage for receiving funding for critical infrastructure and are challenged by reduced access to health care
- **Opportunities:** Increase recruitment incentives to health care providers who practice in rural communities, such as scholarships and debt forgiveness

State Public Health System Assessment

Background & Methods

The **State Public Health System Assessment** answers the questions:

- **What are the activities and capacities of our public health system?**
- **How well are we providing the 10 Essential Public Health Services in Mississippi?**

Stakeholders from across the state public health system gathered to conduct this assessment, to discuss the collective performance of Mississippi's public health system, and to identify system strengths, weaknesses, and areas for improvement in addressing the 10 Essential Public Health Services:

1. Monitor health status to identify and solve community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships and action to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.
6. Enforce laws and regulations that protect health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure competent public and personal health care workforce.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research for new insights and innovative solutions to health problems.

Key Findings

Mississippi Public Health System Strengths:

- Robust health hazard surveillance
- Nationally recognized excellence in emergency preparedness
- Robust communications in place to inform health providers and public about disease prevention and mitigation
- Strong relationships among public health system partners
- Success of tobacco prevention efforts serves as a best practice example

Mississippi Public Health System Weaknesses:

- Prevalence and severity of chronic disease and obesity
- System has low capacity and resources to address surveillance and response to long-term problems like chronic disease
- Siloing and underfunding of mental health
- Low levels of health literacy
- Low funding for public health
- Lack of public support for public health
- Workforce shortages limit capacity

Opportunities to Improve the Mississippi Public Health System:

- Strengthen funding and public support for public health
- Advance chronic disease prevention
- Foster a culture of health across state
- Address the social determinants of health
- Increase strategic alignment and coordination of public health efforts throughout the system
- Improve workforce development efforts to increase system capacity

Priority Issues To Address In The Building A Healthier Mississippi State Health Improvement Plan

Priority Issues

Based on the key findings from the State Health Assessment process, the SHAIC selected nine priority issues to address in the State Health Improvement Plan, which fall under three categories:

Address Social Determinants of Health
Reduce Poverty
Increase Educational Attainment
Shared Public Health Agenda
Improve Access to Care
Strengthen Public Health Infrastructure
All Mississippians living healthier, longer lives due to a thriving public health effort that is supported by active and committed citizens and organizations.
Create a Culture of Health
Improve Mental Health
Improve Infant Health
Reduce Rates of Chronic Disease
Improve Sexual Health
Improve Health Status and Reduce Health Disparities

Address Social Determinants of Health

- Reduce Poverty
- Increase Educational Attainment

Strengthen Public Health Infrastructure

- Create a Culture of Health
- Improve Access to Care
- Shared Public Health Agenda

Improve Health Status and Reduce Health Disparities

- Improve Mental Health
- Reduce Rates of Chronic Disease
- Improve Sexual Health
- Improve Infant Health

During the assessment of the state's resources and capacity of the public health partners, the SHAIC further narrowed the nine priorities to four:

Address Social Determinants of Health

- Increase Educational Attainment

Strengthen Public Health Infrastructure

- Create a Culture of Health

Improve Health Status and Reduce Health Disparities

- Reduce Rates of Chronic Disease
- Improve Infant Health

Address Social Determinants of Health

Reduce Poverty

Rationale: Mississippi has the lowest average household income of all 50 states, and one of the highest levels of poverty. In households with a single female head, 42% were living below the poverty level in 2013.

Why it matters: People living in poverty cannot meet basic needs such as health care and nutritious food. High levels of poverty are also associated with high rates of chronic disease.

Increase Educational Attainment

Rationale: Among Mississippians 25 and older, approximately 1 in 5 has not completed high school. The situation is worse among African-Americans, where 1 in 4 on average have not completed high school.

Why it matters: People with higher levels of education are more likely to have healthy diets and to exercise regularly. They are also less likely to participate in behaviors like smoking which put their health at risk. Education also strongly determines an individual's future employment and income, both of which affect access to health insurance and health care.

Strengthen Public Health Infrastructure

Create a Culture of Health

Rationale: Healthy communities surround their residents with people and systems that promote wellness. In addition to health services for those who fall ill, wellness means easy access to healthy foods, public spaces that encourage exercise and safe outdoor activity in a smoke and drug free environment, and other factors that can help prevent illness. It also means a community of people who are knowledgeable about health, who care about the health of their whole community, and work to make the place they live a healthy one.

Why it matters: Creating a culture of health makes it easier to maintain good health as part of daily life – not just when a person is sick.

Improve Access to Care

Rationale: In 2013 survey, 1 in 5 respondents were unable to afford a doctor at some point in the past year. And about 1 in 6 Mississippians were without any kind of health insurance.

Why it matters: Lifelong health depends not only on affordable access to care for those who are sick, but preventive health care to avoid illness, and ongoing care to manage chronic diseases like diabetes.

Shared Public Health Agenda

Rationale: State health agencies and community health organizations do not currently have a common set of priorities that they follow. Instead, efforts and resources are working independently in many directions at once.

Why it matters: By combining the efforts of many organizations toward common goals, we could expect more success and better results in improving the state's health.

Improve Health Status and Reduce Health Disparities

Improve Mental Health

Rationale: Health for the whole person means a healthy body as well as a healthy mind. But mental illness is treated separately from physical health in Mississippi, and does not receive the same level of funding that physical health does.

Why it matters: Poor mental health often means that physical health suffers as well. The absence of good mental health care and services also reduces the potential contributions that individuals can make to their communities.

Reduce Rates of Chronic Disease

Rationale: Mississippi is far above the national average in its rate of diabetes, cancer, heart disease, and other diseases that shorten lifespan and reduce the quality of life. In 2013, Mississippi and West Virginia led the nation in obesity. Contributing to our high rates of chronic disease are very low levels of physical activity and inadequate vegetable and fruit consumption.

Why it matters: Chronic diseases are a personal burden financially and in years of life lost, and a burden to the community in lost productivity and higher expenses for medical care.

Improve Sexual Health

Rationale: In 2012, Mississippi had the highest rate of gonorrhea and chlamydia infections in the nation, and it ranked 10th in HIV infection. Younger Mississippians and African-Americans are disproportionately affected by sexually-transmitted diseases: 64% of all cases are among African-Americans.

Why it matters: These are highly contagious diseases whose control imposes a costly burden on the state. They also strike at one of the state's most valuable populations – its youth – and limit the potential these youth can fulfill.

Improve Infant Health

Rationale: Infants are the future of the state, but nationally Mississippi has significantly higher rates of premature birth, low birthweight babies, and infants who do not survive the first year of life.

Why it matters: Infants who are born healthy are more likely to grow into healthy adults with fewer health care needs and costs.

PART II: 2016 STATE HEALTH IMPROVEMENT PLAN

Approach to Identifying Strategic Issues

During MAPP Phase 4, Identification of Strategic Issues, the SHAIC utilized the Balance Scorecard concept for Mississippi which is based on the data yielded from the Four MAPP Assessments. This resulted in the development of a State Balanced Scorecard. For more information on the Balanced Scorecard Concept, please see the section entitled "Identifying Key Strategic Issues" located in Part I of this report.

After analysis and consideration of community feedback and statistical health data, the SHAIC developed a list of state health priorities that they could have the greatest impact on.

Questions asked during the selection process included:

- **Statistical Data: Is the data trending up or down? Is it significantly better or worse than the Peer State, or the National Average?**
- **Perceptual Data: What does the community believe our main health concerns are?**
- **Opportunities for Greatest Probable Impact: Where can the greatest impacts be made over the next 3 years when considering available resources, as well as, capacity within the Mississippi state public health system? What is the risk of not addressing an issue?**

The following criteria were also used to assist in the determination of the most important strategic objectives:

1. **Magnitude:** How many people are affected?
2. **Seriousness:** To what extent does this issue affect quality of life or economic burden?
3. **Concern:** What do the community and stakeholders think about this issue?
4. **Feasibility:** Can we do it?
5. **Strategies:** Is the problem responsive to interventions?

Priority	**Magnitude** *How many people are affected?*	**Seriousness** *To what extent does this issue affect quality of life or economic burden?*	**Concern** *What do the community and stakeholders think about this issue?*	**Feasibility** *Can we do it?*	**Strategies** *Is the problem responsive to interventions?*	**Total**
Increase Educational Attainment	5	5	5	3	3	4.2
Create a Culture of Health	5	5	4	4	5	4.6
Improve Infant Health	3.82	4.36	3.18	4.18	4.18	3.94

Priority	**Magnitude** *How many people are affected?*	**Seriousness** *To what extent does this issue affect quality of life or economic burden?*	**Concern** *What do the community and stakeholders think about this issue?*	**Feasibility** *Can we do it?*	**Strategies** *Is the problem responsive to interventions?*	**Total**
Reduce Rates of Chronic Disease	5	5	4.63	3.63	4.18	4.49

The SHAIC identified three cross-cutting themes for each of the four priority areas. They were health disparity, mental health and access to care.

Health Disparity

A health disparity is a difference in health status or in health services delivery that is associated with social, economic or environmental disadvantage. In other words, it is an indication that all Mississippians do not have the same chance for good health. The SHAIC ultimately decided to make health disparities a cross-cutting issue because this was a concern within so many of the priority areas. Most of the priority areas have disparity objectives which will be tracked according to race, gender, ethnicity and socioeconomic status when these data are available. A detailed list of Key Health Disparity Objectives can be found in Appendix D.

Mental Health

According to the World Health Organization, in developed countries such as the United States, mental illnesses account for more disability than any other group of illnesses, including cancer and heart disease. The Centers for Disease Control and Prevention estimate that one-fourth of adults in the United States currently have a mental illness and nearly one-half will develop at least one mental illness during their lifetime. The effects of mental illness range from minor disruptions in daily functioning to personal, social, and occupational impairments that can be incapacitating and even lead to premature death. Mental illness is also associated with increased morbidity from a number of chronic diseases, including cardiovascular disease, diabetes, cancer, asthma and obesity. Injury rates are two to six times higher for persons with a mental illness than they are for the overall population. This includes both unintentional injuries and intentional injuries (such as homicides and suicides). Mental illness also is associated with use of tobacco products and alcohol abuse, which are harmful to a person's health.

Access to Care

Access to health care is important for improving quality of life and eliminating disparities in health. When people are able to get preventive care or treatment for their health conditions, they have better health outcomes, improved perceptions of their health, and increased productivity.

Formulating Goals & Strategies

Targets and measures outlined in this Plan are aligned with the national Healthy People 2020 goals and objectives, wherever applicable. A detailed list of alignment with national priorities can be found in Appendix E. The science-based measurable objectives and goals identified in Healthy People 2020 are applicable at the

national, State, and local levels. These objectives and goals allow communities to engage multiple sectors, to take actions to strengthen policies and improve practices that are driven by the best available evidence and knowledge.

As with Healthy People 2020, the overarching goal of utilizing evidence-based goals and strategies is to ensure that Mississippi sustains its journey to:

- Promote quality of life, healthy development, and healthy behaviors across all life stages.
- Achieve health equity, eliminate disparities, and improve the health of all groups.
- Create social and physical environments that promote good health for all.
- Support programs or policies recommended in the national health plans.

Take Action! - Tracking & Evaluating Results

This implementation phase of the MAPP process is a two-year cycle, which begins January 2016 and will end with the completion of the budget cycle in 2018. During this phase, the efforts of the previous phases begin to produce results, as the Mississippi State public health system develops and implements action plans. Because MSDH bears statutory responsibility for protecting the public's health, its staff initiated the SHIP and convened partners to develop it. However, MSDH is only one part of the public health system. Other agencies, non-governmental organizations, institutions and informal associations play critical roles in creating conditions in which people can be healthy. MSDH leadership realized that government alone cannot match the collective strength of individuals, communities and various social institutions working together to improve health, so they created a collaborative state health improvement process, culminating in the SHIP. The ongoing SHIP process and the plan itself both reflect efforts of many of the key players in the public health system to promote collaboration, coordination and efficiency. The ongoing process of implementing the SHIP will bring together these system partners on a periodic, regular basis to coordinate to meet SHIP goals. As such, this plan is meant to be a living document rather than an end point. It reflects a commitment of partners and stakeholders to coordinate to address shared issues in a systematic and accountable way.

LOOKING AHEAD

The success of each goal is based on outcome measurements that track progress and project impact. Each priority area has an assigned co-chair, one from the Mississippi State Health Department and one from our Partners and, work groups who are working together to develop coordinated Action and Evaluation plans. Progress will be monitored by each co-chair as well as the SHAIC.

Evaluation will remain important throughout the remainder of the two-year cycle so that progress toward Plan goals is both meaningful and measurable. Continual plan updates will regularly occur and will be based on feedback members of the SHAIC provide. Lessons learned from what actions taken will help guide future actions (i.e. what worked well? what didn't work well?). Evaluation will also help to inform key decision makers to decide if the right strategies were implemented, as well as, if the desired outcomes were achieved.

The detailed priority work plans using the Balanced Scorecard approach can be found in Appendices L through O and presents a comprehensive view of the State Health priorities, strategic objectives, measures, targets, and specific actions.

The State Health Improvement Plan priorities works in concert to improve health and wellbeing for Mississippians. By addressing the social determinants of health and strengthening the state's public health infrastructure, Mississippi can improve health status and reduce health disparities for its residents, achieving the State Health Improvement Plan vision of All Mississippians living healthier, longer lives due to a thriving public health effort that is supported by active and committed citizens and organizations.

APPENDICES

Appendix A - Participating Partners and Organizations

Appendix B - MSDH Contributors

Appendix C - Mississippi State Asset and Resource Inventory

Appendix D – Key Health Disparity Objectives

Appendix E – Alignment With National Priorities

Appendix F - How to Use This State Health Improvement Plan

Appendix G – Glossary of Key Terms

MAPP ASSESSMENTS

Appendix H – State Health Status Assessment

Appendix I – State/Community Themes and Strengths Assessment

Appendix J – Forces of Change Assessment

Appendix K – State Public Health System Assessment

WORK PLANS

Appendix L – Increase Educational Attainment

Appendix M – Improve Infant Health

Appendix N – Reduce Chronic Disease

Appendix O – Create a Culture of Health

Appendix A - Participating Partners and Organizations

American Cancer Society

American College of Cardiologists

American Heart Association

American Lung Association

Appalachian Regional Commission

Arts Klassical, Inc.

Blue Cross Blue Shield of Mississippi

Bower Foundation

Catholic Charities Jackson

Center for Mississippi Health Policy

Central Mississippi Area Health Education Center

City of Jackson

CommonHealth ACTION

Dependable Source Corporation

Diabetes Foundation of Mississippi

Eliza Pillars Registered Nurses of Mississippi

Families as Allies

Foundation for the Mid-South

Head Start

Health Resources in Action

Health Ways

I-HELP Inc.

Information & Quality Healthcare

Innovative Behavioral Services, Inc.

Jackson Roadmap to Health Equity Project

Jackson State University

Jackson-Hinds Comprehensive Health Center

Madison County Citizens Services Agency

March of Dimes

Mississippi Academy of Family Physicians

Mississippi Action Coalition on the Future of Nursing

Mississippi Association of Supervisors

Mississippi Band of Choctaw Indians

Mississippi Board of Nursing

Mississippi Business Group on Health

Mississippi Center for Justice

Mississippi Coalition for Vietnamese-American Fisher Folks and Families

Mississippi Community College Board

Mississippi Department of Agriculture and Commerce

Mississippi Department of Education

Mississippi Department of Environmental Quality

Mississippi Department of Human Services

Mississippi Department of Mental Health

Mississippi Department of Rehabilitation Services

Mississippi Department of Wildlife, Fisheries, and Parks

Mississippi Division of Medicaid

Mississippi Economic Council

Mississippi Economic Policy Center

Mississippi Emergency Management Agency

Mississippi Farm Bureau Federation

Mississippi First

Mississippi Health Care Association

Mississippi Health Information Network

Mississippi Healthcare Alliance

Mississippi Hospital Association

Mississippi Institutions of Higher Learning

Mississippi Joint Legislative Committee on Performance Evaluation and Expenditure Review

Mississippi Legislative Budget Office

Mississippi Medical and Surgical Association

Mississippi Migrant Education Service Center

Mississippi Municipal League

Mississippi Nurses Association

Mississippi Office of Nursing Workforce

Mississippi Primary Healthcare Association

Mississippi Public Health Association

Mississippi Public Health Institute

Mississippi Restaurant Association

Mississippi Rural Health Association

Mississippi Rural Water Association

Mississippi Society for Disabilities

Mississippi State Board of Health

Mississippi State Board of Nursing

Mississippi State Department of Health

Mississippi State Extension Service

Mississippi State University Social Science Research Center

My Brother's Keeper

National Coalition of 100 Black Women-Central Mississippi Chapter

National Diabetes and Obesity Research Center, at Tradition

NMHS Unlimited/The Good Life

The Office of the Governor of Mississippi

The Office of the Lieutenant Governor of Mississippi

Office of Mississippi Physician Workforce

The Partnership for a Healthy Mississippi

Robert Wood Johnson Foundation

Rural Health Association

Rush Health Systems

Small Business Administration

United States Department of Housing and Urban Development

United Way of the Capital Area

University of Alabama at Birmingham School of Public Health

University of Mississippi Medical Center

University of Southern Mississippi

W.K. Kellogg Foundation

William Carey University College of Osteopathic Medicine

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Appendix C - Mississippi State Asset and Resource Inventory

This state asset inventory was compiled throughout the state health assessment and improvement process. This inventory will be used to explore the breadth and depth of state assets and resources that may be mobilized to address community health needs. This is a living document, with additional community assets and resources being continually added.

What is an asset? – An asset is anything that improves the quality of community life. It may be a person, group of people, place or institution.

Health Care System Assets

- Alternative Medicine Providers
- University/College Student Health Centers
- Community Health Centers
- Dentists and Dental Clinics
- Disease-based Support Groups
- Emergency Medical Services
- Eye & Ear Care Providers
- Free Clinics
- Health Insurance Plans
- Health Professions Schools/Programs
- Hospitals
- Mental Health Providers
- Nursing Homes
- Pharmacies
- Physical and Occupational Therapists
- Private Physicians
- Public Health Department
- Registered Dietitions
- Rehabilitation, Home Health & Hospice Providers
- School Nurses, Counselors, Psychologists
- Substance Abuse Treatment and Recovery
- Urgent Care Centers

Recreational Assets

- 4H and County Fairs
- Bicycle Courses (BMX)
- Bicycling Clubs
- Community Centers
- Community Dances
- Community Education Programs
- Conservation Activities/Programs
- Golf Courses
- Horseback Riding/Stables
- Parks and Recreation Districts
- Private Membership Fitness Clubs
- Riverboat
- School Based Athletics
- Swimming Locations
- Walking/biking Trails & Sidewalks
- Recreation and Fitness Organizations

Food System Assets

- Agriculture
- Community Gardens
- Farmers Markets
- Food Pantry/Bank/Commodities
- Food Policy and System Groups
- Food Purchasing Programs
- Full Service Grocery Stores
- Garden Supply Centers
- Home Delivered Meal Services
- Nutrition Education Programs/Services
- School Lunch Programs

Cultural Assets

- Agencies That Provide Cultural Support, Education and Advocacy
- Community Events and Festivals
- Crafts and Enrichments Classes/Resources
- Family and Cultural Centers
- Historical Organizations
- Media Organizations
- Museums
- Nature Centers
- Performing Arts Organizations
- Public Spaces

Education Assets

- Charter and Private Schools
- Childcare and Preschool Providers (0-5)
- Community Centers
- Community Colleges and Universities
- Homeschool Organizations
- K-12 School Districts
- Nature Centers
- Public Libraries
- Senior Centers
- Tutoring/Mentoring Organizations
- Virtual & Online Learning
- Vocational/Trade Schools

Organizational Assets

- 12-Step Organizations
- Crisis Intervention
- Chambers of Commerce
- Economic Development Organizations
- Faith-Based Organizations
- Human Service Organizations
- Informal Groups and Meetings
- Local Charities, Grant-Makers, & Foundations
- Multi-Sector Coalitions
- Service Organizations

Public Safety Assets

- Alternative Custody Programs
- Anti Bullying Programs
- Domestic Violence & Crisis Response Organizations
- Emergency Operations Centers
- Emergency Preparedness Coalitions
- Environmental Protection Organizations
- Jails
- Law Enforcement Training Centers
- National Guard
- Neighborhood Watch Programs
- Police and Fire Departments
- Probation and Fire Departments

Housing Assets

- Affordable Housing Programs
- Aging in Place Efforts
- Assisted Living Facilities
- Foster Care Homes (Adult/Child)
- Home Building Charities
- Homeless Coalitions
- Homeless Shelters
- Rehab Programs
- Subsidized Housing Developments
- Rental Housing Landlords and
- Developments
- Weatherization, Home Improvement, and Home Safety Programs

Transportation Assets

- Airports
- Ambulances
- Bicycle Infrastructure
- Long Distance Bus Services
- Mobility Managers
- Public Transportation Providers
- Safe Streets Initiatives/Polices
- Taxis
- Train Service

Employment Assets

- Business Associations
- Development and Social Service
- Department
- Economic Development Organizations
- Farmers and Rural Employers
- Labor Organizations
- Major Employers
- Public Employers
- Self-Employed and Startups
- Unemployment and Job-Placement Services
- Volunteer Organizations

Appendix D – Key Health Disparity Objectives

The objectives in the table below were selected for inclusion in the SHIP because there are clear disparities between people who belong to different racial groups, geographic regions, or other groupings. The disparity measures below will help us evaluate if we are making progress in addressing the objectives in disparately affected groups.

SHIP Objective	Disparately Affected Group	Disparity Measure	Baseline	Target
1.0 Decrease teen pregnancy rate of 15-19 year old women	Black/African-American	Rate of teen pregnancy among young black women ages 15-19 years *Source: MSDH Office of Public Health Statistics*	2013: 62.2/1000	December 31, 2020: 56.0/1000
2.0 Increase the number of mothers who are breastfeeding	Non-Hispanic Black	Percentage of non-Hispanic black infants who were ever breastfed Source: CDC National Immunization Survey	2009-2011 births: 39.5%	2018-2020 births: 43.5%
3.1 Increase the percentage of youth ages 17 and under who engage in 60 minutes of daily physical activity	Non-Hispanic Black	Percentage of non-Hispanic black students in grades 9-12 who achieve 1 hour or more of moderate-and/or vigorous-intensity physical activity daily *Source: YRBS*	2013: 22.0%	2019: 24.2%
3.1.2 Increase the percentage of adults who engage in at least 150 minutes of weekly moderate-intensity aerobic physical activity	Non-Hispanic Black	Percentage of non-Hispanic black adults who achieve at least 150 minutes a week of moderate-intensity aerobic physical activity or 75 minutes a week of vigorous-intensity aerobic activity (or an equivalent combination) *Source: BRFSS*	2013: 34.1%	2019: 37.5%
3.1.3 Decrease the percentage of students in grades 9-12 who consume fruits and vegetables less than 1 time daily	Non-Hispanic White	Percentage of non-Hispanic white students in grades 9-12 who consume fruit less than 1 time daily *Source: YRBS*	2013: 56.7%	2019: 51.0%
3.1.4 Decrease the percentage of adults ages 18 and older who report consuming fruits and vegetables less than one time daily.	Non-Hispanic Black	Percentage of non-Hispanic black adults who report consuming vegetables less than 1 time daily *Source: BRFSS*	2013: 43.2%	2019: 38.9%

Appendix E – Alignment of SHIP Goals and Objectives with National Priorities

SHIP Goals	National Priorities
1.0 Increase high school graduation rates	AH-5.1 Increase the proportion of students who graduate with a regular diploma 4 years after starting 9th grade (HP 2020).
2.0 Improve the care of infants in Mississippi	MICH-1 Reduce the rate of fetal and infant deaths (HP 2020).
3.1 Decrease obesity through the promotion of healthy lifestyles	NWS-9 Reduce the proportion of adults who are obese (HP 2020). NWS-10 Reduce the proportion of children and adolescents who are considered obese (HP 2020).
4.1 Improve the culture of health in Mississippi workplaces	No direct national alignment.
4.2 Improve the culture of health in Mississippi academic settings	No direct national alignment.

SHIP Objectives	National Priorities
1.0 Decrease teen pregnancy rate of 15-19 year old women	FP-8 Reduce pregnancies among adolescent females (HP 2020).
2.0 Increase the number of mothers who are breastfeeding	MICH-21 Increase the proportion of infants who are breastfed (HP 2020).
3.1 Increase the percentage of youth ages 17 and under who engage in 60 minutes of daily physical activity	PA-3.1 Increase the proportion of adolescents who meet current Federal physical activity guidelines for aerobic physical activity (HP 2020).
3.2 Increase the percentage of youth ages 17 and under who consume the daily recommended servings of fruits and vegetables	NWS-14 Increase the contribution of fruits to the diets of the population aged 2 years and older (HP 2020). NWS-15 Increase the contribution of vegetables to the diets of the population aged 2 years and older (HP 2020).
3.3 Increase the percentage of adults who engage in at least 150 minutes of weekly moderate intensity physical activity	PA-2.1 Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for at least 150 minutes/week, or 75 minutes/week of vigorous intensity, or an equivalent combination (HP 2020).
3.4 Increase the percentage of adults who consume the recommended servings of fruits and vegetables.	NWS-14 Increase the contribution of fruits to the diets of the population aged 2 years and older (HP 2020). NWS-15 Increase the contribution of vegetables to the diets of the population aged 2 years and older (HP 2020).
4.1 Increase the number of Mississippi worksites that offer employee wellness programs	PA-12 (Developmental) Increase the proportion of employed adults who have access to and participate in employer-based exercise facilities and exercise programs (HP 2020).
4.2 Increase the percentage of school health councils in full compliance with composition requirements	No direct national alignment.

Appendix F - How to Use This State Health Improvement Plan

Each of us can play an important role in community health improvement here in Mississippi, whether in our homes, schools, workplaces, or churches. Encouraging and supporting healthy behaviors from the start is so much easier than altering unhealthy habits. Below are some simple, ways to use this Plan, to improve the health of your community:

Employers

- Understand priority health issues within the community and use this Plan and recommended resources to help make your business a healthy place to work!
- Educate your team about the link between employee health and productivity.

Community Residents

- Understand priority health issues within the community and use this Plan to improve the health of your community.
- Use information from this Plan to start a conversation with community leaders about health issues important to you.
- Get involved! Volunteer your time or expertise for an event or activity, or financially help support initiatives related to health topics discussed in this Plan.

Health Care Professionals

- Understand priority health issues within the community and use this Plan to remove barriers and create solutions for identified health priorities.
- Share information from this Plan with your colleagues, staff, and patients.
- Offer your time and expertise to local improvement efforts (committee member, content resource, etc.)
- Offer your patients relevant, counseling, education, and other preventive services in alignment with identified health needs of the State of Mississippi.

Educators

- Understand priority health issues within the community and use this Plan and recommended resources to integrate topics of health and health factors (i.e. access to health food, physical activity, risk-behaviors, use of the health care system, etc.) into lesson plans across all subject areas such as math, science, social studies, and history.
- Create a healthier school environment by aligning this Plan with school wellness plans/policies. Engage the support of leadership, teachers, parents and students.

Government Officials

- Understand priority health issues within the community.
- Identify the barriers to good health in your communities, and mobilize community leaders to take action by investing in programs and policy changes that help members of our community lead healthier lives.

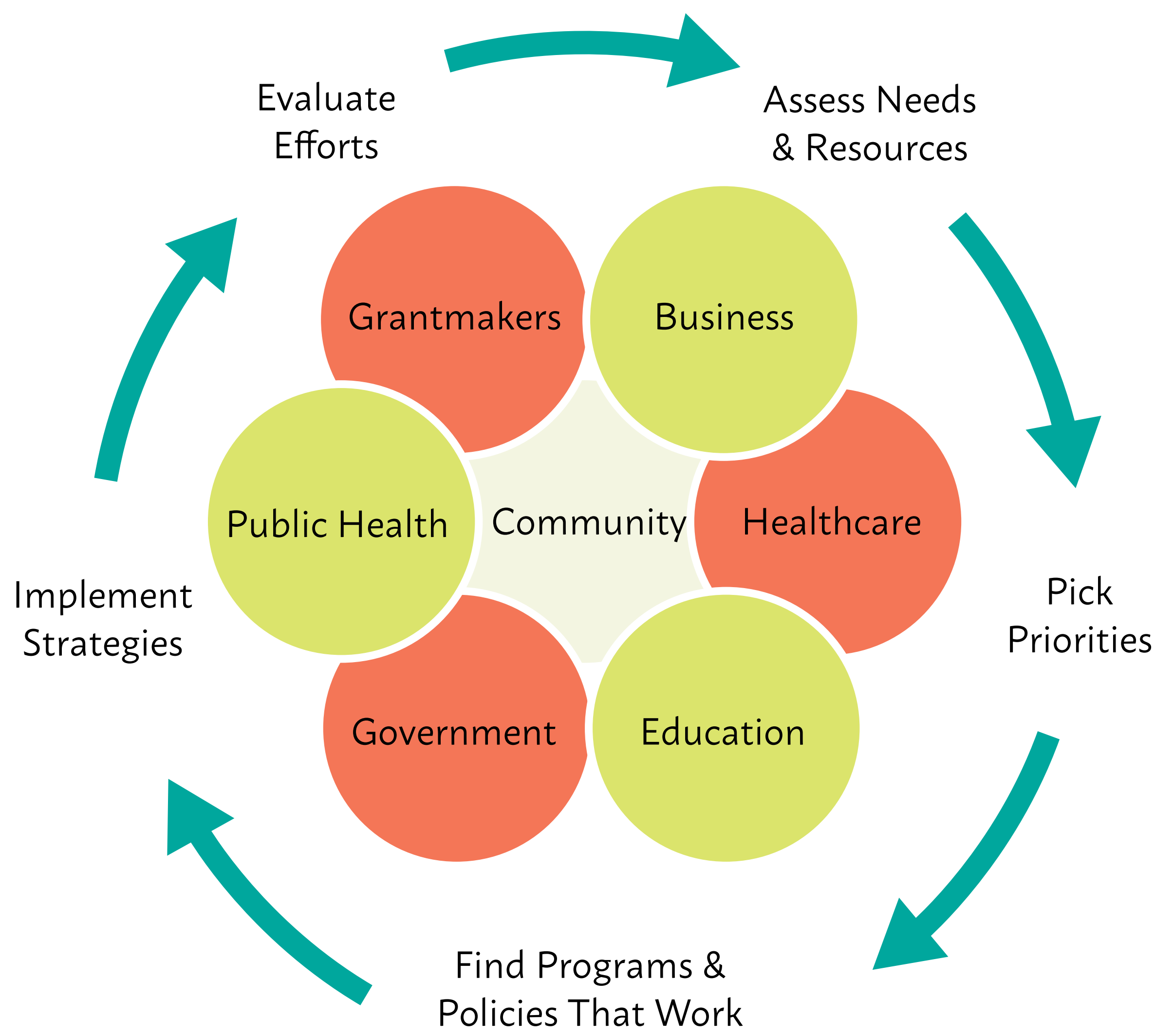
State and Local Public Health Professionals

- Understand priority health issues within the community and use this Plan to improve the health of this community.
- Understand how the State of Mississippi compares with Peer States, Regional Peers, and the U.S. population, as a whole.

Faith-based Organizations

- Understand priority health issues within the community and talk with members about the importance of overall wellness (mind, body and spirit) and local community health improvement initiatives that support wellness.
- Identify opportunities that your organization or individual members may be able to support and encourage participation (i.e. food pantry initiatives, community gardens, youth groups gear around health priorities, etc.).

TAKE ACTION
Work Together



Source: Take Action www.countyhealthrankings.org

Appendix G – Glossary of Key Terms

Community

Community is a group of people who have common characteristics; communities can be defined by location, race, ethnicity, age, occupation, interest in particular problems or outcomes, or other similar common bonds. Ideally, there would be available assets and resources, as well as collective discussion, decision-making and action. (Turnock, BJ. *Public Health: What It Is and How It Works*. Jones and Bartlett, 2009)

Community Assets

Community assets are contributions made by individuals, citizen associations, and local institutions that individually and/or collectively build the community's capacity to assure the health, well-being, and quality of life for the community and all of its members. (*National Association of County and City Health Officials (US). Mobilizing for Action through Planning and Partnerships (MAPP): Achieving Healthier Communities through MAPP, A User's Handbook. 2001 [cited 2012 Nov 7].* http://www.naccho.org/topics/infrastructure/mapp/upload/MAPP_Handbook_fnl.pdf)

Community Health

Community health is a field within public health concerned with the study and improvement of the health of biological communities. Community health tends to focus on geographic areas rather than people with shared characteristics. (http://dictionary.reference.com/browse/community+health) The term "community health" refers to the health status of a defined group of people, or community, and the actions and conditions that protect and improve the health of the community. Those individuals who make up a community live in a somewhat localized area under the same general regulations, norms, values, and organizations. For example, the health status of the people living in a particular town, and the actions taken to protect and improve the health of these residents would constitute community health. (http://www.encyclopedia.com/topic/Community_Health.aspx)

Community's Health

The community's health is the perspective on public health that regards "community" as an essential determinate of health and an indispensable ingredient for effective public health practice. It takes into account the tangible and intangible characteristics of the community, its formal and informal networks.

Community Health Assessment

Community health assessment is a systematic examination of the health status indicators for a given population that is used to identify key problems and assets in a community. The ultimate goal of a community health assessment is to develop strategies to address the community's health needs and identified issues. A variety of tools and processes may be used to conduct a community health assessment; the essential ingredients are community engagement and collaborative participation. (Turnock, B. Public Health: What It Is and How It Works. Jones and Bartlett, 2009).

Community Health Improvement Plan

A community health improvement plan is a long-term, systematic effort to address public health problems on the basis of the results of community health assessment activities and the community health improvement process. A plan is typically updated every three to five years. (http://www.cdc.gov/stltpublichealth/cha/plan.html)

This plan is used by health and other governmental education and human service agencies, in collaboration with community partners, to set priorities and coordinate and target resources. A community health improvement plan is critical for developing policies and defining actions to target efforts that promote health. It should define the vision for the health of the community through a collaborative process and should address the gamut of strengths, weaknesses, challenges, and opportunities that exist in the community to improve the health status of that community (Adapted from: United States Department of Health and Human Services, *Healthy People 2010.* Washington, DC)

This definition of community health improvement plan also refers to a Tribal, state or territorial community health improvement plan.

Community Health Improvement Process

Community health improvement is not limited to issues clarified within traditional public health or health services categories, but may include environmental, business, economic, housing, land use, and other community issues indirectly affecting the public's health. A community health improvement process involves an ongoing collaborative, community-wide effort to identify, analyze, and address health problems; assess applicable data; develop measurable health objectives and indicators; inventory community assets and resources; identify community perceptions; develop and implement coordinated strategies; identify accountable entities; and cultivate community ownership of the process. (National Public Health Performance Standards Program, *Acronyms, Glossary, and Reference Terms*, CDC, 2007. www.cdc.gov/nphpsp/PDF/Glossary.pdf)

Culture of Health

A culture of health is achieved when the collective set of individual and institutional priorities promotes comprehensive health, generates a perception of the need for well-being, and empowers all to lead healthier lives now and in generations to come. We believe this is best accomplished by weaving health into all policies, decisions and activities.

Demographics

Demographics are characteristic related data, such as size, growth, density, distribution, and vital statistics, which are used to study human populations. (Turnock, BJ. *Public Health: What It Is and How It Works*. Jones and Bartlett. 2009)

Determinants of Health

Determinants of health are factors that influence the health status of an individual and/or a population are called determinants of health. They may be categorized in several groups such as the genetic or biological causes and predisposition of disease, mortality, or disability; the behavioral aspects of disease and illness (choices, lifestyle, etc.); the cultural, political, economic, and social aspects of disease and illness; the environmental aspects of disease and illness; the policy aspects of disease and illness; and the individual and response to all of the above. (Institute of Medicine. *The Future of the Public's Health in the 21st Century.* National Academies Press. Washington, DC. 2003).

Evidence-based Practice

Evidenced-based practice involves making decisions on the basis of the best available scientific evidence, using data and information systems systematically, applying program-planning frameworks, engaging the community

in decision making, conducting sound evaluation, and disseminating what is learned. (Brownson, Fielding and Maylahn. *Evidence-based Public Health: A Fundamental Concept for Public Health Practice.* Annual Review of Public Health).

Goals

Goals are general statements expressing a program's aspirations or intended effect on one or more health problems, often stated without time limits. (*Turnock, B.J. Public Health: What It Is and How It Works. 4th ed. Sudbury, MA: Jones and Bartlett; 2009.)*

Health Disparities

Health disparities are differences in population health status (incidence, prevalence, mortality, and burden of adverse health conditions) that can result from environmental, social and/or economic conditions, as well as public policy. These differences exist among specific population groups in the United States and are often preventable. *(*Adapted from: National Association of County and City Health Officials (US). *Operational Definition of a Functional Local Health Department [online].* 2005 [cited 2012 Nov 8]. Available from URL http://www.naccho.org/topics/infrastructure/accreditation/OpDef.cfm. National Cancer Institute (US). Health Disparities *Defined [online]. 2010 [cited 2012 Nov 8]* http://crchd.cancer.gov/disparities/defined.html*)*

Health in all Policies

Health in all policies is an approach that rests on the assumption that health is fundamental to every sector of the economy and that every policy—large and small—should take into consideration its effect on health. (Institute of Medicine (US). *For the Public's Health: Revitalizing Law and Policy to Meet New Challenges.* Washington, DC: National Academies Press; 2012.)

Health Inequity

Health inequity refers to differences in population health status and mortality rates that are systemic, patterned, unfair, unjust, and actionable, as opposed to random or caused by those who become ill. (Margaret M. Whitehead, "The Concepts and Principles of Equity and Health," 22(3) *International Journal of Health Services* (1992): 429-445.)

Healthy People 2020

Healthy People 2020 is a document that provides science-based, 10-year national objectives for improving the health of all Americans. For three decades, Healthy People has established benchmarks and monitored progress over time in order encourage collaborations across sectors; guide individuals toward making informed health decisions and measure the impact of prevention activities. (www.healthypeople.gov/2020)

Intervention

Intervention is a generic term used in public health to describe a program or policy designed to have an impact on a health problem. For example, a mandatory seat belt law is an intervention designed to reduce the incidence of automobile-related fatalities. Five categories of health interventions are: (1) health promotion, (2) specific protection, (3) early case finding and prompt treatment, (4) disability limitation, and (5) rehabilitation. (Turnock. *Public Health: What It Is and How It Works (4th Ed).* Jones and Bartlett. MA. 2009

Mission Statement

A mission statement is a written declaration of an organization's core purpose and focus that normally remains unchanged over time. Properly crafted mission statements (1) serve as filters to separate what is important from what is not, (2) clearly state which markets will be served and how, and (3) communicate a sense of intended direction to the entire organization. (BusinessDirectory.Com*. "Mission Statement" [online].* No date [cited 2012 Nov 8]. http://www.businessdictionary.com/definition/mission-statement.html)

Objectives

Objectives are targets for achievement through interventions. Objectives are time limited and measurable in all cases. Various levels of objectives for an intervention include outcome, impact, and process objectives. (*Turnock, B.J. Public Health: What It Is and How It Works. 4th ed. Sudbury, MA: Jones and Bartlett; 2009.)*

Partnership

A partnership is a relationship among individuals and groups that is characterized by mutual cooperation and responsibilities. (Scutchfield, FD, and CW Keck. *Principles of Public Health Practice.* Delmare CENGAGE Learning. 2009)

Population Health

Population health is a cohesive, integrated and comprehensive approach to health considering the distribution of health outcomes within a population, the health determinants that influence the distribution of care, and the policies and interventions that impact and are impacted by the determinants. (Nash, Reifsnyder, Fabius, and Pracilio. *Population Health: Creating a Culture of Wellness.* Jones and Bartlett. MA, 2011)

Practice-based Evidence

For Tribal health departments, for the purposes of PHAB accreditation, practice-based evidence is the incorporation of evidence grounded in cultural values, beliefs, and traditional practices. (Public Health Accreditation Board. *Standards and Measures Version 1.5.* Alexandria, VA, May 2011)

Promising Practice

Promising practice is defined as a practice with at least preliminary evidence of effectiveness in small-scale interventions or for which there is potential for generating data that will be useful for making decisions about taking the intervention to scale and generalizing the results to diverse populations and settings. (U.S. Department of Health and Human Services, Administration for Children and Families Program Announcement. *Federal Register,* Vol. 68, No. 131, July 2003.)

Public Health System

Public health systems are commonly defined as "all public, private, and voluntary entities that contribute to the delivery of essential public health services within a jurisdiction." This concept ensures that all entities' contributions to the health and well-being of the community or state are recognized in assessing the provision of public health services.

The public health system includes:

- Public health agencies at state and local levels
- Healthcare providers
- Public safety agencies
- Human service and charity organizations
- Education and youth development organizations
- Recreation and arts-related organizations
- Economic and philanthropic organizations
- Environmental agencies and organizations

State Health Department

For the purposes of PHAB accreditation, a state health department is defined as the governing entity with primary statutory authority to promote and protect the public's health and prevent disease in humans. This authority is defined by state constitution, statutes or regulations, or established by Executive Order. State health departments may be part of an umbrella organization, super public health agency, or super agency that oversees public health functions as well as other government functions. (Public Health Accreditation Board. *Guide to National Public Health Department Accreditation Version 1.0.* Alexandria, VA, May 2011).

Values

Values describe how work is done and what beliefs are held in common as a basis for that work. They are fundamental principles that organizations stand for. (Swayne, Duncan, and Ginter. *Strategic Management of Health Care Organizations.* Jossey Bass. New Jersey. 2008)

Vision

Vision is a compelling and inspiring image of a desired and possible future that a community seeks to achieve. A vision statement expresses goals that are worth striving for and appeals to ideals and values that are shared among stakeholders (Bezold, C. *On Futures Thinking for Health and Health Care: Trends, Scenarios, Visions, and Strategies.* Institute for Alternative Futures and the National Civic League. Alexandria, VA. 1995)

Well-Being

Well-being is the state of being comfortable, healthy, and happy.

Wellness

Wellness is the quality or state of being in good health especially as an actively sought goal. (www.merriam-webster.com/dictionary/wellness)

Mississippi State Health Assessment Health Status Report

January 2015

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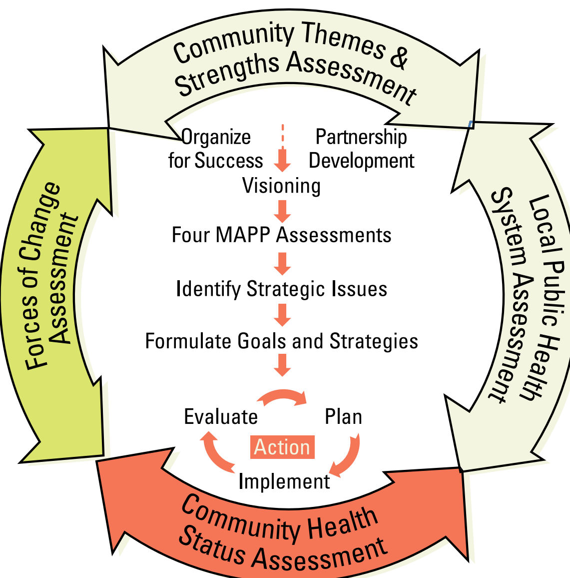
Introduction

In 2014, the Mississippi State Department of Health embarked on a journey to develop a State Health Assessment (SHA) by adapting the Mobilizing for Action through Planning and Partnerships (MAPP) process. MAPP is a community-driven[3] strategic planning framework that assists communities in developing and implementing efforts around the prioritization of public health issues and the identification of resources to address them as defined by the 10 Essential Public Health Services. The MAPP process includes four assessment tools, as shown in the graphic below.

Figure 1. MAPP Model



Source: MAPP Model, Achieving Healthier Communities MAPP User's Handbook

Within the MAPP process, there are four assessment tools. One of these assessment tools is the Health Status Assessment (HSA). The HSA is designed to assess the health of individuals in the state as well as factors that can impact the health of communities. This is done by compiling data around a few specific indicators of health. While many indicators are used in other states and communities, the state is free to select any indicators that reveal pertinent information about its residents' health. The results of the HSA will be viewed in the context of the other three assessments in the MAPP process, which include the Community Themes and Strengths Assessment (CTSA), the State Public Health System Assessment (SPHSA), and the Forces of Change Assessment (FOCA). Strategic analysis of these assessment results will inform the identification of prevailing issues, which will be prioritized. Goals and action plans will be developed for each of these priority issues. These action plans will be implemented and aligned to improve the state public health system and ultimately the health and well-being of Mississippi residents.

3 For the purposes of the MAPP process, the Mississippi State Department of Health defines community broadly as the residents of the state of Mississippi and the state's partners through the state's public health system, including state and local government agencies, businesses, non-profits, academia, and other entities that influence the health and well-being of Mississippians.

Assessment Methodology

The Health Status Assessment uses existing data from a variety of sources to answer the questions, "How healthy are our residents?" and "What does the health status of our community look like?" This is done by taking a list of key health indicators, examining trendsb and making comparisons between population groups.

To decide which indicators best reflect the health of Mississippians, department heads at the Mississippi State Department of Health (MSDH) compiled a list of the measures that their programs use to evaluate health status. Additional indicators were added to this list after reviewing Health Status Assessments from other jurisdictions. MSDH staff then condensed the list of indicators by eliminating redundancies and examining the availability, reliability, and repeatability of data over time. The State Health Officer then approved the final list of indicators included in this report. The text and information included in this report represents the collaborative effort of program staff at MSDH as well as input from community partner organizations.

Data for this report was obtained from the MSDH Office of Vital Statistics, the Behavioral Risk Factor Surveillance System (BRFSS), the Youth Risk Behavior Surveillance System (YRBSS), the United States Census Bureau, the Centers for Disease Control and Prevention, and other sources. Where appropriate, information is included regarding disparities that exist on gender, racial, or geographic lines. Furthermore, comparisons are made between United States and Mississippi data to show how the health of Mississippians compares to the national average. In some cases, data regarding certain geographies or racial groups may be excluded due to the fact that a low number of individuals in a sample can lead to unreliable conclusions.

Mississippi's small population makes it difficult to examine trends in data within a very limited geographic region or a racial group that is not very prevalent in the state. For this reason, when racial groups are discussed, data on the white and black populations is always reported, but data on other racial groups is combined into an "other" racial category or may be absent altogether.

One other consideration to note is the use of self-reported data. Some of the data sources referenced throughout this document are the result of surveys that are administered to a random sample of Mississippians each year. These include BRFSS and the YRBSS. Self-reported data, while useful, may not always be an accurate indicator of the presence of diseases. For example, self-reported data about the prevalence of diabetes underestimates the actual prevalence of the disease because many diabetes cases are undiagnosed. Keep this in mind when reviewing sections of this report that reference self-reported data.

Executive Summary

Geographic, Demographic, and Socioeconomic Profile

Mississippi is located in the Southeastern United States. It is bordered by Alabama to the east, Tennessee to the north, Louisiana and the Gulf of Mexico to the south, and by Arkansas and Louisiana across the Mississippi River to the west. These boundaries outline an area approximately 48,000 square miles with a north-south length of 350 miles and an east-west width of 180 miles. Mississippi is the 32nd largest state in the United States. Appendix 1 includes a map of Mississippi's counties grouped by public health district. These districts are referenced throughout the text of this document.

The residents of Mississippi account for just less than 1% of the United States population. As of 2013, Mississippi has an estimated population of 2,991,207. Mississippi's population is growing slowly compared to the rate of growth in the United States overall. More than half (43) of Mississippi's 82 counties lost population between 2000 and 2010, and the trend continues based on 2013 population estimates. Nearly 14% of the residents are age 62 or older. Approximately 25% of the residents are under 18 years old. "White, non-Hispanic" is the predominant racial/ethnic group comprising approximately 60% of the population, with "Black/African American, non-Hispanic" as the second largest group accounting for over 37% of the population. Mississippi has the highest percentage of residents identifying as "Black/African American" in any U.S. state. Nearly 3% of the population identifies as Hispanic or Latino.

In August 2014, Mississippi had an unemployment rate of 7.4% compared to the national rate of 6.3%. Nearly 22.7% of the population in the state is at or below the poverty level, compared to United States' 15.4%. The state's per capita income was $20,618. The median household income for the state was $39,031. The percentage of residents aged 25 and older who had obtained a high school diploma or GED was approximately 82%. The socioeconomic disadvantages facing many Mississippi residents are consistently linked to poor health outcomes in communities.

Access to Health Care

- The percentage of residents lacking health insurance is 17.5% for Mississippi.
- 27.7% of adult black residents reported that they were unable to see a doctor in past 12 months because of cost compared to 18.1% of adult white residents.

Mortality and Leading Causes of Death

- In terms of population health, the top ten causes of death were cardiovascular (heart) disease, cancer, chronic obstructive pulmonary disease (COPD), accidents, cerebrovascular disease (stroke), diabetes, Alzheimer's disease, nephritis (kidney disease), septicemia, and pneumonia/influenza.
- In 2012 heart disease was the leading cause of death in Mississippi, accounting for 24.6% of all deaths, followed by cancer with 21.9%. These two causes account for nearly 47% of all deaths during 2012.
- Lung cancer caused slightly over 29% of deaths related to cancer during 2012.
- In 2012 there were 1,596 deaths due to unintentional injuries, a rate of 62.5 per 100,000 for white residents compared to 40.0 per 100,000 for black/other residents. The overall rate for unintentional injuries was 53.5 per 100,000.

Infectious Diseases

- Black residents comprise only 38% of the state's total population, but account for more than 75% of all new HIV cases and had an incidence rate in 2012 nearly seven times that of white residents.
- Adolescents and young adults aged 15-24 years make up only 15% of Mississippi's population, yet represented 76% of all cases of chlamydia reported in 2012.
- In 2012, Mississippi ranked worst among the 50 states in gonorrheal infections (230.8 per 100,000 persons.

Chronic Disease Risk Factors

- In 2012, Mississippi's obesity rate (body mass index of 30 or higher) was 34.6%.
- In 2013, the percentage of the population who are current smokers (aged 18 and older) was 24.0%. Mississippi had the 5th highest smoking prevalence for adults among the 50 states and Washington, D.C. The national average for 2013 was 19%. Most smokers in Mississippi have annual household incomes less than $24,999 and have not completed high school.
- Obesity and smoking are associated with lung cancer, cardiovascular diseases, respiratory diseases, and diabetes. The disease burden from these deadly conditions in Mississippi could be reduced or alleviated by behavioral changes.
- Mississippians with less education and in lower income levels reported the highest percentage of physical inactivity. In 2013, 38.1% indicated no physical activity during the past 30 days.

Maternal & Child Health Indicators

- In 2012, approximately 85% of Mississippi births were to mothers who had prenatal care beginning in the 1st trimester.
- The 2012 crude birth rate was 12.9 per 1,000 population for Mississippi.
- In 2012, 11.6% of births in Mississippi were of low birth weight.
- The teenage birth rate was 46 per 1,000 females (15-19 year olds) for Mississippi in 2012.
- In 2012, the infant mortality rate was lower in white individuals (5.4 per 1,000 live births) than in black/other individuals (13.1 per 1,000 live births) for Mississippi. The overall rate for the state was 8.8 infant deaths per 1,000 live births. This is significantly higher than the U.S rate of 5.98 deaths per 1,000 live births in the same year.

Demographic and Socioeconomic Factors

While genetics and personal lifestyle are major influencers of health, many differences in health status occur along demographic and social lines, indicating that social determinants play a large role in a person or population's health. The social determinants of health are the conditions in which people are born, grow, live, work, and age. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels.[4] Social determinants of health contribute to health inequities, explaining why people living in poverty tend to die at younger ages and get sick more often than those living in more privileged conditions.

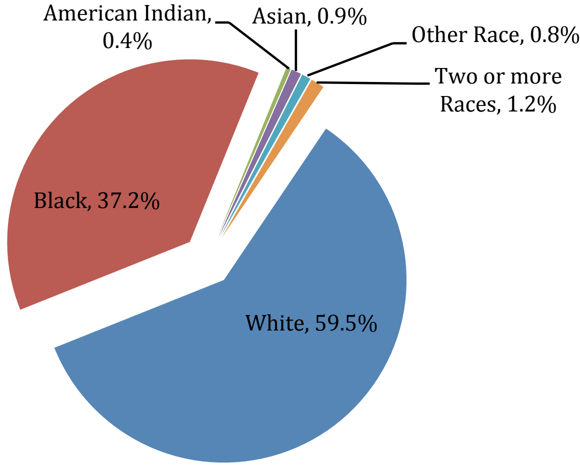
The World Health Organization (WHO) Commission on Social Determinants of Health concluded in 2008 that the social conditions in which people are born, live, and work are the most important determinant of one's health status. The neighborhoods in which people live may be more important to their health than their genetics. Low-income neighborhoods may offer inadequate healthcare services, fewer employment opportunities, lower quality education, and higher crime rates when compared to more mixed-income or high-income communities, all factors which may contribute to continued poverty and the development of poor health outcomes.

Because of the importance of demographic and socioeconomic factors in shaping health outcomes, a summary of these factors for the Mississippi population is included. Additionally, where relevant, information is provided throughout this document regarding the differences that occur between population groups with regard to health outcomes.

Race and Ethnicity

Mississippi's racial distribution is indicated by Figure 2 below. The population of the state is largely made up of people identifying as white or black. Though white residents are a majority statewide, in many counties, black residents are the majority racial group. The black population is growing at a faster rate than the white population, meaning that the percentage of the total population consisting of black residents is increasing while the percentage of the population consisting of white residents is decreasing.

Figure 2. Mississippi Racial Distribution



Source: American Community Survey 5-year Estimates, 2009-2013

4 http://www.who.int/social_determinants/sdh_definition/en/

Mississippi's Hispanic population is growing as indicated by Table 1 below. In 2013, an estimated 2.69% of the population identified as Hispanic or Latino. It is important to note that ethnicity and race are not exclusive of one another. People who identify as Hispanic or Latino can be of any race.

Table 1. Mississippi Hispanic/Latino Distribution

Hispanic Or Latino And Race	1990		2000		2010		2013	
	#	%	#	%	#	%	#	%
Total population	2,573,216	100.0	2,844,658	100.0	2,967,297	100.0	2,991,207	100.0
Hispanic or Latino (of any race)	15,931	0.62	39,569	1.39	81,481	2.75	80,455	2.69
Not Hispanic or Latino	2,557,285	99.4	2,805,089	98.61	2,885,816	97.25	2,910,752	97.31

Source: U.S. Census FactFinder

As this group grows, cultural and linguistic factors must be accounted for in the provision of health services. Table 2 shows the linguistic distribution of Mississippi's population. The second most commonly spoken language in the state is Spanish.

Table 2. Language Most Commonly Spoken at Home - Mississippi

Subject	Estimate*	Speak English "very well"	Speak English less than "very well"
Population 5 years and over	2,771,287	98.4%	1.6%
Speak only English	96.1%	(X)	(X)
Speak a language other than English	3.9%	59.9%	40.1%
Spanish or Spanish Creole	2.4%	55.6%	44.4%
Other Indo-European languages	0.6%	76.7%	23.3%
Asian and Pacific Island languages	0.6%	54.1%	45.9%
Other languages	0.3%	71.9%	28.1%

Source: American Community Survey 5 Year Estimates, 2009-2013

Population Growth and Migration

As of 2013, Mississippi has an estimated population of 2,991,207. Mississippi's population is growing slowly compared to the rate of growth in the United States as a whole (Table 3).[5]

Table 3. Population of the United States and Mississippi and Percentage Change Over Time

	1970	1980	1990	2000	2010	2013 Est.
U.S. Population	203,211,925	226,548,632	248,709,873	281,421,906	308,745,538	316,128,839
Growth from Previous Census	13.3%	11.5%	9.8%	13.2%	9.7%	2.4%
Mississippi Population	2,226,138	2,524,011	2,577,256	2,844,658	2,967,297	2,991,207
Growth from Previous Census	2.2%	13.4%	2.1%	10.4%	4.3%	0.8%
% of U.S. population in Mississippi‡	1.10%	1.11%	1.04%	1.01%	0.96%	0.95%

‡ Significant Chi Square for linear trend (1970-2010). $X^2 = 34.04$, 4 df, $p \leq 0.001$

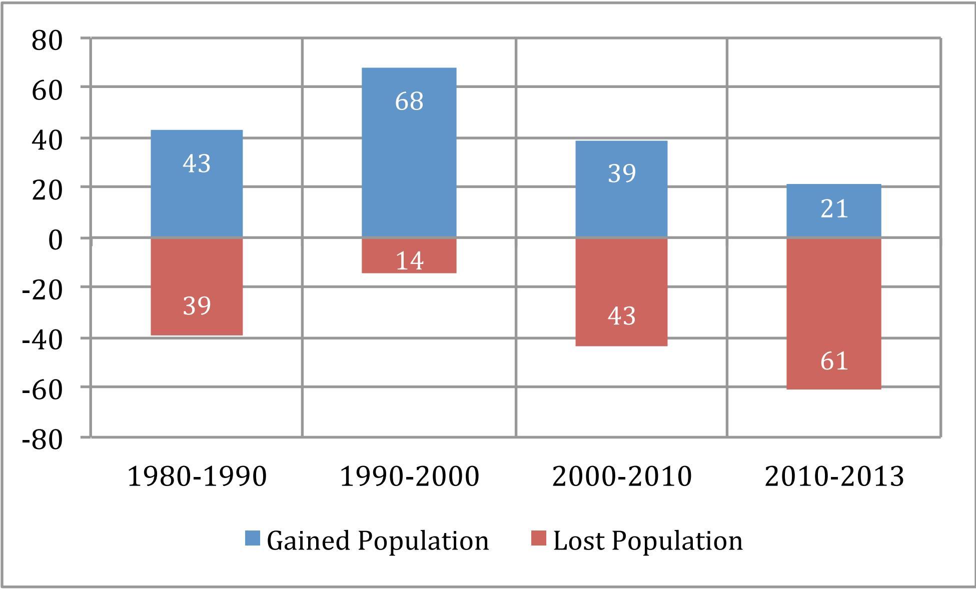
Sources: 1970 to 2010 from U.S. Census documents, 2013 from American Community Survey.

Based on gains between the 2000 and 2010 Census, DeSoto County alone accounted for 44% of the growth in the state population. Six counties (DeSoto, Harrison, Lafayette, Lamar, Madison, and Rankin) accounted for a gain of 33,852 residents between the 2010 U.S. Census and July 1, 2013, population estimates. With the exception of Lafayette County, these counties are all in metropolitan areas. Overall only 19 counties are estimated to have gained population and 61 lost between 2010 and 2013. While several counties have experienced significant population gains, many counties have static or declining populations. More than half (43) of Mississippi's 82 counties lost population between 2000 and 2010 and the trend continues based on 2013 population estimates (Figure 3 and Table 4).[6]

5 The rate of population growth over the past few decades is such the other states outpaced Mississippi resulting in the loss of a member of the U.S. House of Representatives in 2000.

6 Many of the current trends are the continuation of long term patterns beginning in the 1930's with the mechanization of agriculture and radical shifts in the need for labor.

Figure 3. Number of Counties That Gained or Lost Population Over Time



Sources: 1970 to 2010 from U.S. Census documents, 2013 from American Community Survey.

Table 4. Components of Change in the Mississippi Population Between 2000 and 2010

	Total	White	Black	Other
2000 Population	2,844,658	1,746,099	1,033,809	64,750
2010 Population	2,967,297	1,754,684	1,098,385	114,228
2000-2010 Difference	122,639	8,585	64,576	49,478
Natural Growth†	151,610	44,367	101,236	6,007
Net Migration	-28,971	-35,782	-36,660	43,471
Number of Counties with:				
Population Growth/Loss	39/43	32/50	43/39	73/9
Natural Growth/Loss†	80/2	47/35	81/1	78/4
Net Migration Growth/Loss	27/55	26/56	21/61	72/10

† Number of births minus the number of deaths during time period of interest.

Source: 2000 and 2010 U.S. Census and Components of Change

Demonstrating the rural to urban shift that has occurred over time, historical USDA Census of Agriculture data shows that in 1959 there were about 138,000 Mississippi farms, averaging 135 acres, while the most current 2012 agricultural census data shows 38,000 farms remaining that average 287 acres. The total number of farm acreage in Mississippi fell from approximately 19 million to 11 million acres from 1959 to 2012.[7]

There are numerous classifications in use by agencies regarding the urban or metropolitan and rural mix of areas. One of the more commonly used classifications was developed by the U.S. Office of Management and Budget (OMB) and is a simple two tier classification of metropolitan (metro) and nonmetropolitan (nonmetro). In 2010,

7 In addition to the trend of fewer farms with larger acreage, many acres have been lost to urban/suburban sprawl or allowed to remain idle or fallow and thus not considered farm under the Census of Agriculture definition.

17 of the 82 Mississippi counties were considered metro, and those 17 counties are grouped in four areas in the state. The four areas considered metro are made up of counties surrounding the Memphis area (Districts I and II), Jackson (District V), Hattiesburg (District VIII) and the Gulf Coast (District IX). Table 5 below lists Mississippi's 17 metro counties in 2010 by metro area.

Table 5. Mississippi Metropolitan Counties, 2010

Metropolitan Area	County	
Memphis	Benton	Tate
	DeSoto	Tunica
Jackson	Copiah	Rankin
	Hinds	Simpson
	Madison	Yazoo
Hattiesburg	Forrest	Perry
	Lamar	
Gulfport-Biloxi-Pascagoula	Hancock	Jackson
	Harrison	

As seen nationally, nonmetro areas are the ones typically experiencing population loss (Table 6).

Table 6. Metro and Nonmetro Components of Population Change

Area	2000 Population	2010 Population	Diff	% Diff	Births	Deaths	Natural Growth	Net Migration	% Diff
State	2,844,658	2,967,297	122,639	4.3%	435,534	283,924	151,610	-28,971	-1.0%
Metro (17 counties)	1,194,552	1,331,025	136,473	11.4%	190,151	108,760	81,391	55,082	4.6%
Nonmetro	1,650,106	1,636,272	-13,834	-0.8%	245,383	175,164	70,219	-84,053	-5.1%
% Metro	42.0%	44.9%			43.7%	38.3%	53.7%		
% Nonmetro	58.0%	55.1%			56.3%	61.7%	46.3%		

Source: 2000 and 2010 U.S. Census and Components of Change

Fourteen of the 17 metro counties experienced population growth between 2000 and 2010.[8] The nonmetro counties experienced loss overall with 40 of the 65 losing population.[9]

The continued population loss and low population density of many rural counties in Mississippi raises challenges for service provision in those counties.

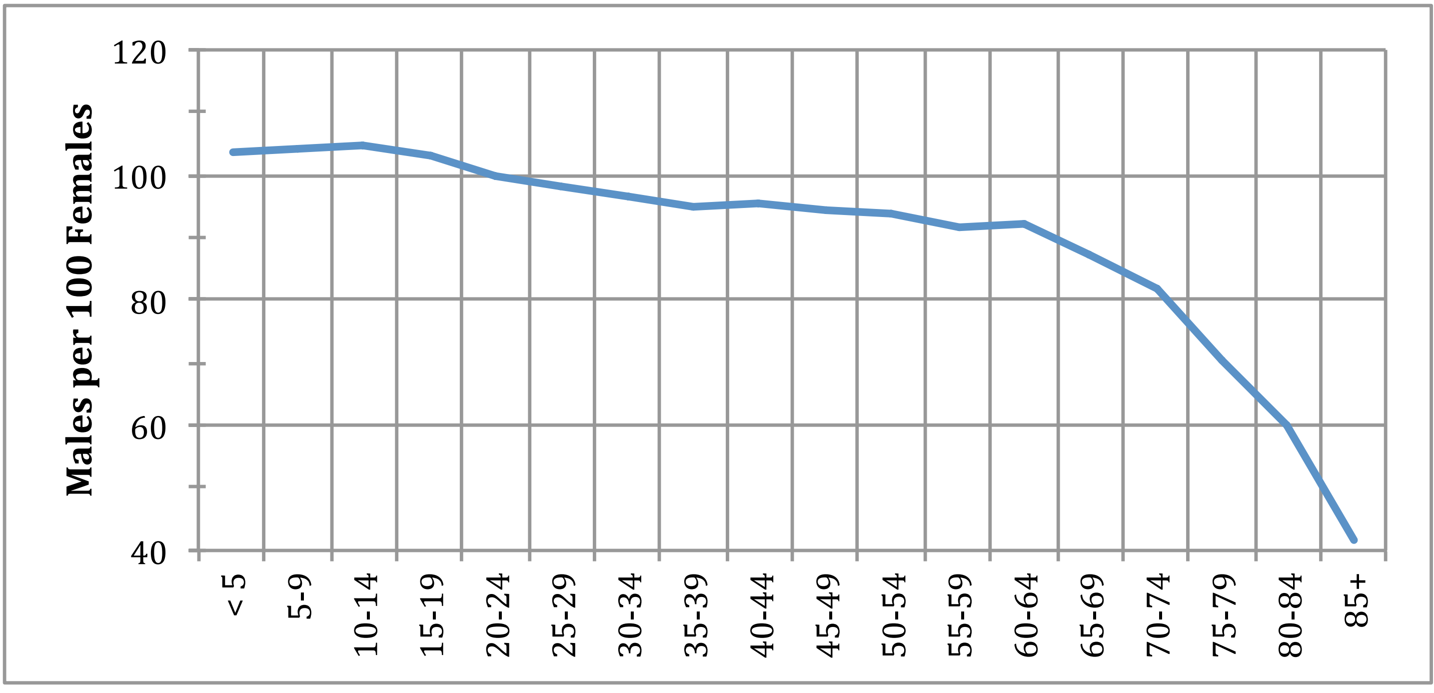
8 Of the three metro counties that lost population, one of those was Harrison County that was heavily impacted by Hurricane Katrina in 2005. However the county has rebounded and is now estimated to have an average annual population increase of about 3,000 per year since 2010.

9 One other measure of mobility is given by the American Community Survey and measures the percentage of the population 1 year of age and above that lived in the same house the previous year. As of 2012, 85.8% of Mississippians reported living in the same place over the previous year. Of those that had moved (13.9%), over half reported a local move within the same county. These rates are very comparable to the overall U.S. population.

Gender

Mississippi's gender ratio is very similar to the U.S. Overall, 51.4% of Mississippi's population is female and 48.6% is male.[10]

Figure 4. Gender Ratio by Age, Mississippi 2010



Source: 2010 U.S. Census

10 From birth through the early 20's, males outnumber females as indicated by the males to 100 females ratio being greater than 100 (Figure 4). The population makeup changes over the course of life, and females begin to outnumber males by age 25. Due to differential and higher mortality in males, the proportion of males falls steadily through the remaining age groups, particularly for those 65 years of age and older. While small differences occur, the same pattern is seen across race/ethnicity groups.

Age

Mississippi's population is aging, similar to the rest of country. The median age for the Mississippi population was 36.4 in 2010 compared to 33.8 in 2000, 31.1 in 1990, and 27.7 in 1980. While the median age is higher for white residents than black residents in Mississippi, both population groups experienced an increase of roughly ten years between 1980 and 2013. As seen nationally, rural Mississippi counties with little or no natural growth (births minus deaths) are aging at a faster rate. The lack of natural growth coupled with outmigration in many of these counties leads to accelerated population aging. In many of the smaller rural counties the difference in the median age between the white and black residents is at or nearing generational differences.

Figure 5. Changes in Median Age Over Time, Mississippi 1980-2013

Sources: 1980-2010 U.S. Census and 2013 American Community Survey

There are also fairly unique population characteristics that can have an effect on the reality and perceptions of the health status of the overall population. Overall, minorities comprised 40.9% of the state population in 2010 with people identifying as black accounting for 37% of the population. Nationally the numbers are 26.3% for all minorities combined and 12.6% for people identifying as black. Twenty seven (27) of 82 counties have a minority population larger than the white population.

In terms of shifts in the age structure over time, several observations should be noted that can have an effect on potential services needed within the state. As seen nationally, the number and proportion of those aged 65 years or older have increased and are expected to continue increasing. There was a 2% jump in that age range in the state between 2000 and 2010 Census, rising from 12% to 14%, and resulting in about 37,000 additional older adults in the state. During the same time period there was a decline in the number and percentage for those less than 15 years of age. Those 15 and under comprised 28% of the total population in 2000 compared to 25% in 2010. Part of

the decline is due to lower birth rates coupled with a drop in the percentage of females who are of child-bearing age (15 to 44 years of age). While the number of females in the 15-44 age group increased approximately 55,000 between 2000 and 2010, the proportion of females in this age range as a percentage of all Mississippi females decreased from 43% to 39%.

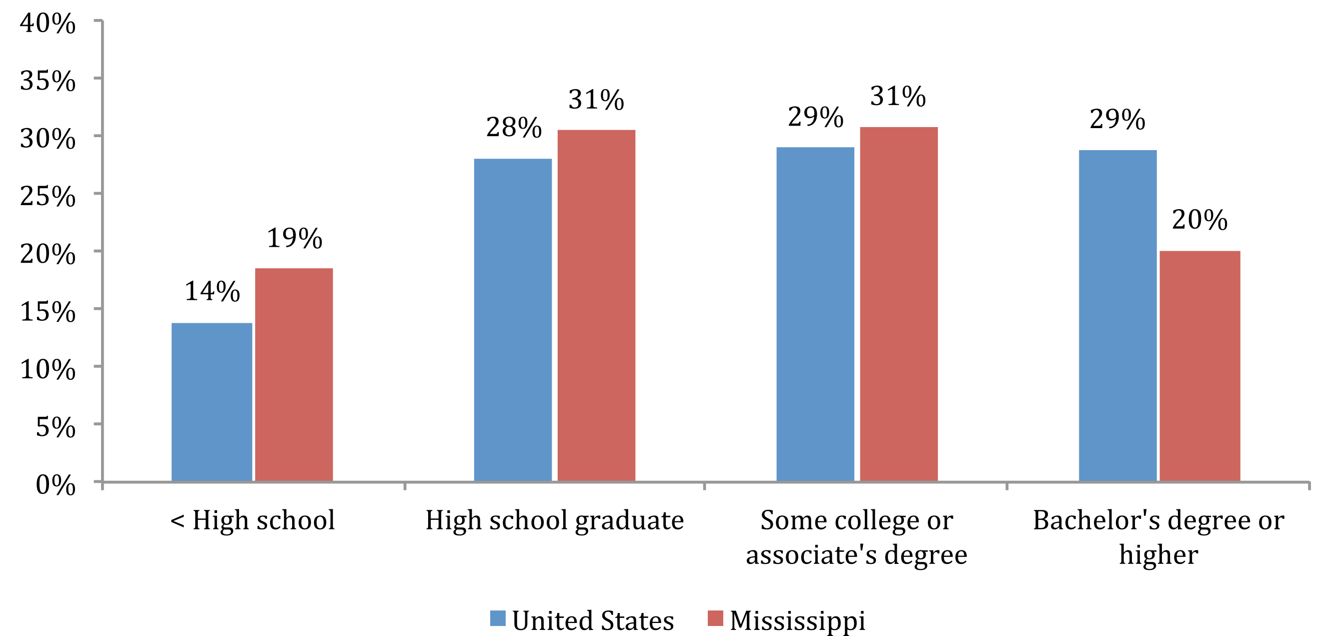
The demographic makeup and distribution of Mississippi is unique in a number of ways. Factors such as race/ethnic diversity and high rates of people living in poverty, coupled with existing health disparities, present challenges for public health.

Educational Attainment

Just as the demographic distribution of a population can influence a number of health related concerns, factors of socioeconomic origin can have a significant effect at the population level as well. This section will present some of the more common factors known to potentially influence the health and health related issues groups. Just as in demographics, the social and economic factors refer to a population group or groups and not individuals.

The Economic Research Service of the USDA refers to educational attainment as an "indicator of the stock of human capital in a community or region."[11] Numerous other social and economic characteristics of an area will be interrelated and tied to the educational status of the area. Over a longer term, education can play a role in demographics, primarily through out migration of more educated young adults seeking opportunity. Mississippi lags the U.S. in several measures related to education. The state is comparable percentage wise for those with high school and some college or an associate's degree, but has a higher percentage that did not finish high school as well as a lower percentage with a bachelor's degree or higher (Figure 6).

Figure 6. Educational Attainment for Population Aged 25 Years and Older, 2008-2012



Source: 2008-2012 five-year American Community Survey

11 Marré, Alexander. "Rural Areas Lag Urban Areas in College Completion" Amber Waves, December 01, 2014, http://www.ers.usda.gov/amber-waves/2014-december/rural-areas-lag-urban-areas-in-college-completion.aspx

What is not well documented or measured is the "brain drain" effect seen for areas where mainly younger adults finishing their education migrate from their home county or state for better employment opportunities. Some areas of the state also have a high rate of high school dropouts. Figure 7 presents a comparison of those individuals who have less than a high school education between the United States, Mississippi, and the metro/nonmetro areas of the state. While the state's metro counties compare favorably overall and by race with the country, the more rural counties have a substantially higher number who failed to complete high school. The overall educational attainment of communities can have an impact on numerous other economic parameters, such as occupation and income, or influence the reverse as measured by unemployment and poverty. Economic development opportunities can be also be limited by the educational level of the potential work force.

Figure 7. Percentage of Population Aged 25 and Older That Did Not Complete High School, 2008-2012

Source: 2008-2012 five-year American Community Survey

Income and Poverty

Based on 2013 inflation adjusted dollars from the American Community Survey, Mississippi households lag the national median income of $53,000 by approximately $13,000. A comparison of the distribution of household income presented in Figure 8.

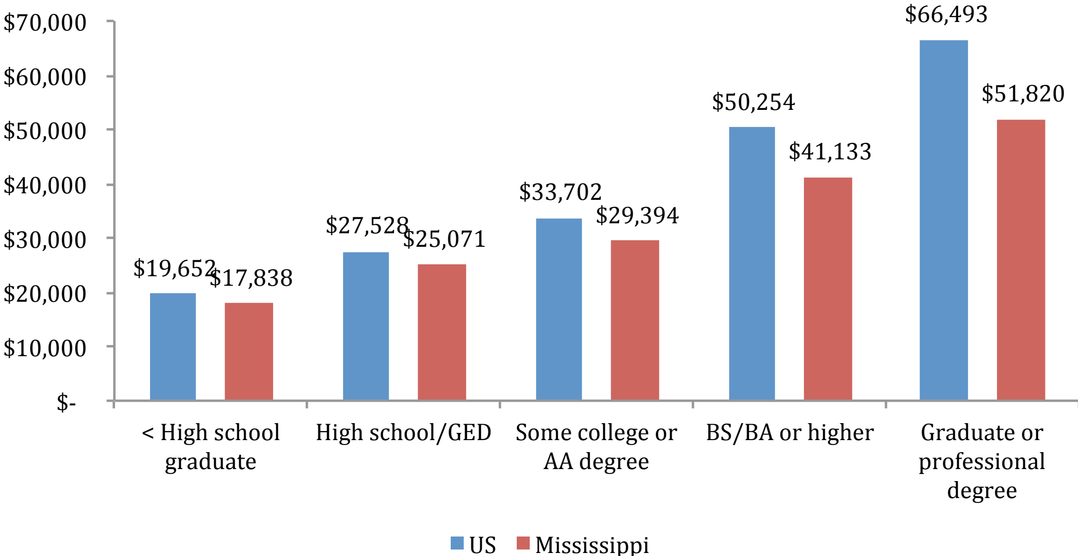
Figure 8. Distribution of Household Income, 2008-2012

	Less than $10,000	$10,000 to $14,999	$15,000 to $24,999	$25,000 to $34,999	$35,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 to $149,999	$150,000 to $199,999	$200,000 or more
US	7%	5%	11%	10%	14%	18%	12%	13%	5%	5%
Mississippi	11%	8%	14%	12%	14%	17%	10%	9%	3%	2%

Source: 2008-2012 five-year American Community Survey

Substantial differences occur when income is examined by the type and educational level of households. There is only slight variation between the U.S. median income and state median income for those with less than a four year college degree as seen in Figure 9. Much larger discrepancies are seen between the state and national levels for those households with college and graduate degrees.

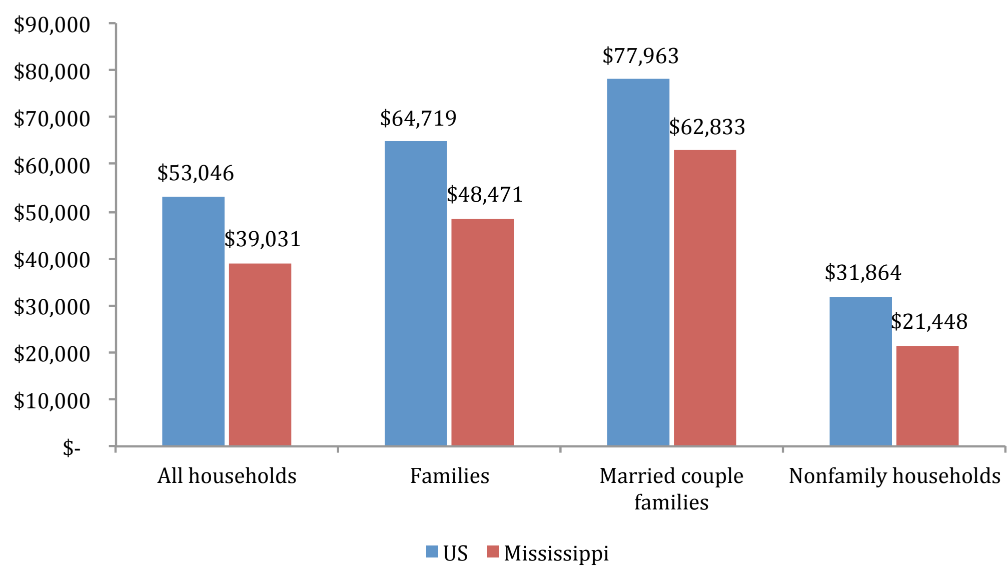
Figure 9. Median Earnings by Education



Source: 2008-2012 5-year American Community Survey

The type of household structure plays a large role in the resulting median income with married-couple families having a two- to three-fold higher income than nonfamily household both at the national and state level. (Figure 10). Nationally 73.5% of families are married couples compared to 66.5% for the state. Part of the differences in income is due to a large number of both spouses working in married-couple households.

Figure 10. Median Income by Type of Household



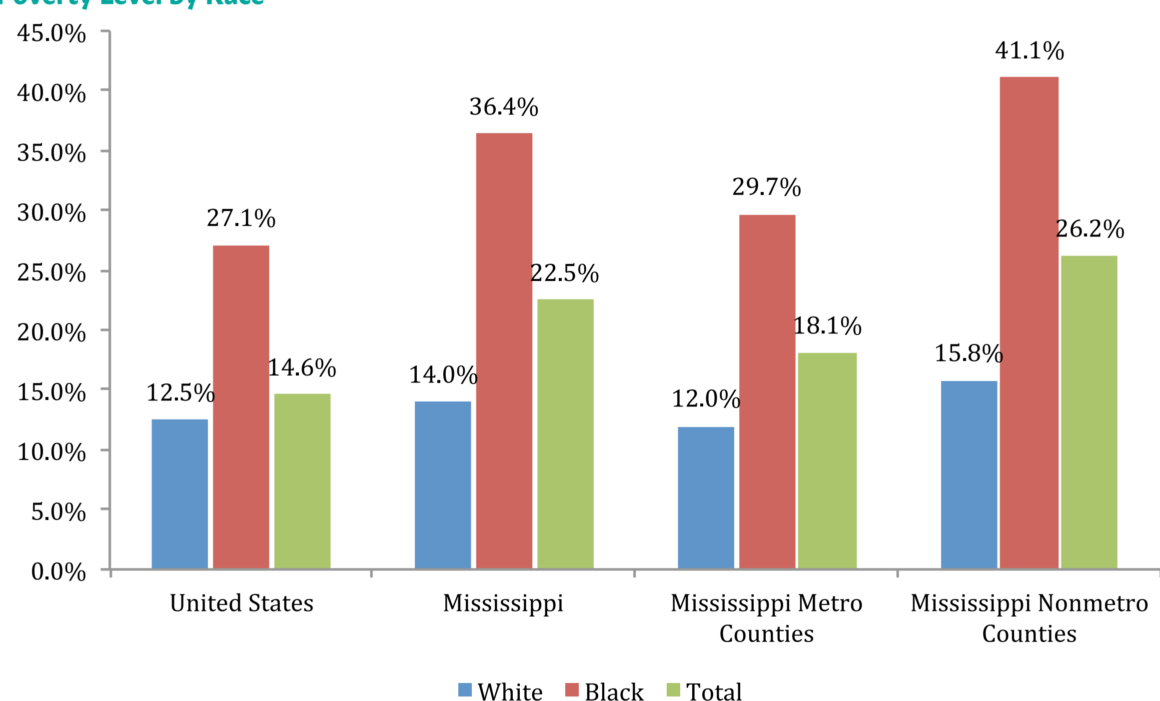
Source: 2008-2012 five-year American Community Survey

As noted, localities vary in their ability to support the financial well-being of the area for a number of reasons. One such delineation is along the metro vs. nonmetro (or rural) lines. For the 17 metro counties the 2013 median earnings for those age 25 and over and employed was 26,000 to 41,000 dollars compared to 19,000 to 33,000 dollars for the 65 rural or nonmetro counties in the state. Similar differences are seen for 2013 median household income with the metro counties ranging from 31,446 to 59,904 dollars and the nonmetro counties running 22,325 to 43,328.

As one might expect the rates for poverty behave in an opposite manner. Again from the 2013 American Community Survey data, the overall poverty rate for the U.S. in 2013 was reported as 14.2% compared to 21.3% for the state. The poverty level in the 48 contiguous states and the District of Columbia for 2013 for one person in a family/household was $11,490 and $4,020 for each additional person. For a family of four, the federal poverty level in 2013 was $23,550.[12]

The percentage of the households receiving Supplemental Nutritional Assistance Program (SNAP) benefits in 2013 was 12.4% for the U.S. and 21.3% for Mississippi. Rates for both poverty and SNAP participation were shown to vary inversely by the educational level in the household and in relation to the metro and nonmetro classifications with rates being highest among those that did not complete high school and/or living in the rural counties. Poverty rates are also influenced by household family structure. The poverty rate for married-couple families in 2013 was 5.6% and 7.3% in the U.S. and Mississippi respectively. The highest rates are reported are for single female head of household with 42% of those households living below the poverty line. If children are in the single female head of household, the rate jumps to over 50% in the state and 40% nationally. Poverty also varies by race as shown in Figure 11 with the impact more pronounced in the rural counties.

Figure 11. Poverty Level by Race



Source: 2008-2012 5-year American Community Survey

Housing

The built environment, particularly one's home, can also affect the well-being and health of its occupants. With the farm to town shift, most of the older substandard rural houses are gone. This can have an effect on the median age of structures as well as replacement due to storm damage. Most Mississippians live in single family dwellings (70%) or mobile homes (15%). Roughly 69% of the residences in the state are owner-occupied versus 65% in the U.S..

12 U.S. Federal Register Notice, January 24, 2013

About 48% of the homes in the state were built prior to 1980 compared to nearly 60% nationally. One of the factors associated with older homes and structures is lead contamination. Buildings constructed before 1980 are more likely to contain lead paint, and surveillance for elevated blood lead levels in children can be partially guided by the age of housing stock.

Over the years more communities have adopted more stringent building codes and enforcement. With new construction or remodeling, fewer substandard buildings remain. As seen nationally, less than 1% of the homes in the state lack complete plumbing or kitchen facilities. Due to programs developed around 911 systems, fewer than 3% of home lack some form of telephone service.

Access to Health Care

Access to comprehensive, quality health care services is important for the achievement of health equity and for increasing the quality of a healthy life for everyone. Obtaining access to health services requires using personal health services to achieve the best health outcomes and involves three distinct steps: 1) gaining entry into the health care system, 2) finding a health care provider where needed services are available, and 3) locating a health care provider with whom the patient can communicate and trust.

Health care access impacts overall physical, social, and mental health status; prevention of disease and disability; detection and treatment of health conditions; quality of life; preventable death; and life expectancy.

Disparities in access to health services affect individuals and society. Limited access to health care impacts people's ability to reach their full potential, negatively affecting their quality of life. Barriers to services include: lack of availability, high cost, and lack of insurance coverage

These barriers to accessing health services lead to unmet health needs, delays in receiving appropriate care, inability to get preventive services, and hospitalizations that could have been prevented.

In 2013, as part of the Behavioral Risk Factor Surveillance System (BRFSS), 21.8% of Mississippians surveyed said they were unable to see a doctor at some point in the prior twelve months because of cost. Black respondents (29.0%) were greater than one and one-half times more likely to have not seen a doctor due to cost than white respondents (16.8%). Also females of both races were much more likely to experience this phenomenon than males: 25.6% to 17.6%.

The survey revealed that one of the biggest barriers to access is income. Not surprisingly, those in the lower income ranges reported the greatest difficulty in gaining access to care. Those making less than $15,000 (41.2%) per year were more than eight times as likely to have not seen a doctor in the previous 12 months due to cost that those reporting and annual income of $75,000 per year (5.0%).

Health Insurance Coverage

Having health insurance improves an individual's access to care and reduces economic vulnerability when medical services are needed. People with private insurance are less likely to die in a defined time period than people without insurance, even when differences in age, gender, race, income, health status, and education are accounted for.[13] Over the period from 2011 to 2013, approximately 17.3% of the Mississippi population was

13 Wilper, A. P., Woolhandler, S., Lasser, K. E., McCormick, D., Bor, D. H., & Himmelstein, D. U. (2009). Health Insurance and Mortality in U.S. Adults. *American Journal of Public Health*, *99*(12), 2289–2295. doi:10.2105/AJPH.2008.157685

uninsured.[14] During the same time period about 14.8% of the total United States population was uninsured. When broken down by race or ethnic group, there are significant differences in the rate of uninsured individuals, as shown in Figure 12 below.

Figure 12. Percentage of Population Uninsured, by Race and Ethnic Group

Percentage Uninsured	White alone	Black alone	American Indian alone	Asian alone	Two or more races	Hispanic or Latino (any race)
Mississippi	15%	20%	36%	27%	13%	38%
United States	13%	17%	27%	15%	14%	29%

Source: U.S. Census: 2011-2013 3-Year American Community Survey

Additionally, there are significant differences between the rates of uninsured individuals based on age. 7.7% of the Mississippi population under the age of 18 was uninsured, while 25% of the population aged 18 to 64 was uninsured. Both rates are much higher than the 0.3% of the Mississippi population aged 65 years or older who are uninsured. This is because some publicly-funded insurance programs are targeted at the young [Children's Health Insurance Program (CHIP)] and the elderly (Medicare).

Adult Dental Visits

Regular dental visits are important in the prevention, early detection, and treatment of oral and craniofacial diseases. Research has shown that infrequent dental visits have been associated with poor oral health among adults. In 2012, an estimated 55.4% of Mississippi adults reported having a dental visit within the past year compared to a median prevalence of 67.2% in the U.S. Among all age groups, with exception of the 18-24 year old age group, the prevalence of having a dental visit within the past year was relatively consistent. Based on the BRFSS survey, non-Hispanic, white females (61.6%) were the group most likely to report having a dental visit within the past year, while non-Hispanic, black males (46.3%) were least likely to report having a dental visit. Generally, people identifying as white were more likely to report seeing a dentist in the past year than people identifying as black. Additionally, people with higher levels of educational attainment were more likely to report having a dental visit over the past year than people with lower levels of educational attainment.

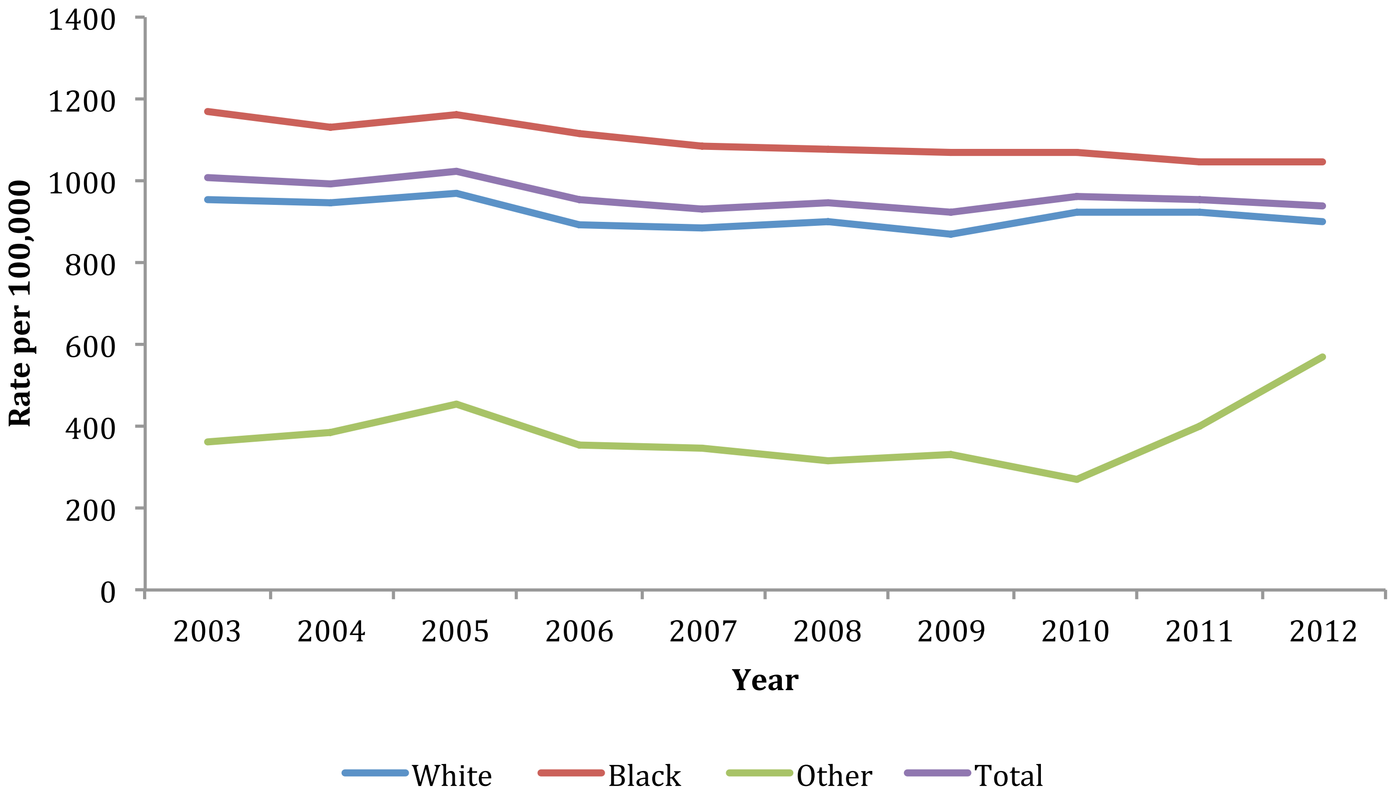
14 U.S. Census Bureau. (2014). *2011-2013 3-Year American Community Survey*. Retrieved from http://www.census.gov/acs/www/

Mortality and Leading Causes of Death

Mortality (All Causes)

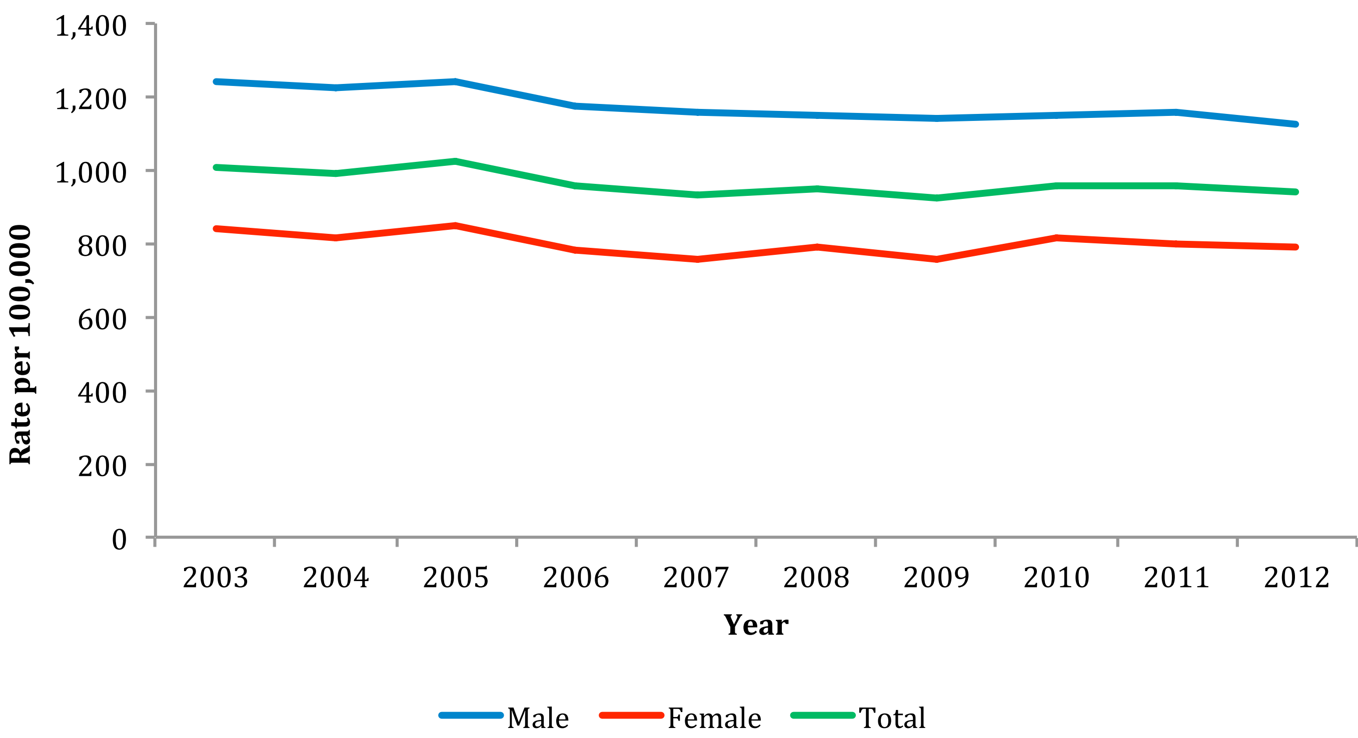
Mortality is a broad indicator of a population's health. While relatively easy to calculate given complete death reporting and population estimates, the overall mortality rate does not provide information about the underlying causes of death in the population. Mortality rates for leading causes of death are presented beginning on page 70.

Figure 13. All-Cause Mortality by Race



Source: Mississippi Statistically Automated Health Resource System (MSTAHRS) 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 14. All-Cause Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

The age-adjusted, all-cause mortality rate among Mississippi's resident population dropped by 6.7% between 2003 and 2012 (from 1,008.7 to 940.7 deaths per 100,000). In 2012, the mortality rate among the black population was 17% higher than among the white population (1,048.6 vs. 897.5). This is slightly less than the national disparity of 18% between the white and black populations. In Mississippi, males are 42% more likely to die in a given year than females. This is reflected in the fact that males, on average, have shorter life expectancies than females.

Because of the disparity between the white and black populations, regional differences in mortality rates tend to be determined by population makeup in those areas. The mortality rate among black residents for 2008-2012 was highest in District III (1,198.4 deaths per 100,000) and lowest in District V (1,104.5). The highest mortality rate for white residents was also in District III (978.8) and the lowest was in District IV (812.0).

The age-adjusted mortality rate for the nation was 732.8 deaths per 100,000 population in 2012. Mississippi's rate of 940.7 was 28% higher than the nation. This means that people in Mississippi are 28% more likely to die in a given year than the average U.S. resident when age, a substantial predictor of mortality, is accounted for. In 2011, Mississippi had the highest age-adjusted mortality rate of all 50 states and the District of Columbia.

Leading Causes of Death

Table 7. Leading Causes of Death by Race

Deaths, Mortality Rates, and Percentage of Total Deaths from Ten Leading Causes, by Cause and Race								
Cause of Death	Number				Rate*			
	Total	White	Black	Other	Total	White	Black	Other
Total of Ten Leading Causes	22,375	15,161	6,993	221	709.1	676.3	796.3	439.7
Heart Diseases	7,248	4,922	2,269	57	230.6	217.9	262	124.5
Malignant Neoplasms (Cancer)	6,468	4,302	2,112	54	199.4	187.2	233	115.1
Emphysema and Other Chronic Lower Respiratory Diseases	1,726	1,435	286	5	54.6	62.4	33.5	n/a
Accidents	1,596	1,118	434	44	53.4	58.7	42.1	56.5
Cerebrovascular Disease (Stroke)	1,509	994	500	15	48.5	44.2	59.5	n/a
Diabetes Mellitus	1,039	499	519	21	32.2	22	58.8	38.5
Alzheimer's Disease	920	737	181	2	30.6	32.7	25.3	n/a
Nephritis, Nephrotic Syndrome and Nephrosis (Kidney Disease)	714	386	319	9	22.9	17.1	37.8	n/a
Septicemia	596	366	221	9	18.9	16.2	25.9	n/a
Pneumonia and Influenza	559	402	152	5	18	17.9	18.4	n/a

** Rates expressed as per 100,000 population*

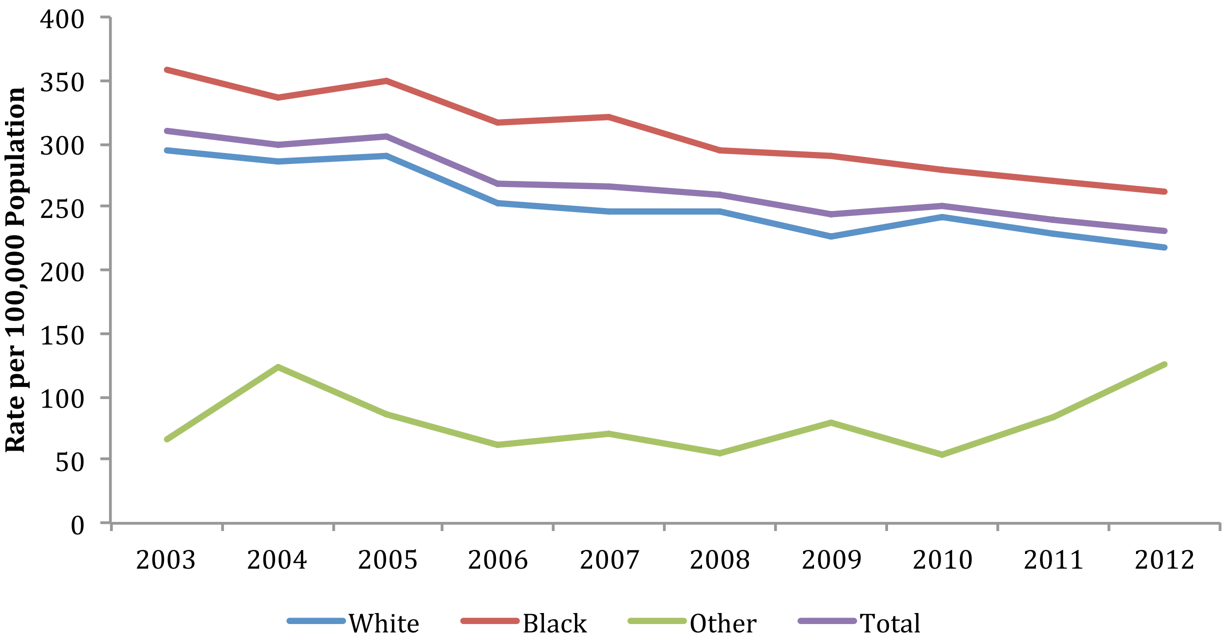
Rates in cells marked n/a were based on less than 20 events and are unstable

Source: MSDH -MSTAHRS

The ten leading causes of death for Mississippians are listed in Table 7 above. One interesting fact to note is that the order of the leading causes varies based on race. While all racial groups have heart disease and cancer as the first and second leading causes of death, certain conditions, like emphysema, are more significant contributors to mortality in specific races than in others. The following pages describe each of the ten leading causes in greater detail.

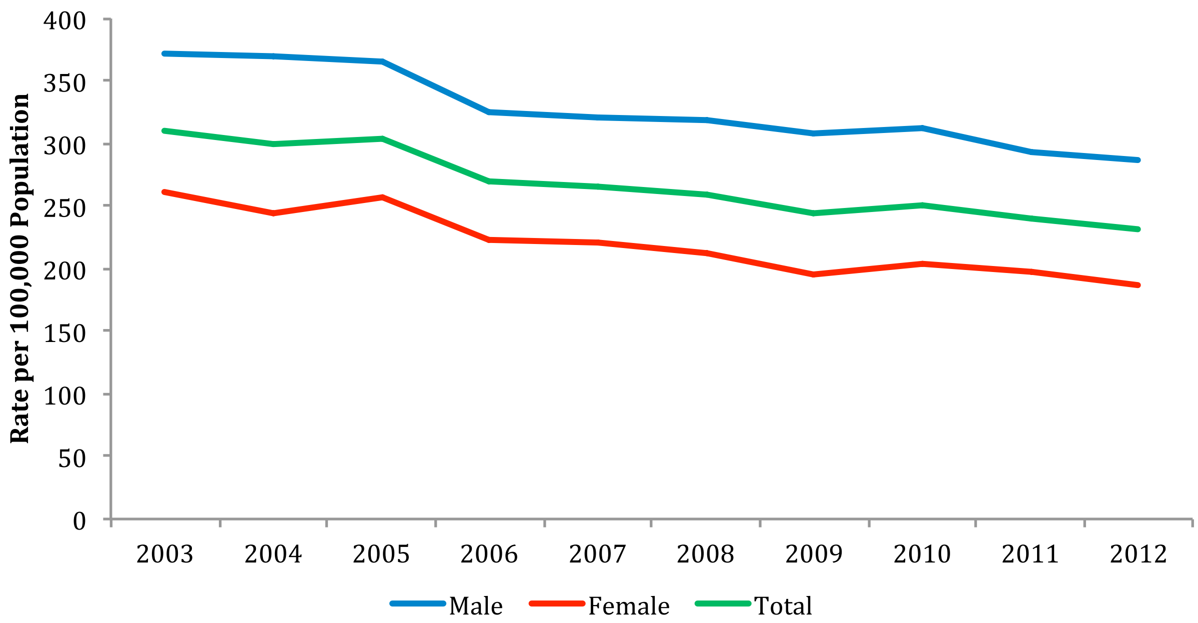
Mortality (Heart Disease)

Figure 15. Heart Disease Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 16. Heart Disease Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

The term, "heart disease" is used to refer to a group of diseases and conditions of the heart and its supporting

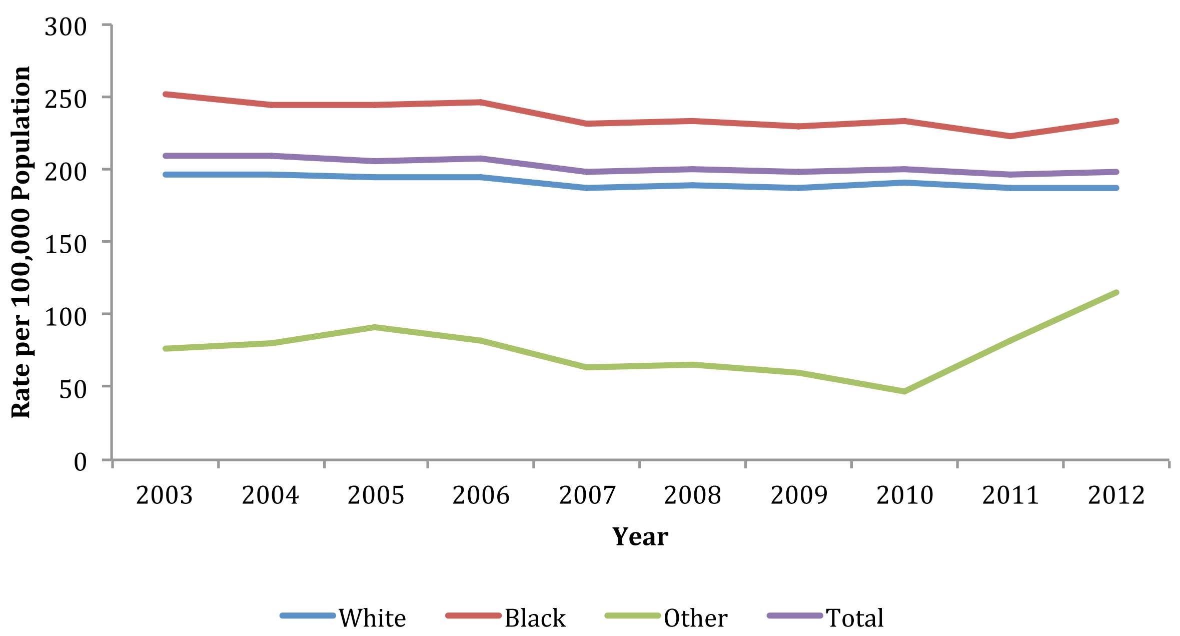
blood vessels. Diseases that are forms of heart disease include, but are not limited to: hypertensive heart disease, pulmonary heart disease, coronary heart disease, and heart failure. The most common and preventable type of heart disease is coronary heart disease[15].

Heart disease mortality has been declining for several years. The 2003 rate in Mississippi was 309.6 deaths per 100,000 persons, decreasing to 230.6 deaths per 100,000 persons in 2012. Trends by race show a decline in heart disease mortality except for those include in the "other" racial category. Over the ten year period of 2003-2012 in Mississippi, black residents had the highest heart disease mortality rate (306.0 deaths per 100,000), while white residents had the second highest (251.7 deaths per 100,000) among the racial groups. The racial group "other" had the lowest heart disease mortality rates. However, the data show an increase in mortality from 65.7 deaths per 100,000 in 2003 to 124.5 deaths per 100,000 in 2012 for this "other" racial group. Gender differences exist as well. Males had a higher cumulative heart disease mortality rate (325.2 deaths per 100,000 persons) compared to females (219.3 deaths per 100,000 persons) from 2003-2012. Also, mortality rates differ by public health regions. Public Health District I had the highest cumulative mortality rate (279.3 deaths per 100,000 persons) compared to Public Health District IV which had the lowest cumulative mortality rate (255.0 deaths per 100,000 persons).

The mortality rate among black residents for 2003-2012 was highest in District III (327.7 deaths per 100,000 persons) and lowest in District II (277.2). The mortality rate among white residents was highest in District I (268.5) and lowest in District IV (232.1).

Mortality (Cancer)

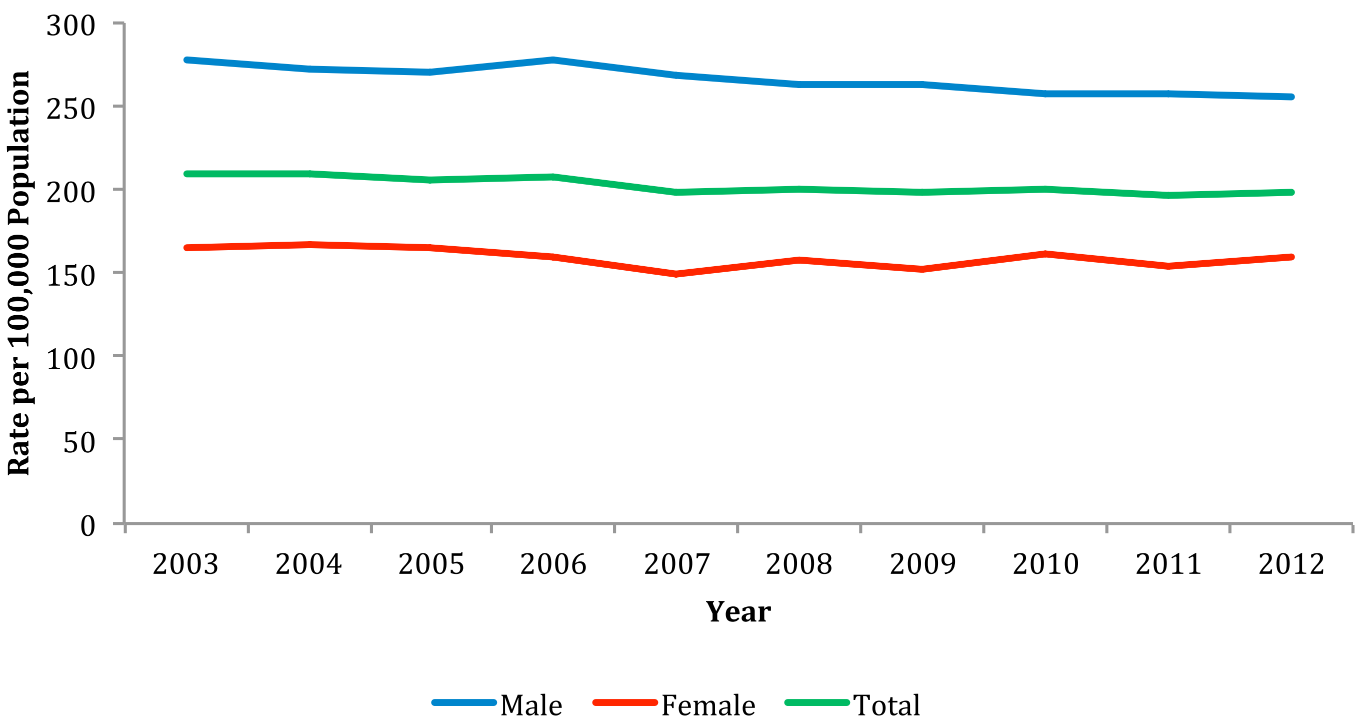
Figure 17. Cancer Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

15 Ridker PM, Libby P, Buring J. Risk markers and the primary prevention of cardiovascular disease. In: Mann DL, Zipes DP, Libby P, eds. *Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine.* 10th ed. Philadelphia, PA: Elsevier Saunders; 2014:chap 42

Figure 18. Cancer Mortality by Gender



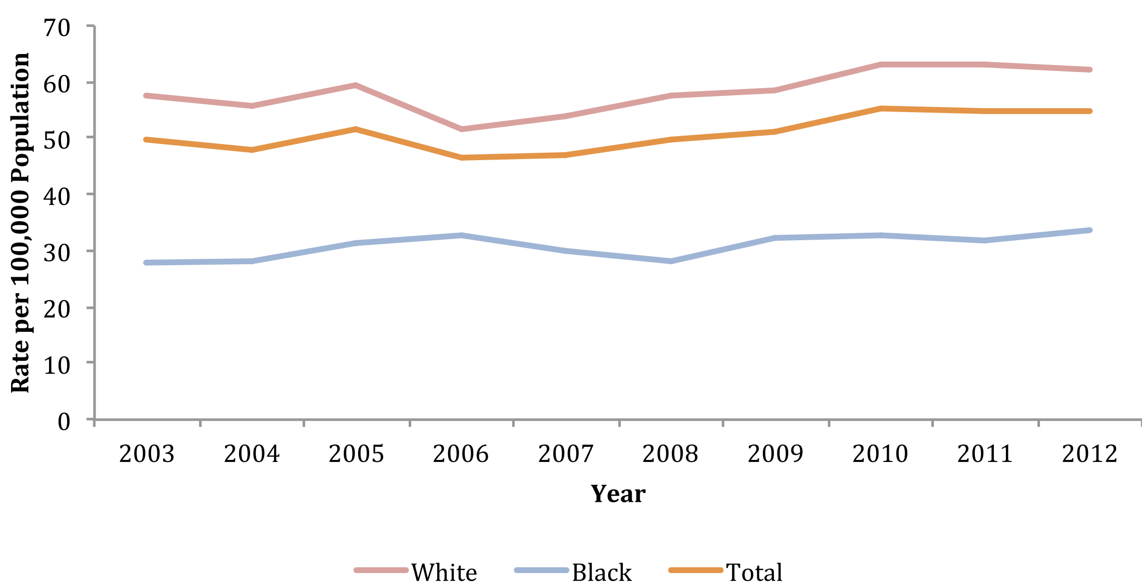
Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Malignant neoplasms, commonly known as cancer, is a term used for diseases in which abnormal cells divide without control and are able to invade other tissues. Cancer is not just one disease but many diseases. There are more than 100 different types of cancer (National Cancer Institute). Screening for cervical, colorectal, and breast cancers - some of the most common types of cancers - helps find these diseases at an early, often highly treatable stage.

From 2003-2012, Mississippi's cancer mortality rate was 202.3 deaths per 100,000 persons. For that same period, black residents had a higher mortality rate (236.6 deaths per 100,000 persons) when compared to white residents (190.6 deaths per 100,000 persons). Additionally, the "other" racial category had the lowest cumulative mortality rate of 75.4 deaths per 100,000 persons. There are gender differences with respect to cancer mortality. Females had a lower cumulative mortality rate (159.2 deaths per 100,000 persons) compared to males (265.8 deaths per 100,000 persons) from 2003-2012. Public Health District III had the highest cumulative cancer mortality rate (228.2 deaths per 100,000 persons) while Public Health District IV had the lowest cumulative mortality rate (186.4 deaths per 100,000 persons).

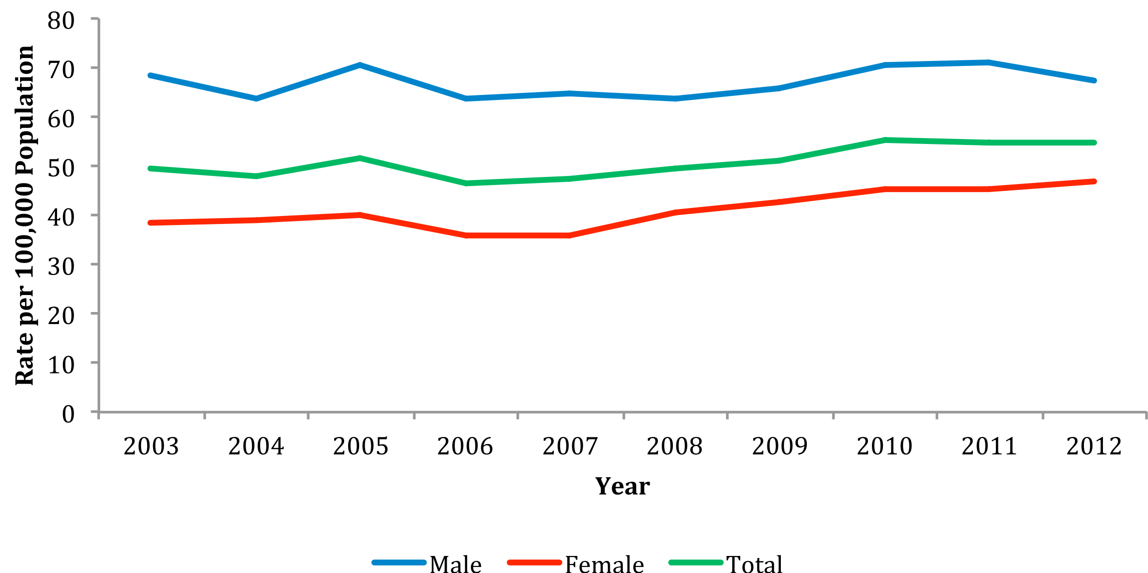
Mortality (COPD)

Figure 19. COPD Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 20. COPD Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

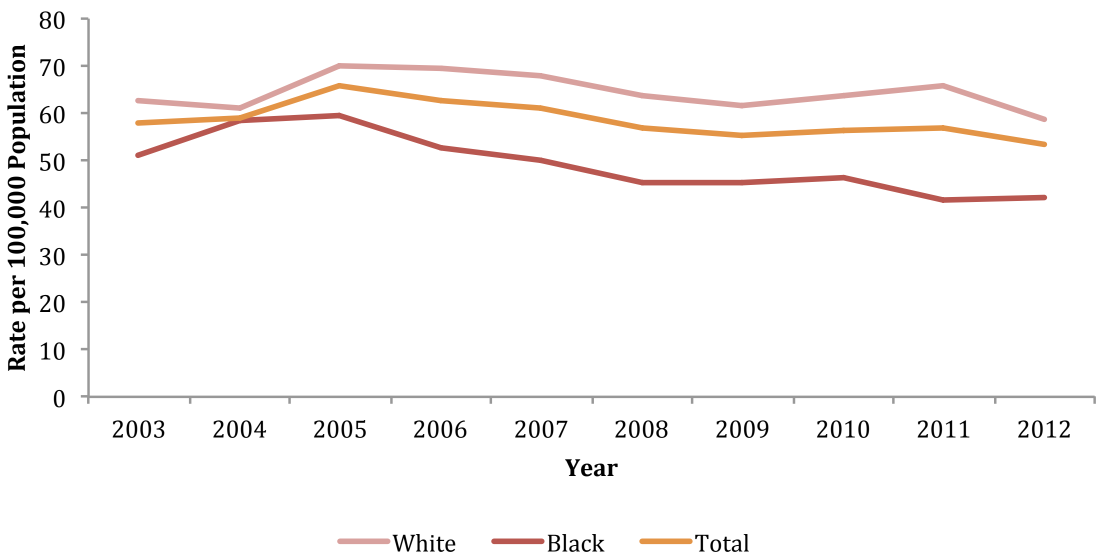
Chronic obstructive pulmonary disease (COPD) refers to a group of lung diseases that make it hard to breathe over time. Emphysema and chronic bronchitis are the most important COPD conditions and they frequently coexist. The age-adjusted mortality rate for COPD in Mississippi was 54.6 deaths per 100,000 for 2012, compared to 41.6 deaths per 100,000 in the U.S. As demonstrated in Figure 20, COPD mortality rates have been relatively stable over time with a slight increasing trend overall from 2003 to 2012. Over that period, COPD was the fourth leading cause of death in Mississippi.

The COPD mortality rate for white residents (62.4) was substantially higher than for black residents (33.5). In other words, overall white residents were almost 2 times more likely than black residents to die from COPD. The COPD mortality rate was also substantially higher for males than females, at 67.5 and 46.8 per 100,000 respectively. Males are 1.5 times more likely to die from COPD than females. Mississippians over 65 experience the highest rates of COPD mortality – the rate for people age 65-74 was 198.5 per 100,000 in 2012 and 453.3 per 100,000 for ages 75-84.

The death rate for COPD is higher in Public Health District II compared to the other eight districts. The rates among white residents are also higher in District II and higher among black residents of District VII.

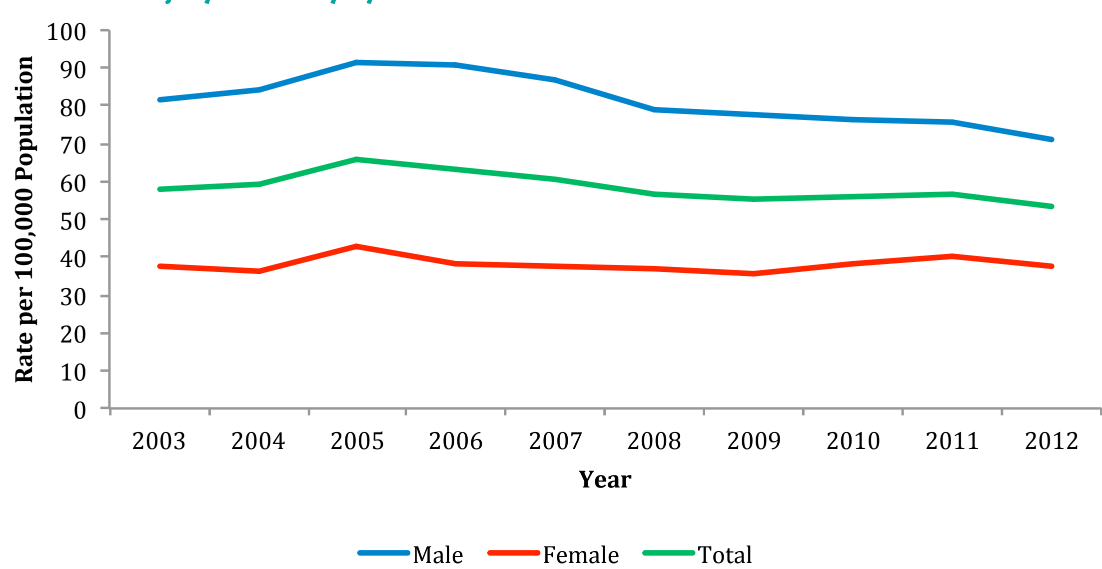
Mortality (Unintentional Injury)

Figure 21. Unintentional Injury Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 22. Unintentional Injury Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

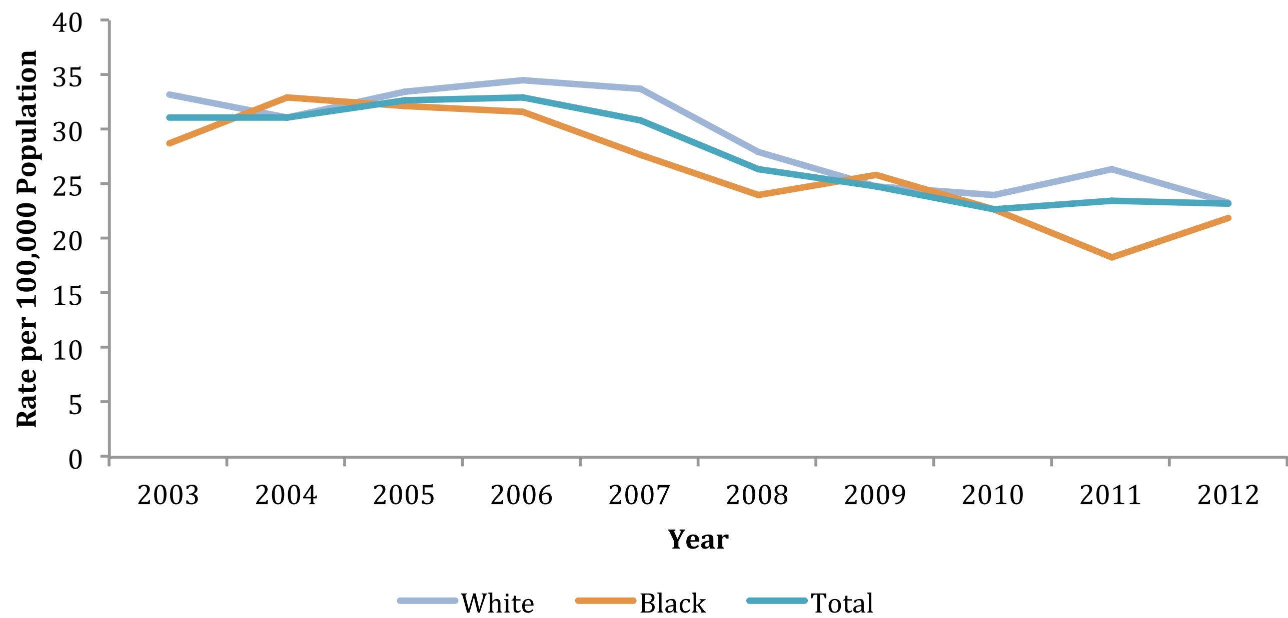
Unintentional injuries are events that occur that are not deliberate, planned, or done with purpose. The most common unintentional injuries result from motor vehicle accidents, falls, fires, drowning, poisonings, and oxygen deprivation.

Unintentional injury mortality has fluctuated over the years. In fact, the overall unintentional injury mortality decreased from 57.9 deaths per 100,000 persons in 2003 to 53.4 deaths per 100,000 persons in 2012. During the ten-year span of 2003-2012, the highest mortality rate (65.7 deaths per 100,000 persons) occurred in 2005. The cumulative unintentional injury mortality rate was 58.4 deaths per 100,000 persons from 2003-2012. There are gender differences in mortality of unintentional injuries. Mississippi females have a lower cumulative mortality rate (38.1 deaths per 100,000 persons) compared to Mississippi males (81.5 deaths per 100,000 persons) from 2003-2012. By comparison, the U.S. rate of unintentional injury deaths in 2013 was 26.6 deaths per 100,000 persons for females and 53.1 deaths per 100,000 persons for males.[16] Public Health District IX had the highest cumulative unintentional injury mortality rate (71.6 deaths per 100,000 persons) compared to Public Health District V which had the lowest cumulative mortality rate (46.3 deaths per 100,000).

The mortality rate among black residents for unintentional injuries was highest in District VI (55.8 deaths per 100,000 persons) and lowest in District V (38.3). The mortality rate among white residents was highest in District IX (78.2) and lowest in District V (54.4)

Mortality (Motor Vehicle Accidents)

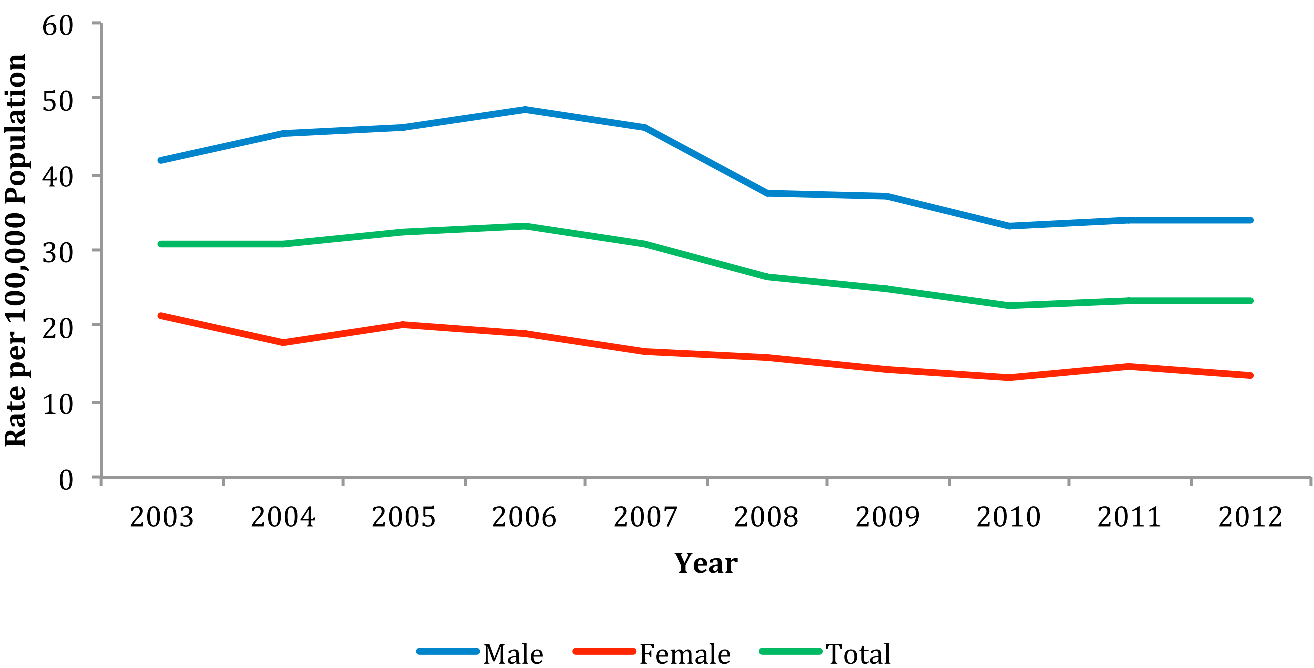
Figure 23. Motor Vehicle Accident Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

16 CDC National Vital Statistics Report Volume 64, Number 2

Figure 24. Motor Vehicle Accident Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

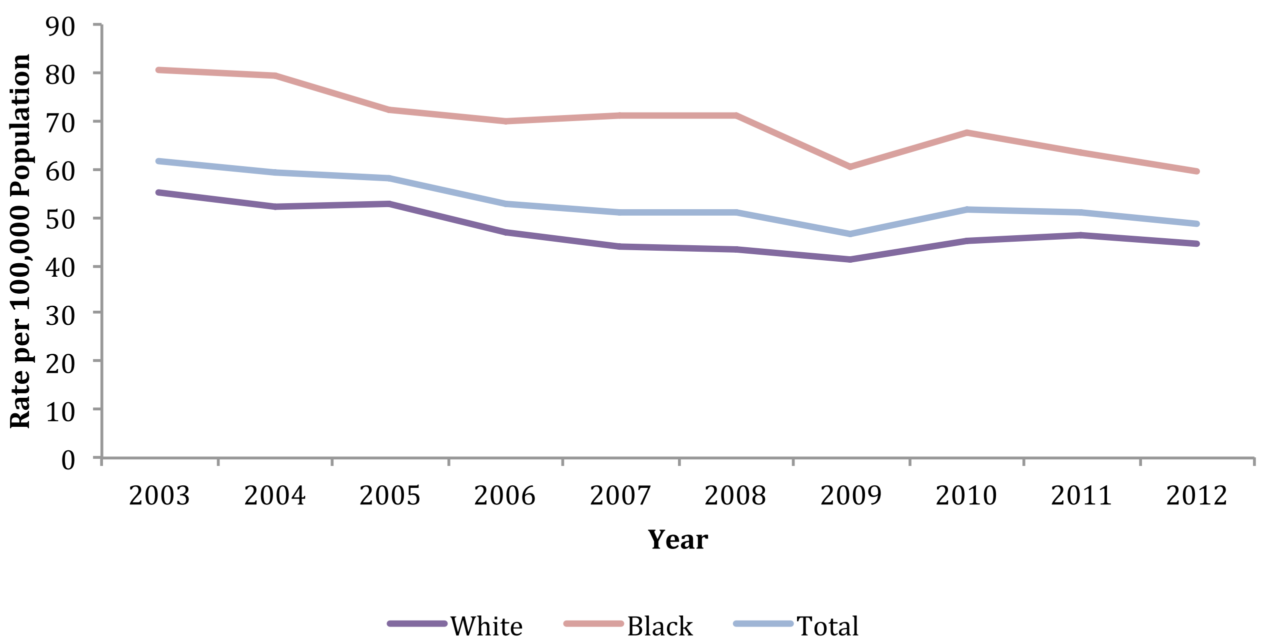
The largest contributor to unintentional injury mortality in Mississippi is motor vehicle accidents. A motor vehicle accident is an unintended collision of at least one motor vehicle with a stationary or moving object or person, resulting in injuries, death, or loss of property.

From 2003-2012, Mississippi's motor vehicle accident mortality rate was 27.9 deaths per 100,000 persons. For that same period, white residents had a slightly higher mortality rate (29.3 deaths per 100,000 persons) compared to black residents (26.5 deaths per 100,000 persons). There are gender differences with respect to mortality by motor vehicle accidents. Females had a lower cumulative mortality rate (16.6 deaths per 100,000 persons) compared to males (40.4 deaths per 100,000 persons) from 2003-2012. Public Health District VI had the highest cumulative motor vehicle accident mortality rate (33.8 deaths per 100,000 persons) compared to Public Health District V, which had the lowest cumulative mortality rate (22.5 deaths per 100,000 persons).

The mortality rate among black residents for motor vehicle accidents during 2003-2012 was highest in District VI (31.8 deaths per 100,000 persons) and lowest in District IX (18.9). The mortality rate among white residents was highest in District III (37.7) and lowest in District IV (24.0).

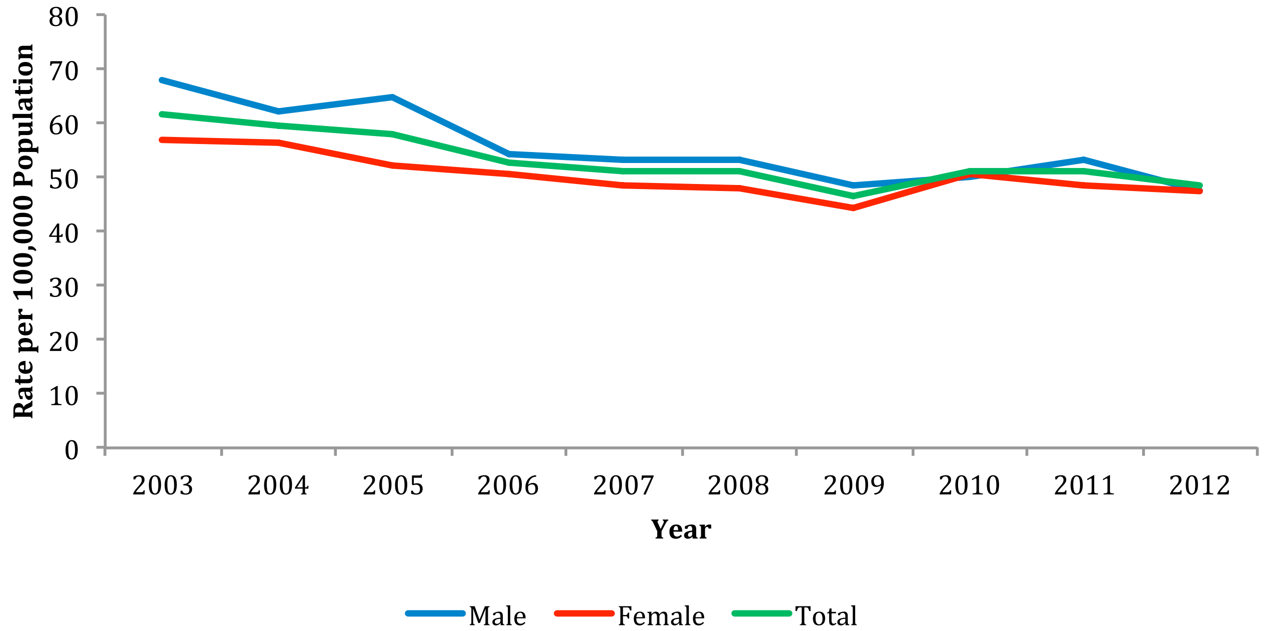
Mortality (Stroke)

Figure 25. Stroke Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 26. Stroke Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

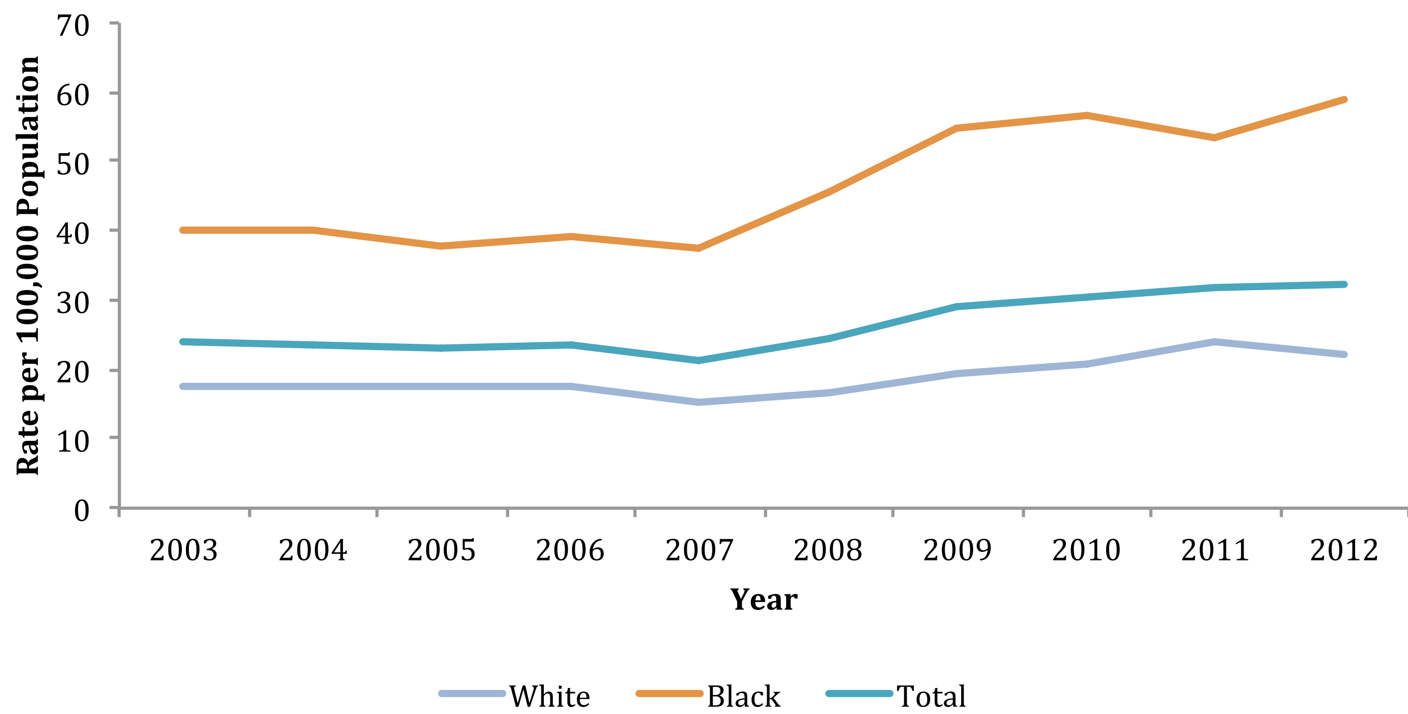
Stroke results from the obstruction of a blood vessel in the neck or brain causing the brain tissue to be starved of oxygen or the rupture of a blood vessel in the brain which causes hemorrhage into the brain tissue. Stroke is usually manifested as sudden onset of paralysis, weakness, or numbness on one side of the body, loss of speech or difficulty talking, partial loss of the field of vision, and dizziness or loss of consciousness.

Stroke mortality rates have generally declined from 2003 to 2012. The 2003 rate in Mississippi was 61.7 deaths per 100,000 persons, declining 21% to 48.5 deaths per 100,000 persons in 2012. White residents consistently had the lowest stroke mortality of all racial groups, with a total rate of 46.8 deaths per 100,000 over the ten-year time period. Conversely, black residents had the highest stroke mortality rate, with a cumulative rate of 69.2 deaths per 100,000 persons for the same period. Geographic disparities exist when comparing stroke mortality. Public Health District III had the highest cumulative stroke mortality rate (66.6 deaths per 100,000 persons) compared to Public Health District I which had the lowest cumulative mortality rate (46.1 deaths per 100,000 persons).

The mortality rate among black residents for 2003-2012 was highest in District III (80.2 deaths per 100,000 persons) and lowest in District I (63.6). The mortality rate among white residents was highest in District II (54.6) and lowest in District I (39.7).

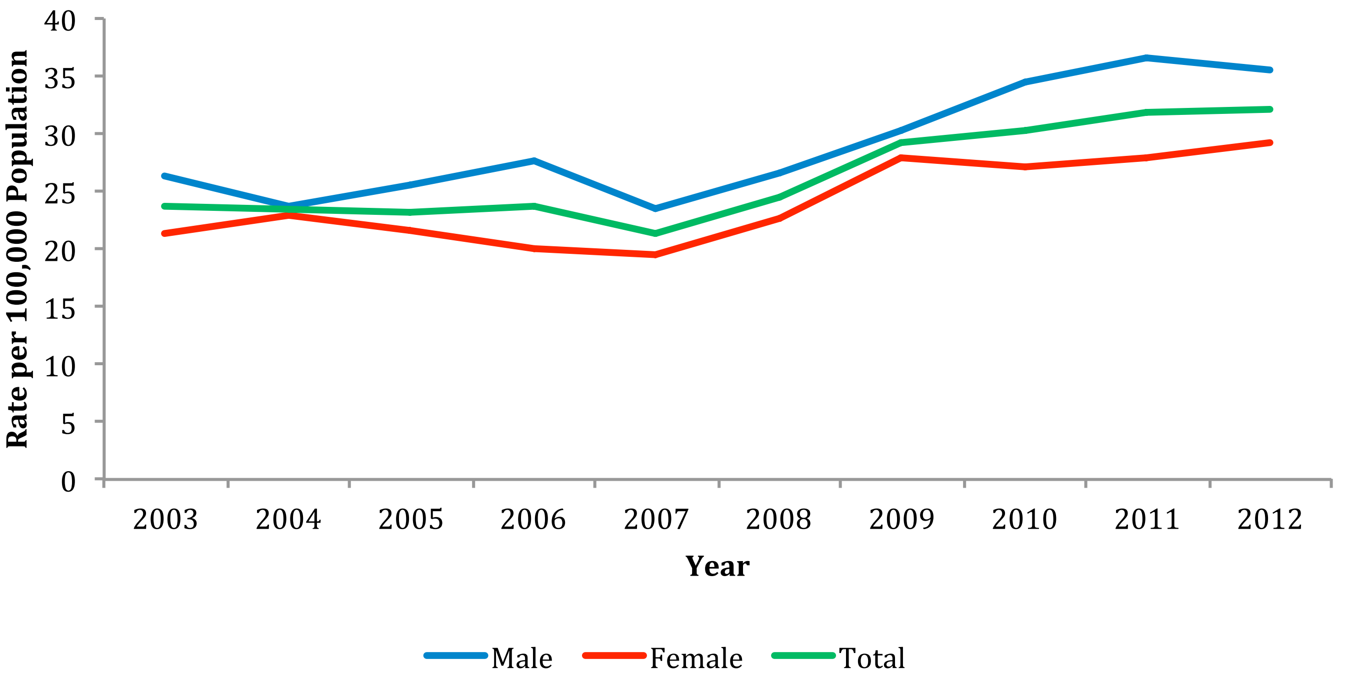
Mortality (Diabetes)

Figure 27. Diabetes Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 28. Diabetes Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Diabetes (mellitus) is a group of diseases marked by high levels of blood glucose resulting from defects in insulin production, insulin action, or both[17]. Diabetes can lead to serious complications, including heart disease, blindness, kidney failure, lower-extremity amputations, and premature death.

In 2012, the age-adjusted death rate related to diabetes in Mississippi was 32.2 deaths per 100,000 persons. During this same period, the Mississippi diabetes death rate related to diabetes was higher for males than females; males had a diabetes-attributed death rate of 35.6 deaths per 100,000 persons while females had a diabetes-attributed death rate of 29.1 deaths per 100,000 persons.

Black residents also had the highest death rate due to diabetes, at 58.8 deaths per 100,000 persons, while white residents had a diabetes-attributed death rate of 22.0 deaths per 100,000 persons.

In 2012, Mississippi had the second highest diabetes death rate in the nation. In 2011, diabetes was also the 8th leading cause of death in Mississippi, accounting for over 3% of Mississippi deaths.

Gender differences exist as well. Males had a higher cumulative diabetes mortality rate (29.2 deaths per 100,000 persons) compared to females (24.1 deaths per 100,000 persons) from 2003-2012. Also, geographic disparities exist when comparing diabetes mortality rates. Public Health District I had the highest cumulative diabetes mortality rate (43.8 deaths per 100,000 persons) compared to Public Health District IX which had the lowest cumulative mortality rate (14.7 deaths per 100,000 persons).

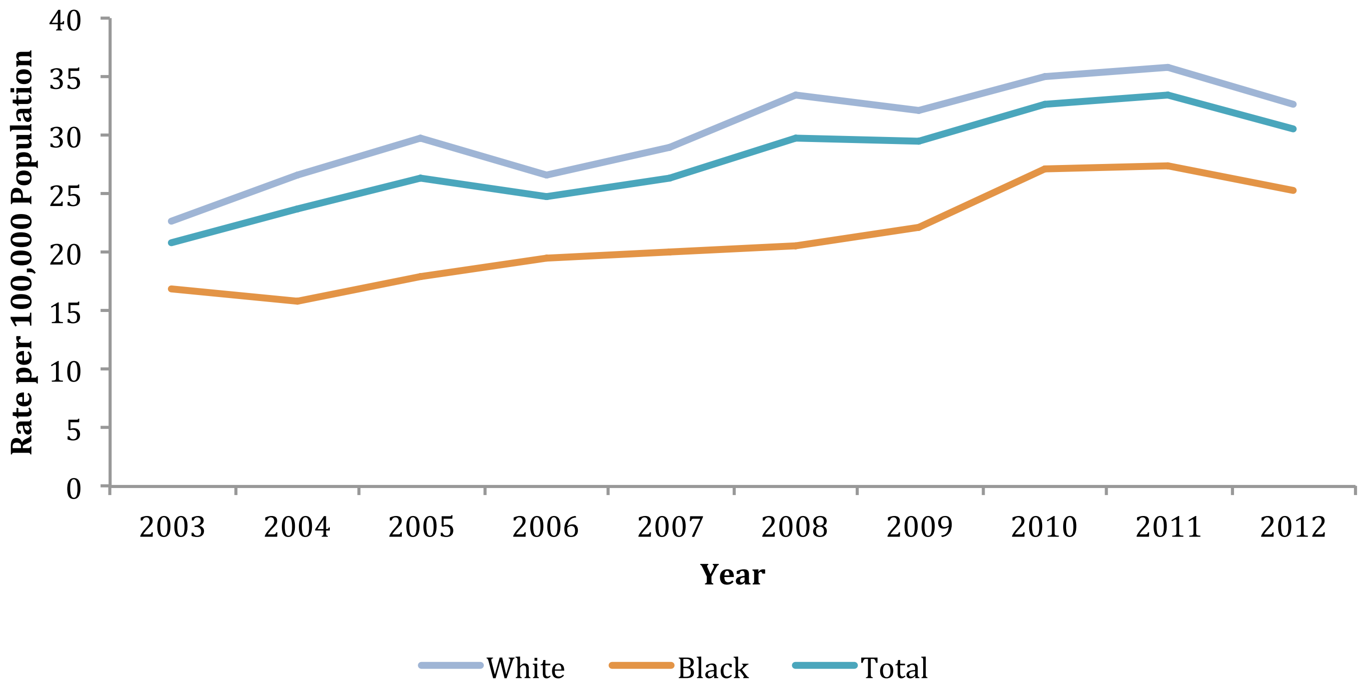
One limitation of this data is that it does not account for unreported diabetes-attributed death cases in Mississippi.

Information on self-reported diabetes prevalence can be found on page 121 of this report.

17 DiabetesCare.net

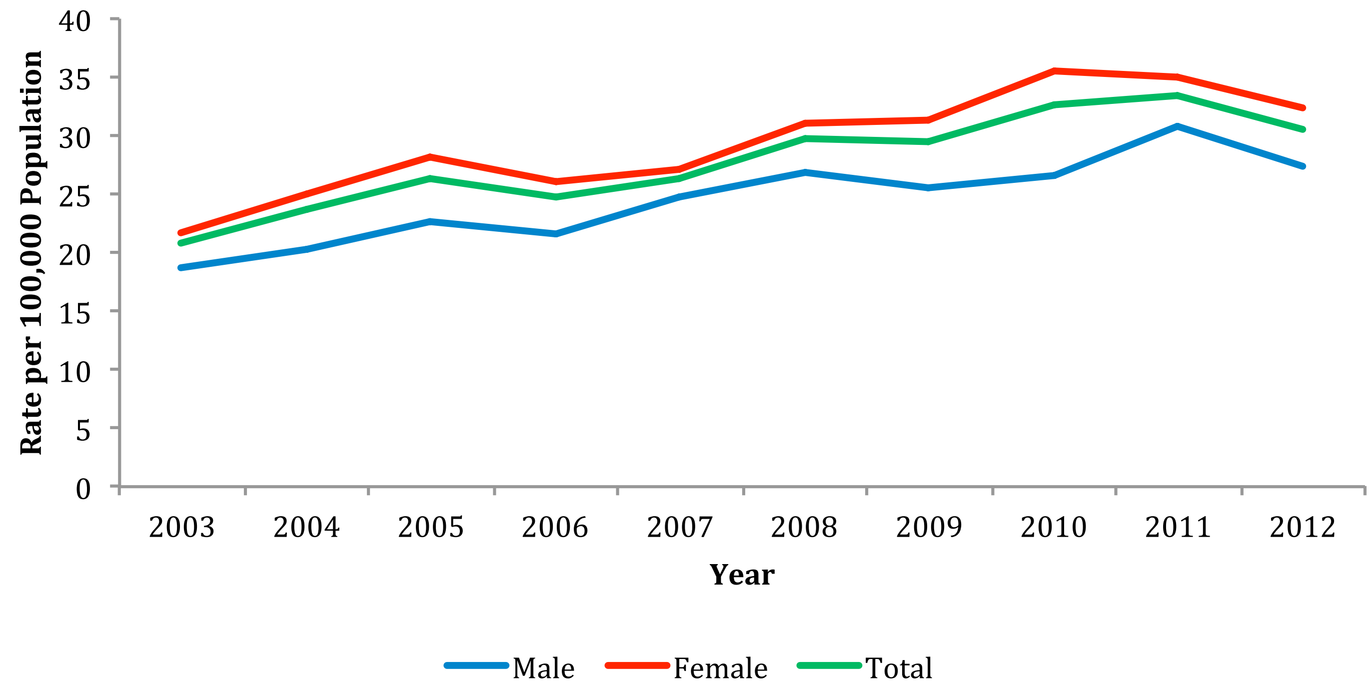
Mortality (Alzheimer's Disease)

Figure 29. Alzheimer's Disease Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 30. Alzheimer's Disease Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

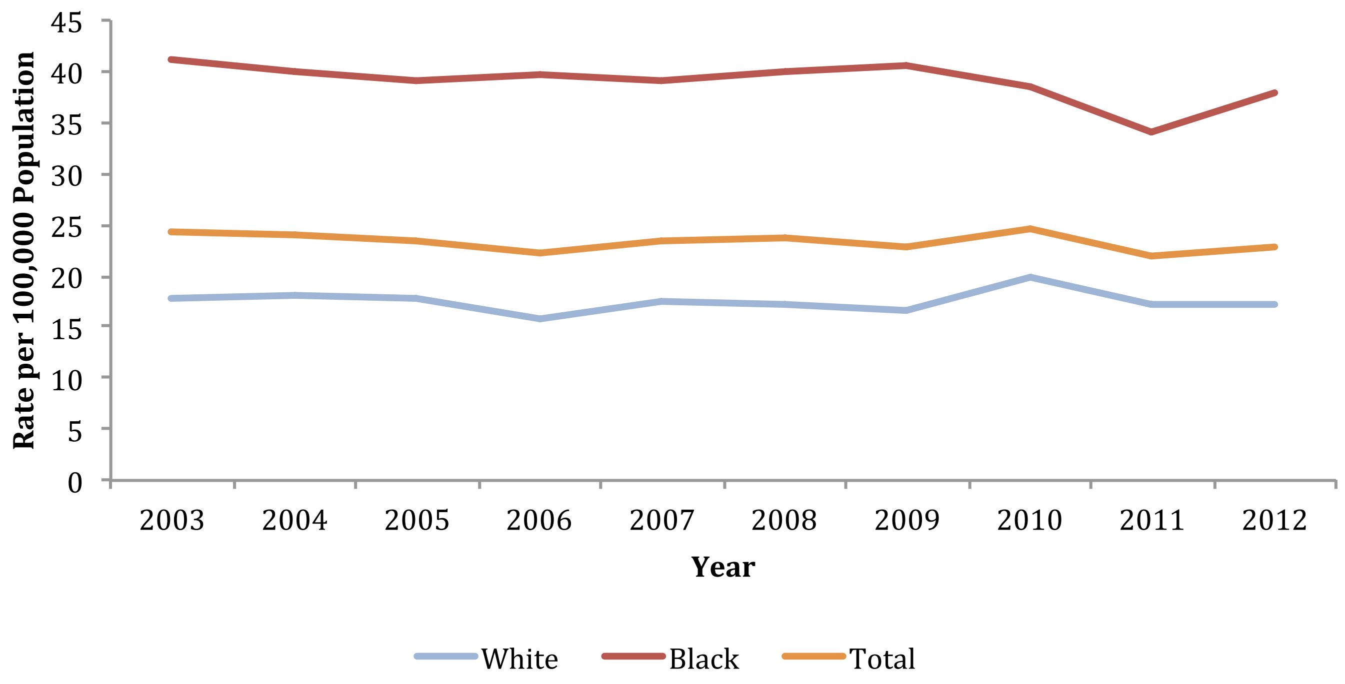
Alzheimer's disease is the most common form of dementia and is characterized by worsening memory and changes in behavior. It generally affects the elderly but early onset forms of the disease can appear in the 40's and 50's. Mortality rates from Alzheimer's disease have been increasing in recent years. Nationally, Alzheimer's disease has risen from the eighth leading cause of death in 2003 to sixth in 2012. In Mississippi during that same period, it has risen from ninth place to seventh place. However, the mortality rate is rising faster in Mississippi than it is nationally (7.7% from 2003 to 2012 nationally vs. 47.1% in Mississippi). It is possible that some of the increase in Alzheimer's disease mortality is attributable to increased awareness and diagnosis of the disease. Mississippi's Alzheimer's disease mortality rate of 30.6 deaths per 100,000 in 2012 was 29% higher than the national rate of 23.8.

Even after adjusting for the fact that the female population is older than the male population (women have a longer life expectancy), females had an 18% higher mortality rate from Alzheimer's disease than did men (32.3 vs. 27.4 deaths per 100,000 population in 2012). In 2012, white residents had a mortality rate from Alzheimer's disease was 29% higher than the rate for black residents in Mississippi (compared to 24% nationally). Regionally, over the five-year period from 2008-2012, District VIII had the highest mortality rates from Alzheimer's disease for both whites and blacks while District V had the lowest rates.

The mortality rate for Alzheimer's disease among black residents was highest in District VIII (26.7 deaths per 100,000 persons) compared to District V with the lowest (17.1). Similarly, the Alzheimer's disease mortality rate among white residents was highest in District VIII (40.6) and lowest in District V (21.4).

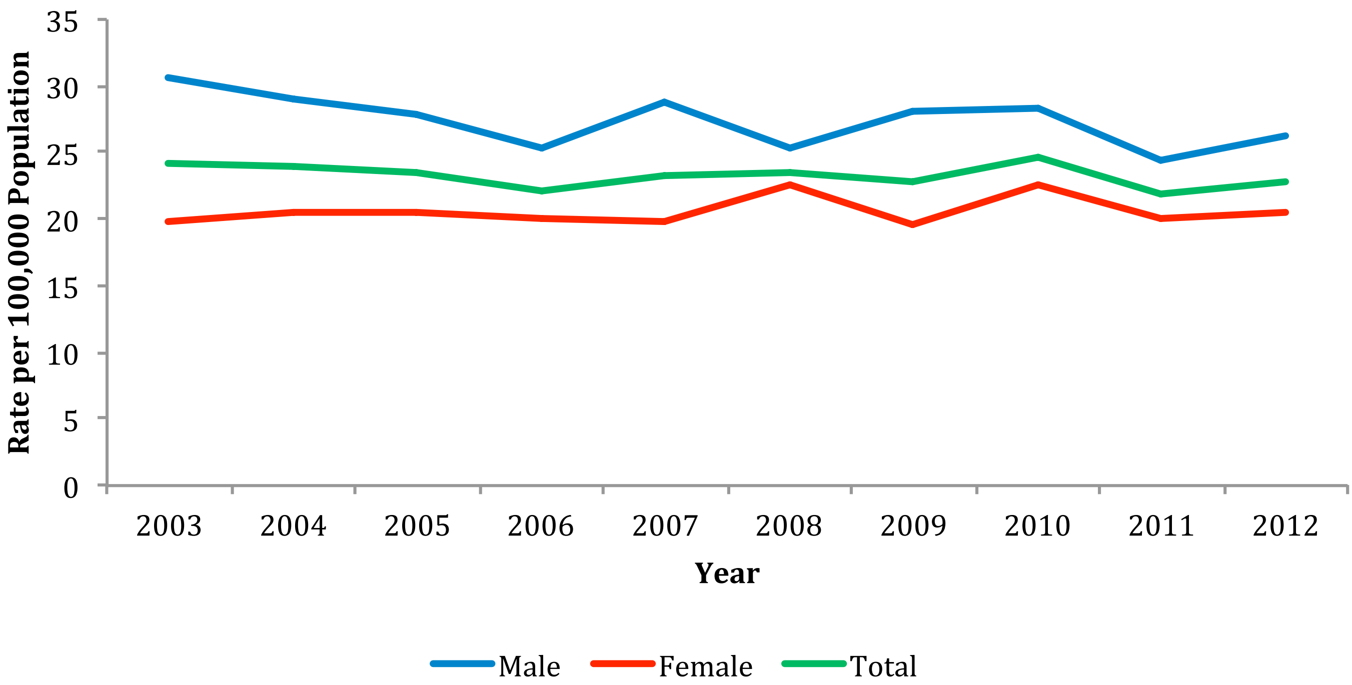
Mortality (Kidney Disease)

Figure 31. Kidney Disease Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 32. Kidney Disease Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

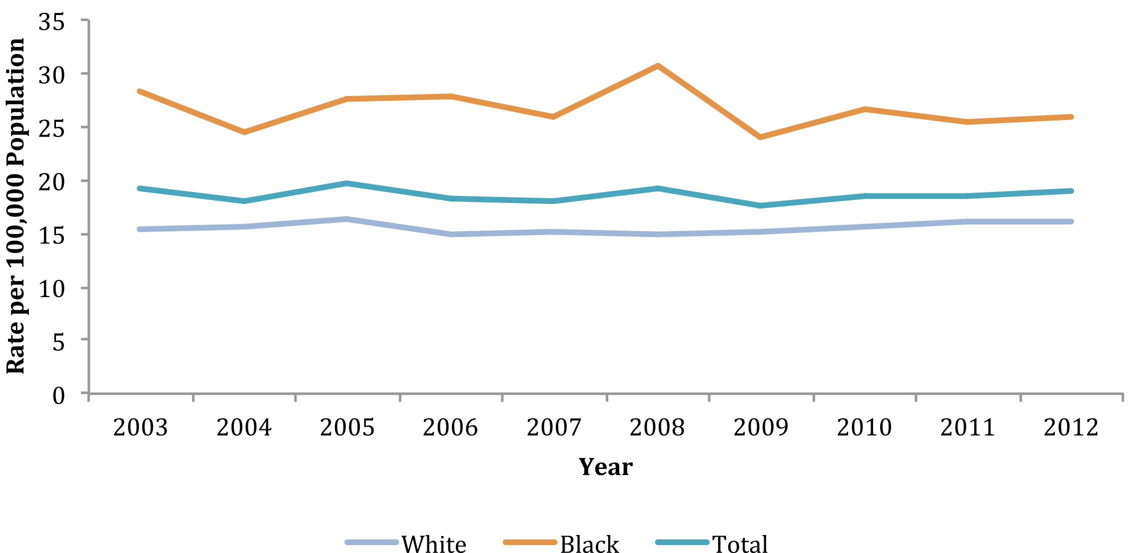
Chronic kidney disease is a condition characterized by a gradual loss of kidney function over time. Chronic kidney disease may be caused by diabetes, high blood pressure, and other disorders. As kidney disease progresses, it may lead to kidney failure (which requires dialysis or a kidney transplant) or death (source: National Kidney Foundation).

Chronic kidney disease mortality rates declined slightly from 2003-2012. The 2003 rate in Mississippi was 24.2 deaths per 100,000 persons, declining 5.4% to 22.9 deaths per 100,000 persons in 2012. White residents consistently had the lowest chronic kidney disease mortality, with a total rate of 17.4 deaths per 100,000 over the ten-year time period. Conversely, black residents had the highest chronic kidney disease mortality rate, with a cumulative rate of 38.9 deaths per 100,000 persons for the same period. There are also gender differences in the mortality of chronic kidney disease. Females had a lower cumulative mortality rate (20.5 deaths per 100,000 persons) compared to males (27.3 deaths per 100,000 persons) from 2003-2012. Regional differences were present with respect to chronic kidney disease mortality. Public Health District III had the highest cumulative mortality rate (32.2 deaths per 100,000 persons) compared to Public Health District I which had the lowest cumulative mortality rate (19.3 deaths per 100,000 persons).

The mortality rate among black residents for 2003-2012 was highest in District III (45.9 deaths per 100,000 persons) and lowest in District V (33.0 per 100,000 persons). The white mortality rate was highest in District VI (44.8 per 100,000 persons) and the lowest in District V (13.7 per 100,000 persons).

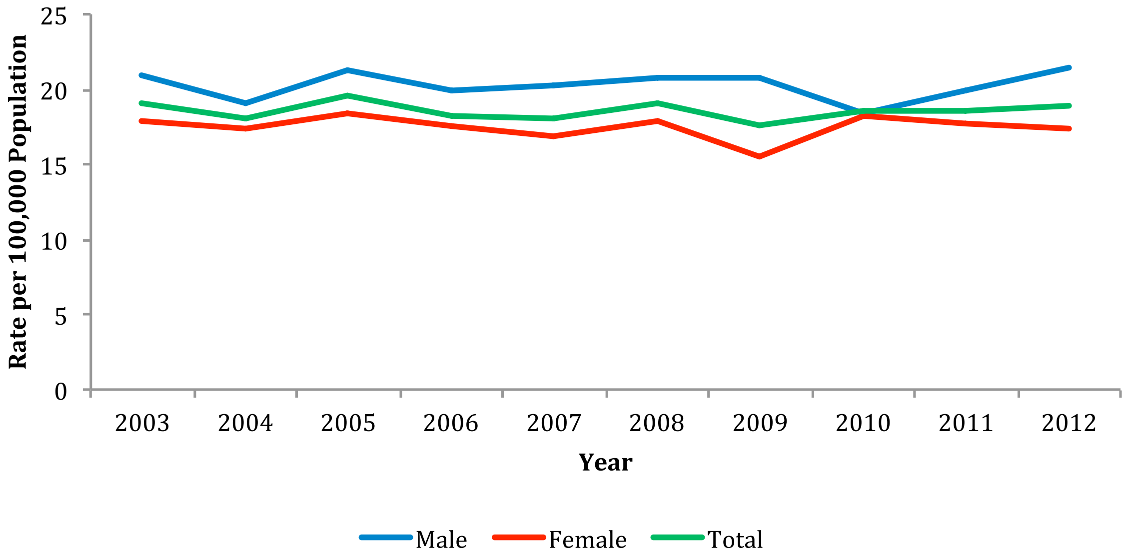
Mortality (Septicemia)

Figure 33. Septicemia Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 34. Septicemia Mortality by Gender



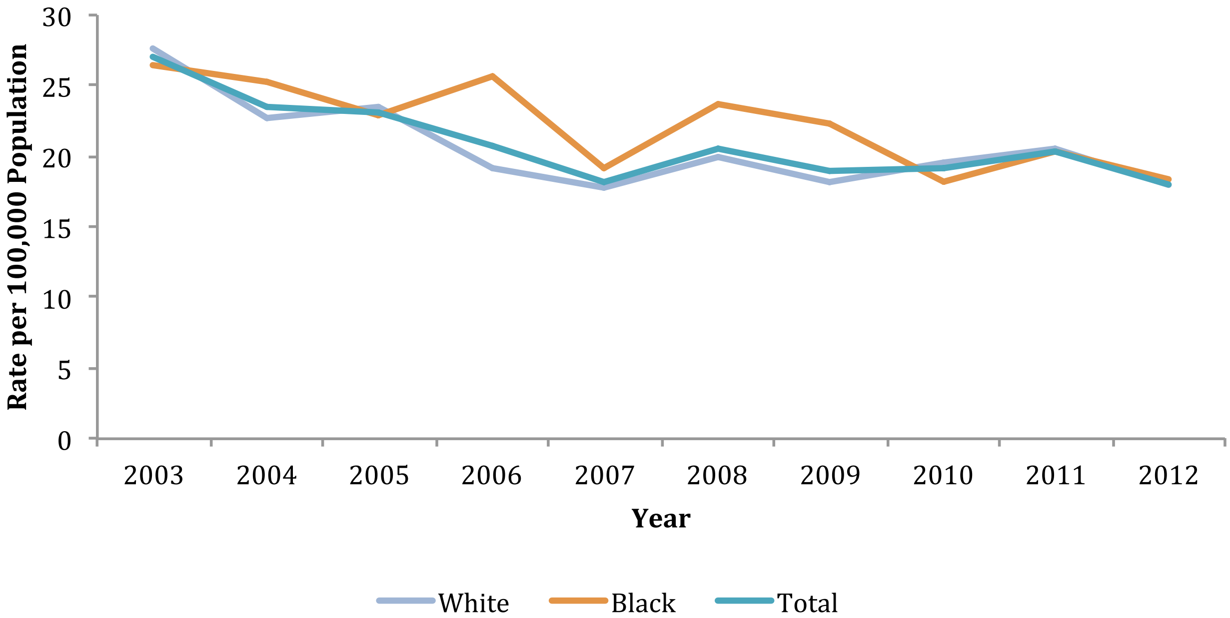
Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Septicemia formerly called "blood poisoning" is a systemic disease caused by the spread of microorganisms and their toxins via the circulating blood.

Septicemia is among the top ten causes of death in Mississippi. For the period 2003-2012 there were approximately 2% of all deaths attributed to septicemia. Death from septicemia is more likely to occur in black residents (26.7 deaths per 100,000 population) compared to white residents (15.5 deaths per 100,000). The overall rate is 18.5 deaths per 100,000 for the same period. During the past 10 years the rate has remained approximately the same. From a regional point of view District VI (14.7 deaths per 100,000) had the lowest rate compared to the highest rate in District VIII (22.8 deaths per 100,000).

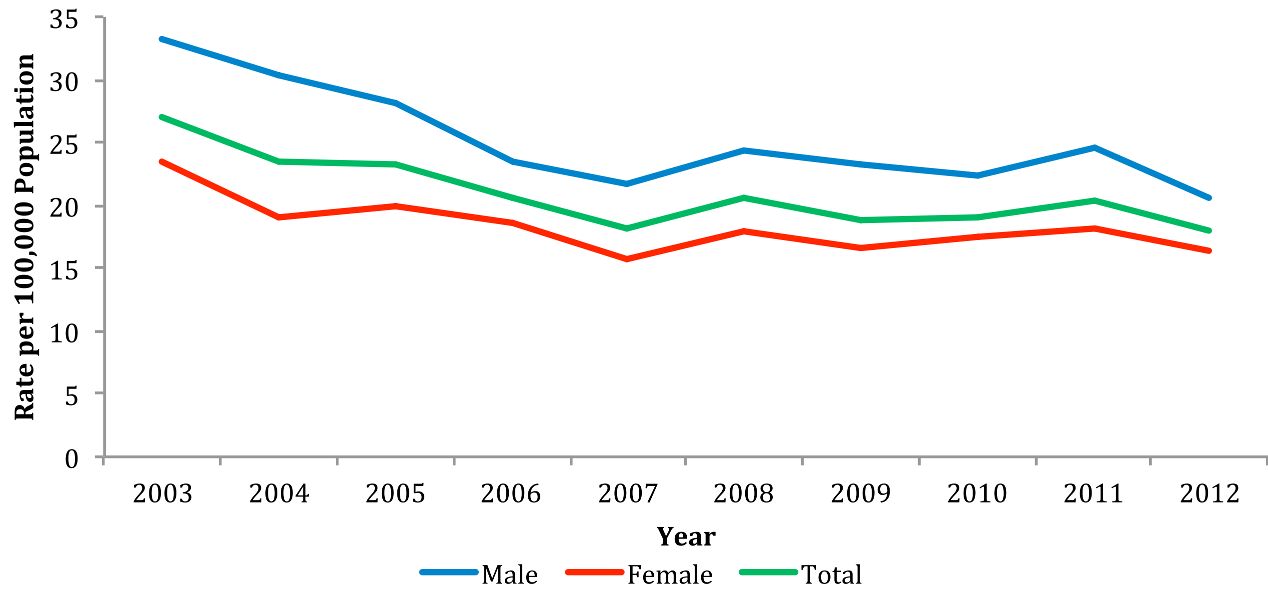
Mortality (Pneumonia and Influenza)

Figure 35. Pneumonia and Influenza Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 36. Pneumonia and Influenza Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Pneumonia and Influenza (flu) are infectious conditions that affect the lungs, leading to death in a small proportion of cases. Certain populations, such as older adults (over 65 years of age), infants, pregnant women, and those with impaired immune systems, are at higher risk for severe complications from pneumonia and influenza, including death. In 2011, over 53,000 Americans died from pneumonia and influenza. Pneumonia and influenza combined is the 8th most common cause of death in the U.S. and the 10th most common cause of death

in Mississippi Effective vaccines are available for influenza, and some forms of pneumonia, making immunization an important measure for reducing unnecessary deaths from these conditions.

The data displayed in Figure 35 and Figure 36 demonstrates a slight but steady decline in the death rate from pneumonia and influenza in Mississippi over the ten year period from 2003 to 2012. The death rate for black residents, which trended higher than the total rate from 2005 to 2009, has realigned with the total rate from 2010 onward. A consistent gender disparity is evident, with the death rate persistently higher in males when compared to females. The Mississippi death rate from pneumonia and influenza in 2011 was higher than the national rate, 20.4 per 100,000 compared to 17.3 per 100,000 for the nation overall.

Mortality rates vary across the Public Health Districts in Mississippi. The mortality rate among black residents from pneumonia and influenza for the period 2003-2012 was highest in District VIII (30.0 deaths per 100,000 persons) and lowest in District II (17.6). The mortality rate among white residents was highest in District III (26.8) and lowest in District I (15.3).

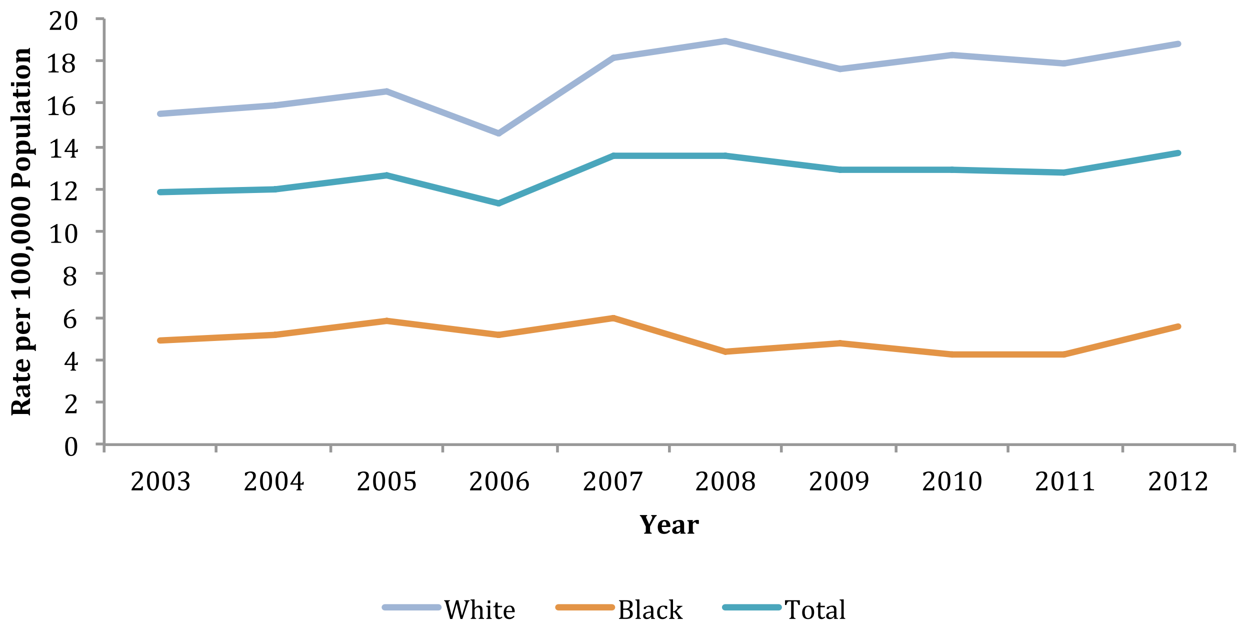
Information about pneumonia and influenza vaccination rates among older adults is presented later in this report, beginning on page 98.

Suicide and Homicide

Though not in the ten leading causes of death in Mississippi, deaths from suicide and homicide are of particular interest as they are, by definition, preventable, and they are among the leading causes of death in younger age groups. Additionally, both suicide and homicide disparately affect certain racial groups, with rates of suicide much higher in the white population than the black population, and rates of homicide substantially higher in the black population than the white. Information about these causes of death is presented on the following pages.

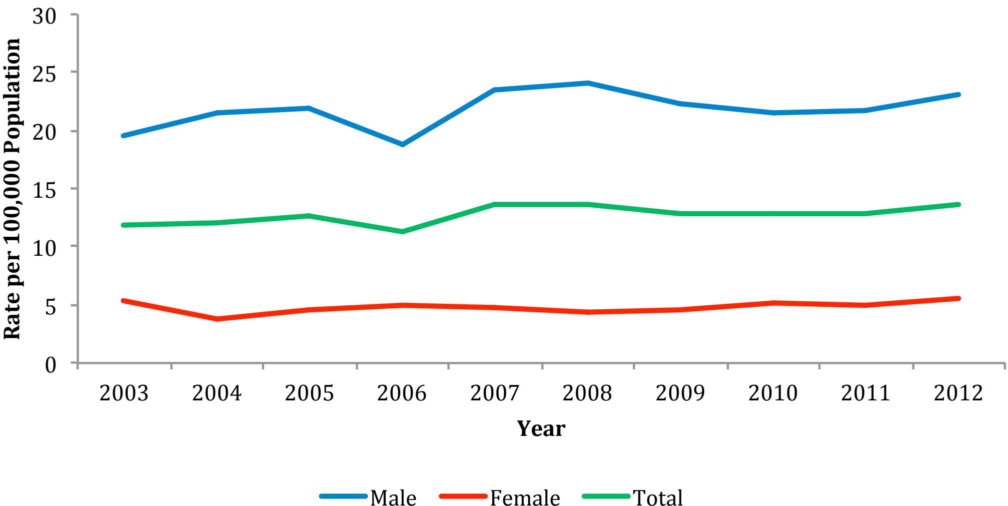
Mortality (Suicide)

Figure 37. Suicide Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 38. Suicide Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

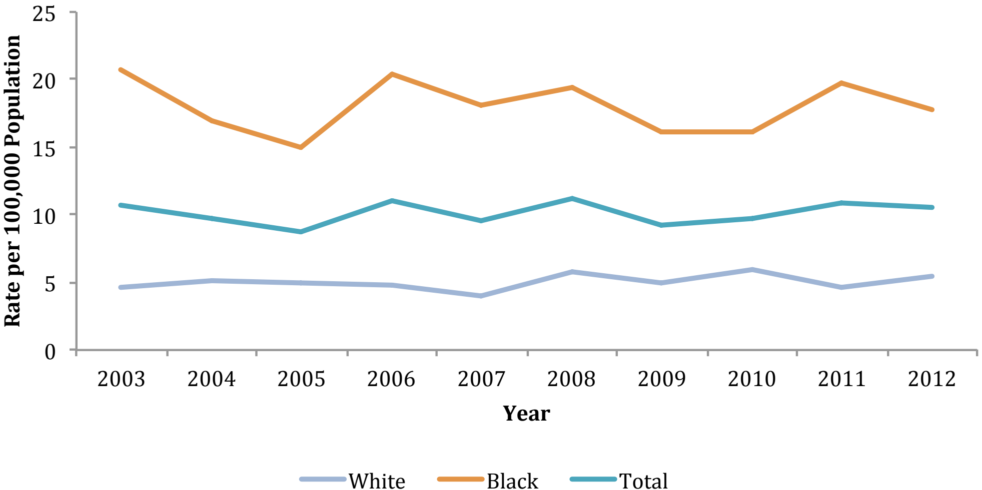
Suicide is the one of the most extreme outcomes of mental illness and claimed the lives of 40,531 persons nationwide in 2012; 402 of those were Mississippians. Suicide mortality in Mississippi increased from 11.9 deaths per 100,000 in 2003 to 13.7 in 2012 (a 15% increase). White residents in Mississippi were 3.4 times more likely to die from suicide than black residents in 2012 (18.8 vs. 5.5 deaths per 100,000). This was higher than the ratio for the nation in 2012 which was 2.6 (14.1 vs. 5.5). The disparity was even greater by gender. In 2012, males were 4.2 more likely than females to commit suicide (23.1 vs. 5.5 deaths per 100,000). Nationally, males were 3.8 times more likely than females to commit suicide (20.3 vs. 5.4).

White suicide rates showed little variation between Public Health Districts over the period 2008-2012 although the highest rate occurred in District IX. Additionally, for the same period, the suicide rate for the black population was much higher in District IX than the other districts.

The Healthy People 2020 objectives set a goal of 10.2 deaths per 100,000 from suicide. With rates increasing since 2003, both Mississippi and the nation are moving in the wrong direction.

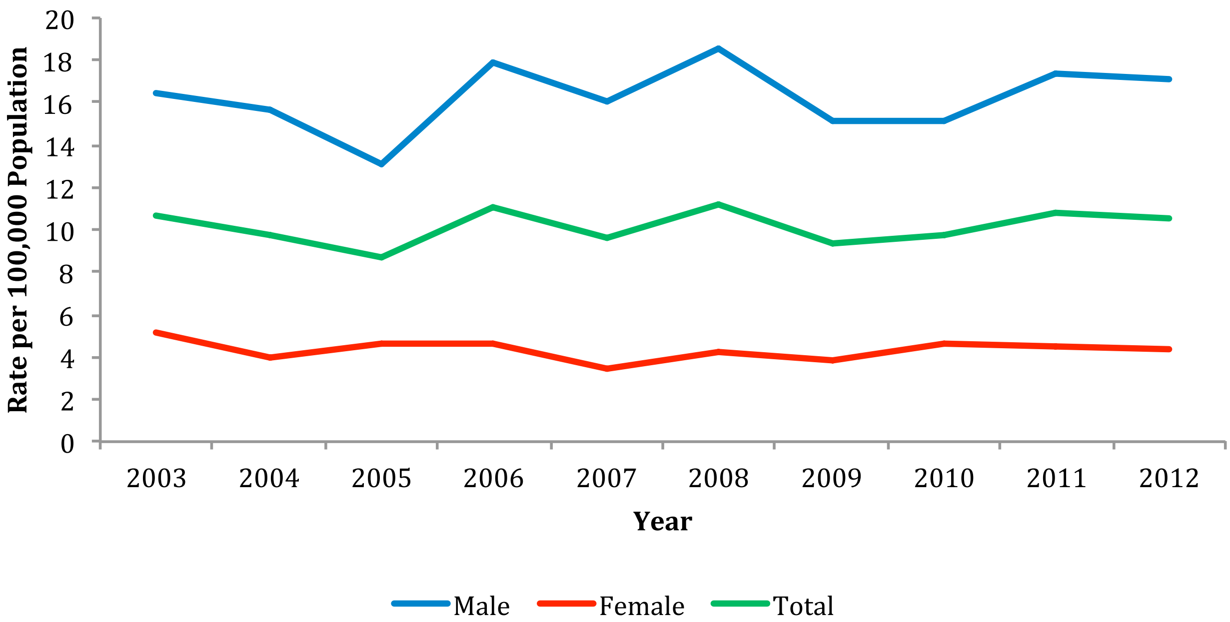
Mortality (Homicide)

Figure 39. Homicide Mortality by Race



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

Figure 40. Homicide Mortality by Gender



Source: MSTAHRS 2003-2012; Age-adjusted Rate (2000 U.S. Population)

The Healthy People 2020 target for homicide mortality is 5.5 homicides per 100,000 population. In 2012 the national rate was 5.3 indicating that the target has been met for the nation. However, Mississippi's age-adjusted homicide mortality rate in 2012 was twice the national rate at 10.6 homicides per 100,000 population. While this rate has fluctuated over the past ten years, the trend is essentially flat. Additionally, the rate for black residents was more than three times higher than the rate for white residents in 2012 (17.8 vs. 5.5). As troubling as this is, the disparity at the national level was even greater, with a rate among black residents in 2012 that was 5.7 times higher than the rate among white residents (18.1 vs. 3.2).

Males were also at higher risk than females and were four times more likely to die from a homicide than were women (17.1 vs. 4.3). The 15-24 and 25-34 age groups had the highest rates of mortality from homicides, peaking at 23.2 homicides per 100,000 population for the 25-34 age group in 2012. Because of the racial disparity in homicide rates, geographic distribution of homicide rates tends to be determined by the racial makeup of the area. However, for the five-year period from 2008-2012, District III had the highest homicide rates for black and white residents (22.1 and 9.4 homicide deaths per 100,000 population respectively). District V had the second highest rate among black residents (21.2) and District VII had the second highest rate among white residents (8.1).

Overall Self-Rated Health

Personal Health Rating

A widely used global measure of health status is self-rated health. Self-rated health refers to a single-item measure of health status where individuals are asked to rate their own health on a five-point scale (excellent, very good, good, fair, or poor). The link between self-rated health and mortality has been documented in several studies showing the same to be true in different cultures and in a broad range of age groups.

The self-reported status of one's health attempts to determine how people look at their personal health and how well they function physically, psychologically and socially while engaged in normal daily activities. How people view their own health may indicate dysfunction and disability not readily apparent in standard morbidity and mortality data.

Self-rated fair or poor health correlates with certain health risk factors, illness severity, and certain social and demographic characteristics. Health risk factors such as smoking and obesity are associated with fair or poor health, as are certain indicators of disease severity, such as insulin use and duration of diabetes.

In Mississippi, the 2013 BRFSS reflected a tremendous gap between lower and higher income groups regarding a health rating of fair or poor. People reporting a household income of less than $15,000 per year reported a fair or poor health rate of 46.4% which was almost seven times higher than those who earn $75,000 per year or more who reported a fair or poor health rate of only 6.8 percent.

There appears to be a strong correlation between low income groups and self-reported status of fair or poor health along with the self-reported days of poor physical and mental health.

Poor Physical Health Days

As is the case with mental health, there are similar patterns observed with poor physical health for more than seven days in the past month. Knowledge of this condition aids health professionals in determining the percentage of people who are unable to perform work or household tasks because of a physical illness or injury for at least seven days in the previous month.

Poor physical health is a general indicator of a person's health related quality of life. The number of poor days of physical health reveals information about the causes of morbidity in a population. People's self-assessment of their physical health, which includes physical illness and injury, is a good measure of recent health.

For Mississippi, the 2013 BRFSS revealed a substantial difference in days of poor physical health when viewed by the annual income of the respondents. Those whose income was less than $15,000 per year reported a rate of poor physical health at 38.0% while those with an annual income of $75,000 had a rate of only 7.7 percent. This means that the lower income groups were almost five times as likely to have experienced seven days or more of poor physical health than those in the higher category of income.

Poor Mental Health Days

A healthy mental state is essential for overall health and wellness. The number of poor mental health days within the past thirty days is another health indicator that is used to measure the quality of life of an individual.

Poor mental health includes stress, depression and other emotional problems that can prevent someone from effectively engaging daily activities like school, work, recreation and personal care. Occasional down days are normal, but persistent mental or emotional health problems should be evaluated by a qualified professional.

In Mississippi two groups of people are especially noticeable when looking at the numbers: females and those who have less that a high school education. Females reported a rate of more than seven days of poor mental health in the past month more than one and one-half times that of males—20.1% in 2013 to 13.2 percent. The other group that shows substantially higher rates for poor mental health more than seven days in the prior month is individuals who do not have a high school education. In 2013, people in this category reported a rate of 24.3% compared to only 9.4% for college graduated which is more than two and one-half times higher.

Limited Activity Because of Physical, Mental or Emotional Problems

This condition tells us to what extent physical, mental or emotional health interferes with normal day-to-day activities such as self-care, work, school or recreation. Having this information helps health professional to measure the effects of illnesses and disabilities

People who report having less than a high school education report much higher rates of limited activity. According to the 2013 Behavioral Risk Factor Surveillance Survey (BRFSS) those who did not finish high school had a rate of 42.8% compared to only 13.9% for those who were college graduates. This means that persons who did not complete high school are more than three times as likely to experience more than seven day of limited activity because of poor physical, mental or emotional health than college graduates.

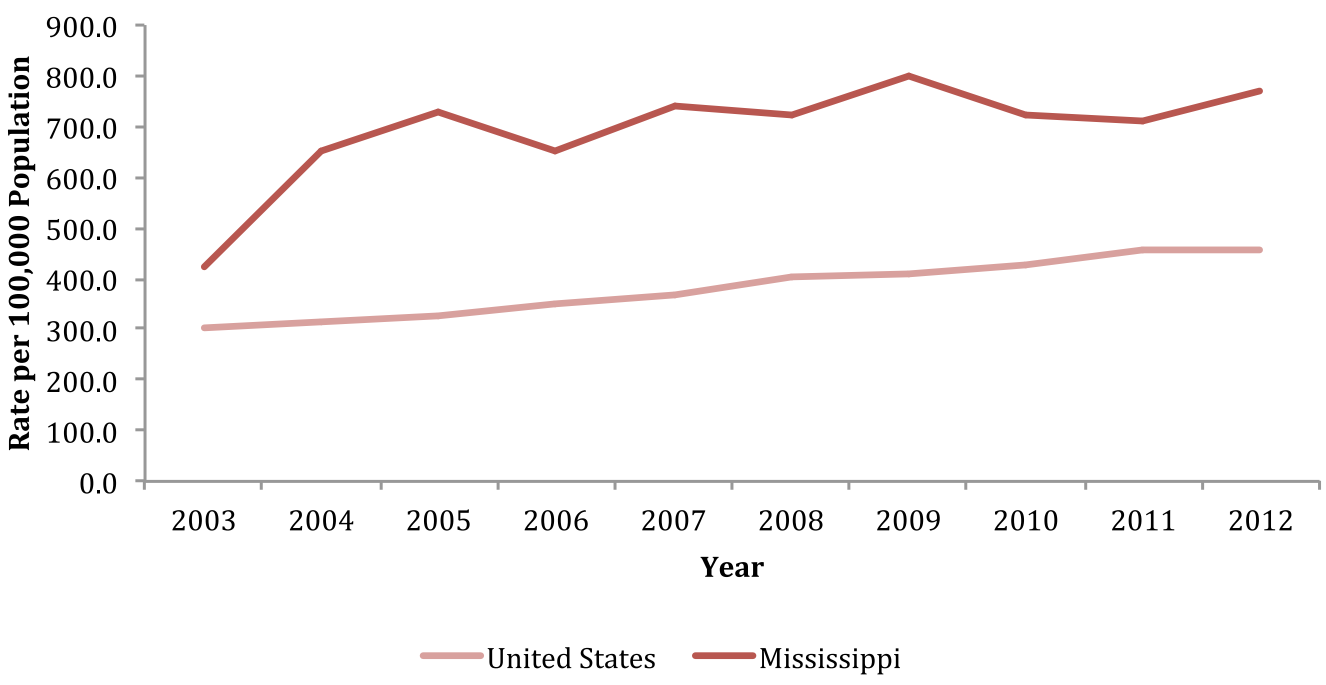
The overall rate of reported limited activity based on physical, mental, or emotional problems in Mississippi for 2013 was 26.5 percent. The national average was 19.7 percent.

Infectious Diseases

Historically, infectious diseases were one of the largest drivers of morbidity and mortality for most of human existence. With advances in sanitation and the advent of antibiotics and vaccines, infectious diseases now play less of a role in shaping human health than chronic, non-infectious diseases, particularly in the developed world. However, infectious diseases still pose a threat to the health of Mississippians, particularly when it comes to sexual health. Many of the most prevalent reportable infectious diseases are sexually transmitted, though not all are.

Chlamydia

Figure 41. Chlamydia Rates by Year, United States and Mississippi



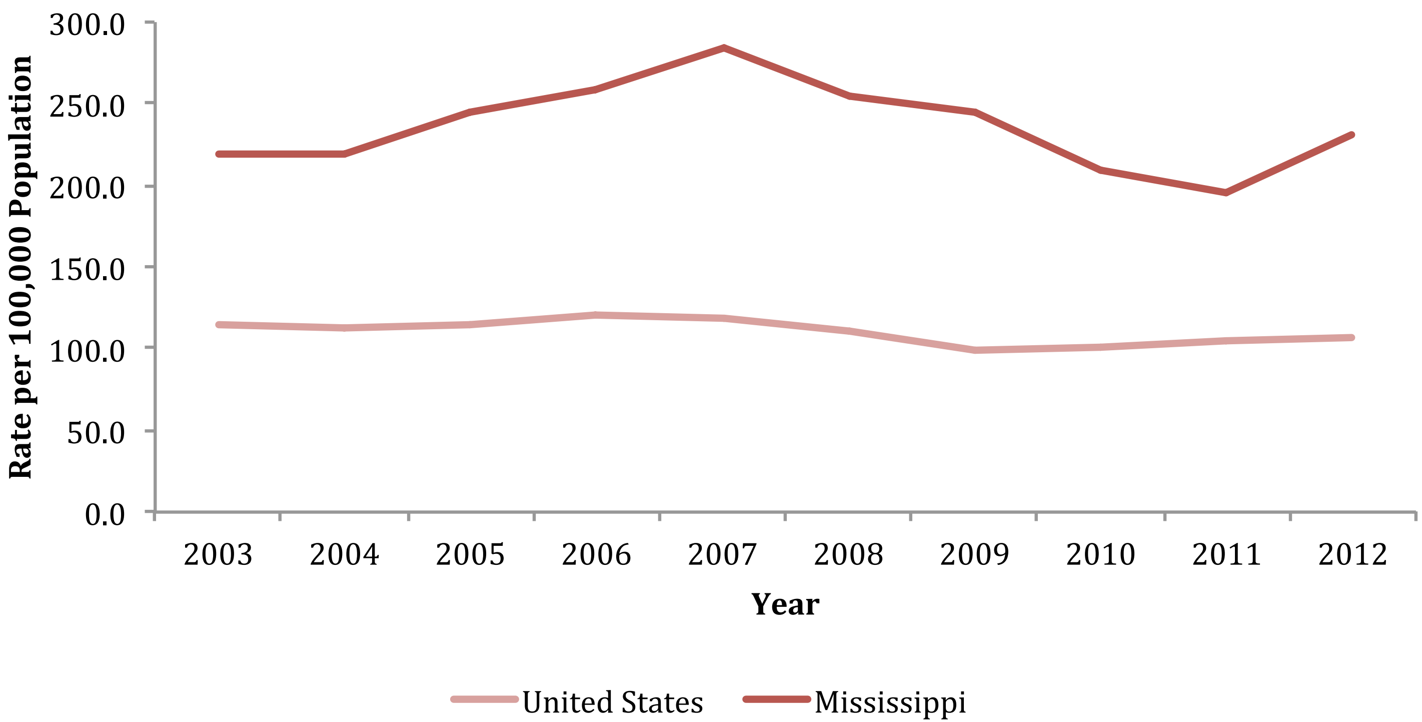
Sources: MSDH Annual Morbidity Report 2012; Centers for Disease Control and Prevention (CDC). Sexually Transmitted Disease Surveillance 2012. Atlanta: U.S. Department of Health and Human Services; 2014

Pelvic inflammatory disease, infertility and chronic pelvic pain are the adverse consequences of untreated chlamydial infection. In 2012, Mississippi had the highest rate of chlamydial infections among the 50 states (774 per 100,000 persons). Reported rates of chlamydia among women (1094.7 cases per 100,000) were 2.5 times greater than those among men (434.2 cases per 100,000). Adolescents and young adults aged 15-24 years make up only 15% of Mississippi's population, yet represented 76% of all cases reported in 2012. Among 15-24 year olds, the black population was disproportionately affected by chlamydia, representing 64% of cases in that age group. Additionally, 72% of those cases were female.

In 2011 and 2012, Hinds (14%), Harrison (6%), De Soto (4%), and Forrest (4%) counties had the highest overall number of reported cases among 15-24 year olds. Black females were disproportionately affected, having the highest proportion of cases in each of the highest morbidity counties. Less than 1% of all chlamydia cases were co-infected with HIV, 8% of cases were diagnosed with at least one additional infection of chlamydia, 13% of cases had a gonorrhea infection, and 0.2% of cases were diagnosed with primary, secondary, or early latent syphilis during 2012.

Gonorrhea

Figure 42. Gonorrhea Rates by Year, United States and Mississippi



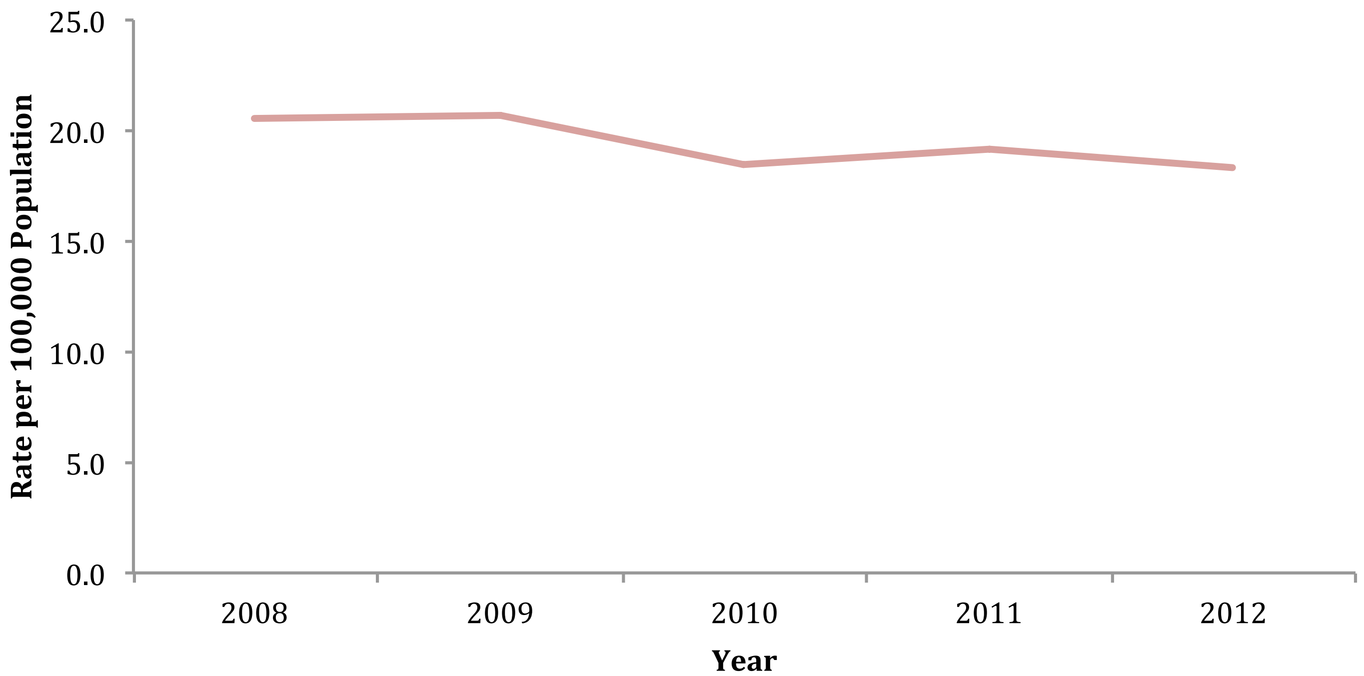
Sources: MSDH Annual Morbidity Report 2012; CDC Sexually Transmitted Disease Surveillance 2012. Atlanta: U.S. Department of Health and Human Services; 2014

In 2012, Mississippi ranked 1st among 50 states in gonorrheal infections (230.8 per 100,000 persons). For the past ten years, Mississippi has averaged over 7,000 cases annually. Although there was a statewide decrease in cases during 2007-2011, Mississippi saw an 18% increase from 2011 to 2012 (from 5,816 to 6,877 cases). Two-thirds of all cases occurred in 15-24 year olds, (29% in 15-19 year olds and 38% in 20-24 year olds). Among 15-24 year olds, the black population was disproportionately affected by gonorrhea, representing 74% of cases in that age group. In addition, 57% of those cases were female.

In 2012, Hinds (20%), Harrison (5%), De Soto, Washington, and Forrest (4% each) counties had the highest number of overall cases and cases among 15-24 year olds. Black females had the highest number of cases in Forrest and Washington Counties and black males had the highest number of cases in De Soto, Harrison, and Hinds Counties. Of all gonorrhea cases reported in CY 2012, 6% were diagnosed with at least one additional gonorrhea infection, 43% with chlamydia, and 0.3% with primary, secondary, or early latent syphilis. Two percent of cases were co-infected with HIV.

HIV Disease

Figure 43. Mississippi HIV Disease Incidence, 2008-2012



Source: MSDH Annual Morbidity Report 2012

Note: National Comparison Data Unavailable for HIV Disease. Complete national reporting has traditionally been available only for AIDS, not HIV Disease.

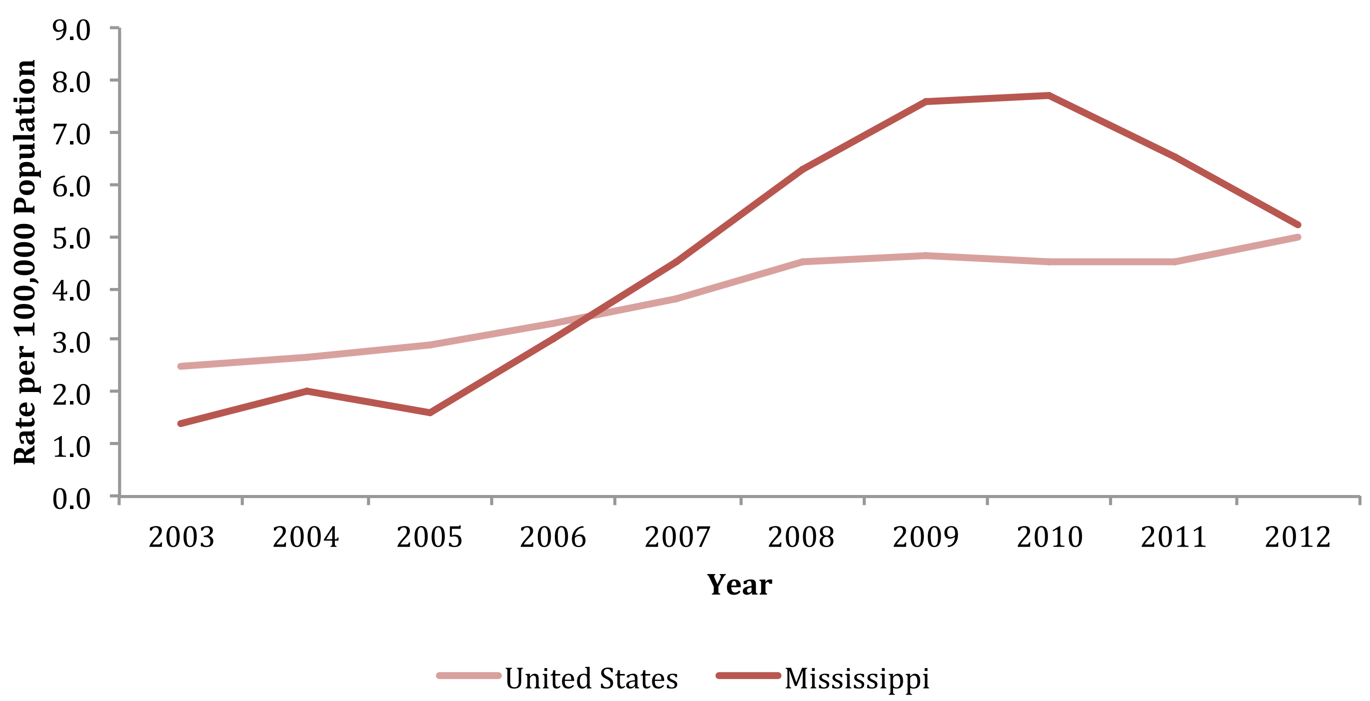
As of December 31, 2013, there were an estimated 10,473 Mississippians living with HIV. According to the 2012 National HIV Surveillance Report, Mississippi has the 10th highest rate of HIV infection in the United States. The state's capital city of Jackson has the eighth highest rate of HIV infection and in 2011, the eighth highest AIDS diagnosis of all metropolitan statistical areas (MSA) in the U.S. More than half of all HIV infection cases in the state occurred in six counties: Hinds (27%), Rankin (6%), Harrison (5%), DeSoto (5%), Forrest (5%), and Lauderdale (4%) counties. The greatest number of new cases of HIV disease occurred in District V, which includes the metropolitan Jackson area. About 47% of all persons living with HIV disease in Mississippi reside in the metropolitan Jackson area. In 2013, the prevalence of HIV (number of living cases) in District V was 623.2 cases per 100,000 persons. District III had the second highest case rate at 476.8 per 100,000 persons, followed by District VIII, with a prevalence of 306.0 cases per 100,000 persons.

Mississippi's black population is profoundly and disproportionately affected by HIV. Black residents comprise only 38% of the State's total population, but account for more than 75% of all new cases and had an incidence rate in 2012 nearly seven times that of white residents. Black men represented 59% of cases reported in 2012 and were the only group to experience an increase in cases over the ten-year period (2002-2012). Since 2007, the proportion of cases of HIV among women in Mississippi has steadily declined. In 2012, women represented 23.9% of newly diagnosed HIV disease cases. Among females, people identifying as black have the highest burden of disease, representing 75% of cases in 2012. Since 2008, female cases have decreased 35% (from 184 to 119 cases). In 2012, black females had rates nearly seven times higher than white females (17.9 vs. 2.7).

Comparing rates of infection by age, Mississippi is tied with Florida for the highest rate of infection nationally among 13-19 year olds and had the fifth highest rate of infection among 20-24 year olds. From 2001 to 2006, 30-44 year olds reported the highest number of new cases, representing 33% of cases in 2006. Since then, there has been a shift in the distribution of new cases to 15-29 year olds. This age group saw a 47% increase from 2006 to 2012. Cases among other age groups have remained stable. In 2012, 15-29 year olds represented 44% of new cases, 30-44 year olds represented 29% of new cases, and 45-59 year olds represented 21% of new cases. There has also been significant decline in HIV infection among infants due to effective treatment of pregnant women who are infected with HIV which prevents maternal transmission during pregnancy and at birth.

Primary and Secondary Syphilis

Figure 44. Primary and Secondary Syphilis Rates by Year, United States and Mississippi



Sources: MSDH Annual Morbidity Report 2012; CDC Sexually Transmitted Disease Surveillance 2012. Atlanta: U.S. Department of Health and Human Services; 2014

The rate for primary and secondary syphilis (the stages in which syphilis is most infectious) was 6.3 per 100,000 in 2008 and 5 per 100,000 in 2012. Mississippi now ranks 11th in rates of primary and secondary syphilis among 50 states. From 2003 to 2010, Mississippi experienced a six-fold increase in primary and secondary syphilis cases (from 40 to 229 cases), but since 2010 the number of cases has decreased each year. Individuals between the ages of 20-29 represent 53% of P&S syphilis reported. There were very few cases of congenital syphilis in Mississippi from 2008 through 2012.

In 2012, 44% of all syphilis cases occurred in Hinds (District V), Warren (District V), and Harrison (District IX) counties. In Harrison County, 48% of cases occurred among black males and 36% occurred among black females. Among black male cases, 42% of cases occurred in 20-29 year olds. Among black females, 78% of cases occurred in 20 - 29 year olds. In Hinds County, 69% of cases were black males and 27% of cases were black females. Among black male cases, 50% were 20-29 years old and 22% were between the ages of 30 and 39 years old. Among black

female cases, 66% were between the ages of 20 and 29. In Warren County, 56% of cases were black males, 26% of cases were black females, and 19% were white females. Among black males, the cases were distributed among all age groups and in black females 86% were between the ages of 15 and 39. For white females, cases were distributed evenly among all age groups.

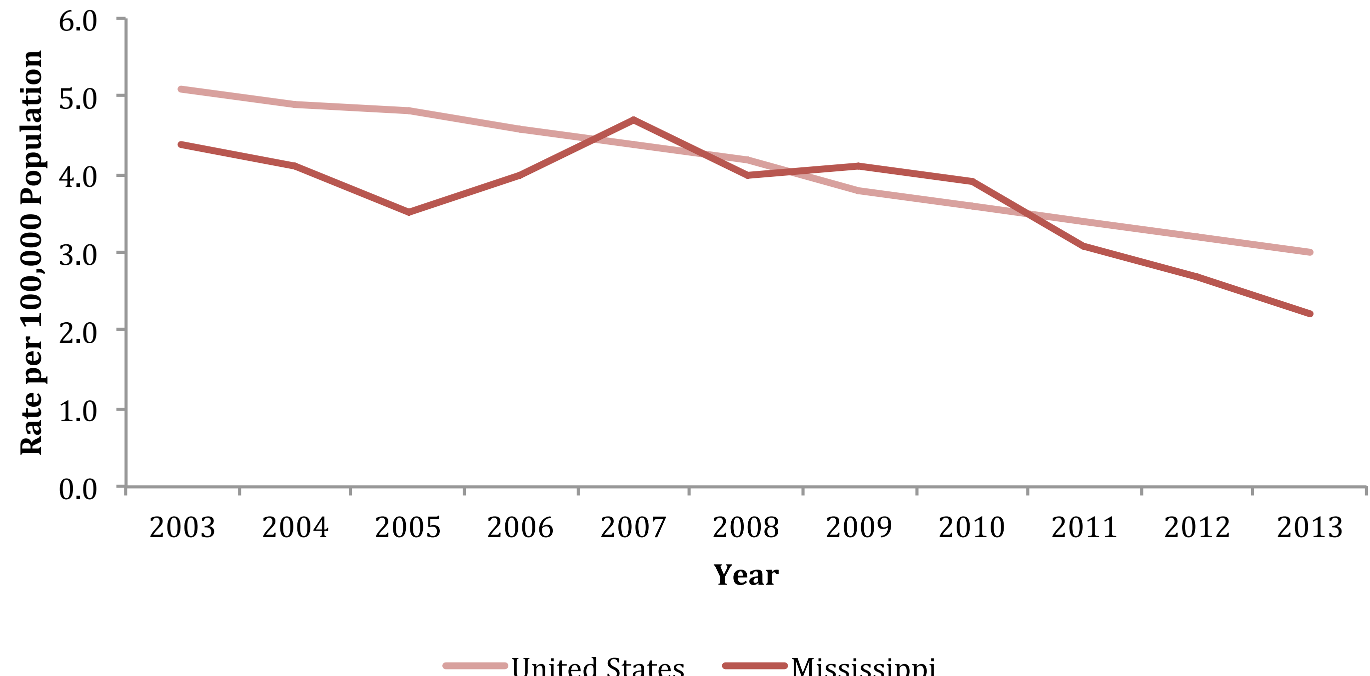
Tuberculosis

Tuberculosis (TB) refers to the number of new, active tuberculosis cases diagnosed each year per 100,000 people. Tuberculosis is a serious, potentially deadly communicable disease that is spread from person to person when sharing the same air. Once infected, the person has a risk of developing TB for the rest of their life. Fortunately, there is treatment that will greatly reduce that risk and if the person develops disease, there is treatment to cure the disease. People that are infected cannot spread TB to others. However, if that person progresses from infection to disease, they are then likely to infect other people and continue the spread of TB.

As demonstrated by Figure 45, Mississippi has made good progress in reducing the burden of new cases and maintaining one of the most significant overall downward trends in the U.S. However, TB elimination will not occur without decreasing the number of people who become infected and increasing the number of people who complete treatment once infected.

More than half of TB cases in Mississippi occur in persons between 25 and 64 years of age making TB in the workplace an ongoing concern. The majority of the remaining cases occur in persons over 64 years of age. Approximately 60% of new cases occur in black residents, and 30% in white residents. TB occurs more often in men. Access to medical care, life-style, community context and social environment are factors influencing the spread and control of TB. As numbers decrease, controlling TB will become increasingly challenging because knowledge and expertise in TB management will diminish due to reduced experience in managing TB.

Figure 45. Tuberculosis Rates by Year, United States and Mississippi



Source: MSTAHRS, 2003-2012 Age-Adjusted Rate (2000 U.S. Population)

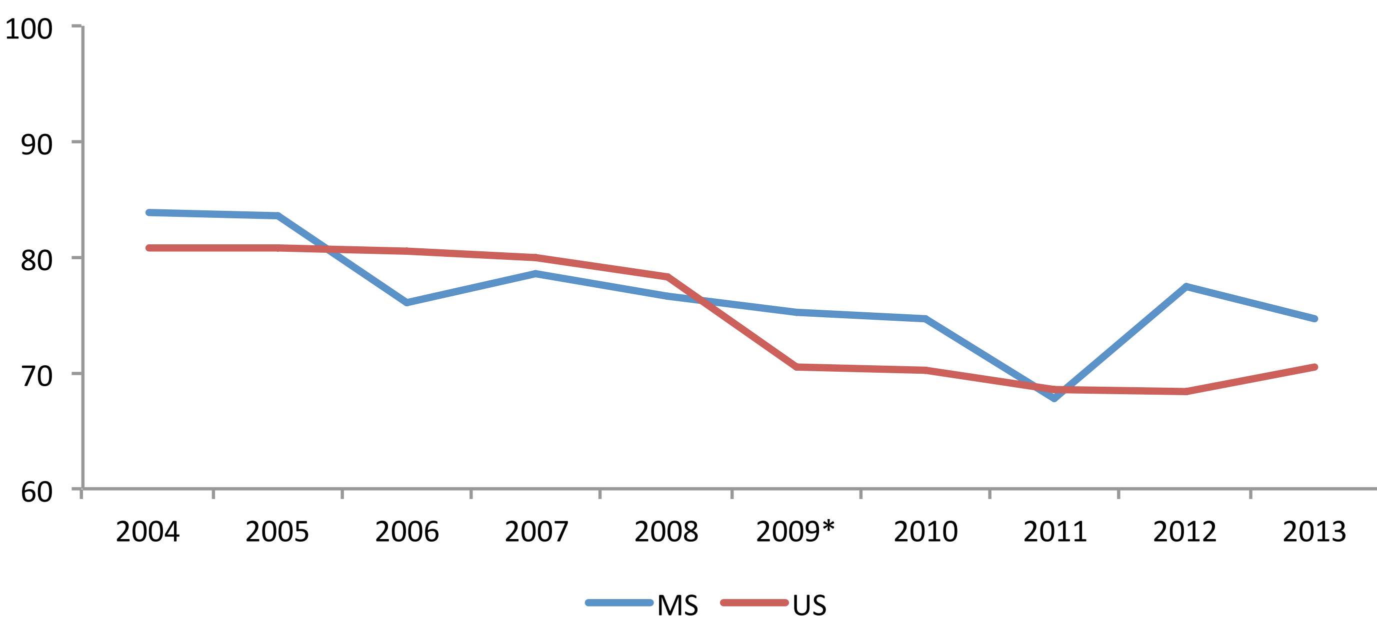
Immunizations

Childhood Immunizations

The control of vaccine preventable diseases has been one of the premier accomplishments of modern public health. For U.S, children born between 1994 and 2013, immunizations have prevented an estimated 322 million illnesses, 21 million hospitalizations and 732,000 deaths. MSDH promotes childhood immunizations in numerous ways: administering the state Vaccines for Children program; administering the Mississippi CHIP vaccination program; providing immunizations at all county health departments; collaborating with private, rural health and FQHC clinics; and promoting the ACIP recommended practices for childhood immunizations.

The National Immunization Survey is a CDC assessment of vaccination status among children 19 to 35 months of age and currently evaluates the proportion of children fully immunized for pertussis, diphtheria, tetanus, measles, mumps, rubella, polio, varicella, hepatitis B, *Haemophilus influenzae* type b and *Streptococcus pneumoniae*. Since 2009, Mississippi's immunization rate in this age group has been near or above the national average (Figure 46). MSDH has been a national leader in childhood immunizations for school entry, ranking first in the nation in 2014, with >99.7% of children entering kindergarten fully immunized.

Figure 46. Vaccination Coverage Among Children 19-35 Months, by Year, Mississippi and United States



Source: CDC National Immunization Survey

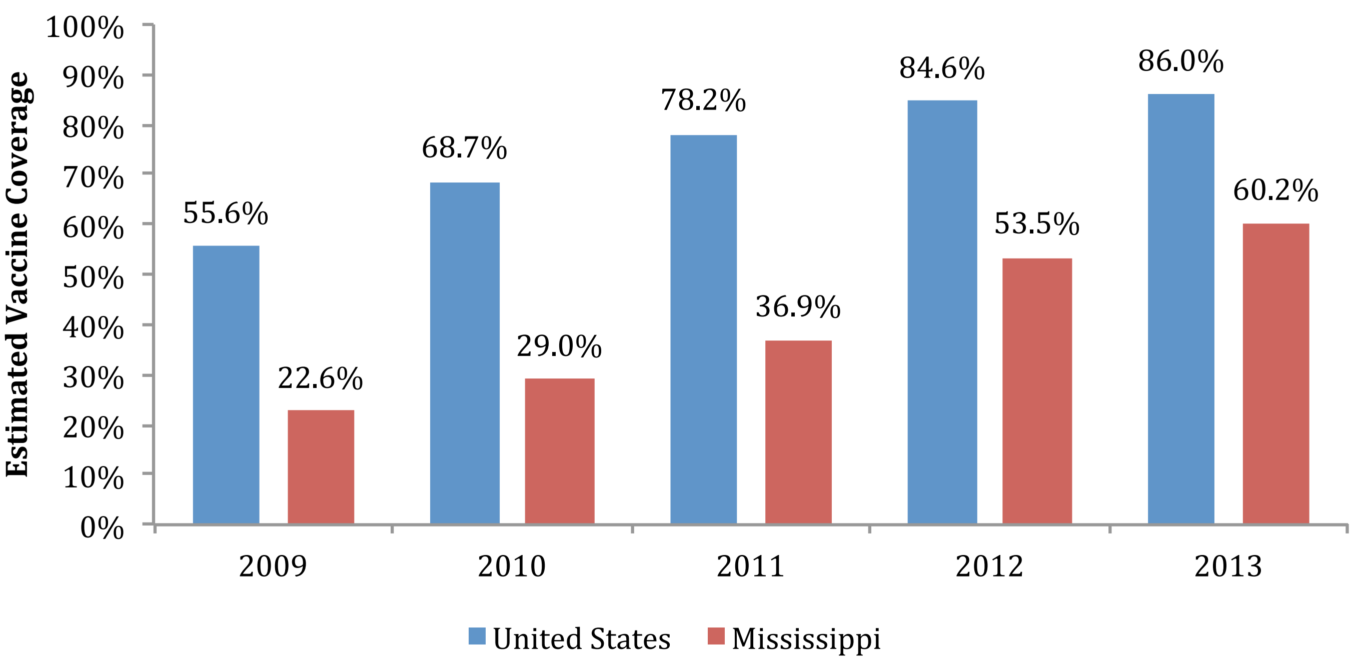
Pertussis and Tdap

Pertussis ("whooping cough") immunity typically wanes 5-10 years after the childhood booster vaccination, leaving adolescents vulnerable to infection. Adolescents can then serve as a source of infection in children <1 year of age who have not yet been completely vaccinated against pertussis. In 2005 the Advisory Committee on Immunization Practices (ACIP) first recommended the Tdap booster (tetanus, diphtheria, and pertussis containing vaccine) for all adolescents aged 11-18 years.

In Mississippi, there was a large outbreak of pertussis in 2007, when 256 cases were reported. The number of cases trended down over the next several years with 49 reported cases of pertussis and no deaths in 2011. In 2012 the number increased to 77 reported cases with one pertussis-related death in a child <1 year of age.

In 2012 Mississippi joined 41 other states in instituting a requirement for Tdap among adolescents. All students entering 7th grade are required to have documentation of Tdap vaccination at seven years of age or older. This includes new, current and transfer students in both private and public schools. Mississippi has seen a steady improvement in the adolescent immunization rate, increasing from 19.6% in 2008 to 60.2% in 2013, but is still below the national average.

Figure 47. Estimated Adolescent Tdap Vaccine Coverage, United States and Mississippi, 2009-2013



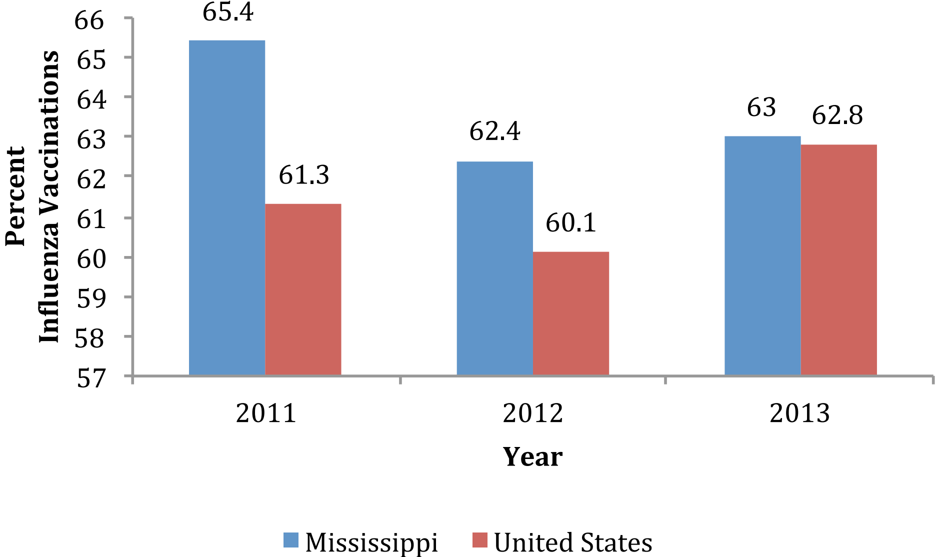
Source: CDC National Immunization Survey

Older Adult Influenza Vaccinations

Adults 65 years or older, especially those with underlying health conditions, are at greater risk of serious complications from the flu, compared with young, healthy adults. Individuals from this age group have the highest rates of hospitalization and on average account for 90% of influenza-associated deaths each year. Figure 48 indicates that 63% of older adults received a flu shot in 2013 which is relatively consistent with 65.4 in 2011 and 62.4 in 2012. Mississippi's coverage rates for 2013 are slightly above the national average of 62.8 for influenza vaccination in this population.

Annual influenza vaccination is the best protection for preventing influenza virus and its complications. Recommendations for all persons to get a flu shot is an ongoing educational effort, but especially among those at highest risk for complications.

Figure 48. Influenza Vaccination Rate, Adults Aged 65 and Older



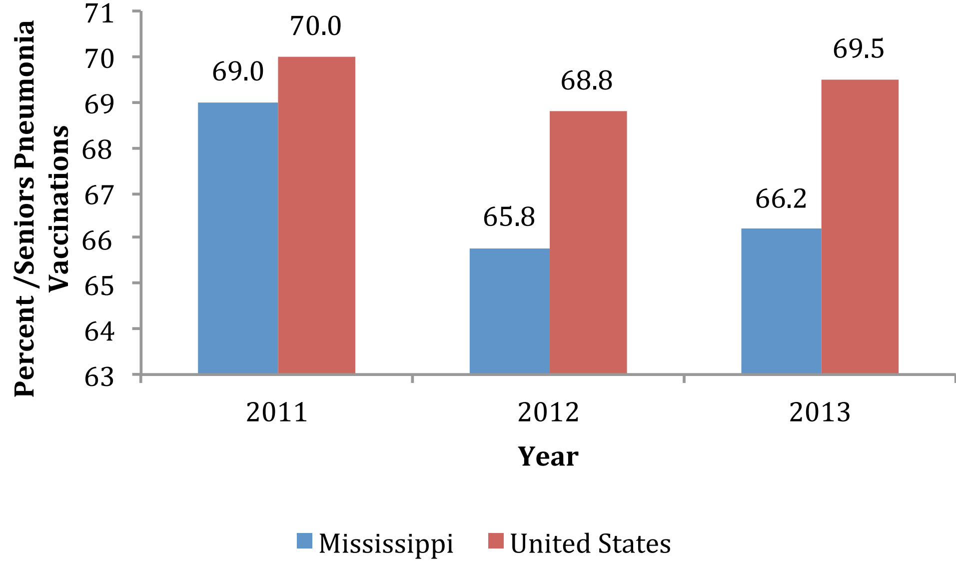
Source: Behavioral Risk Factor Surveillance System (BRFSS) 2011-2013

Older Adult Pneumonia Vaccinations

Pneumococcus is a deadly bacterial disease that causes pneumonia, blood stream infection and meningitis. This germ is responsible for approximately 900,000 cases of pneumonia, 12,000 cases of blood stream infection and 3,000 cases of meningitis in the U.S. annually. Blood stream infections alone caused about 3,300 deaths in Americans in 2012. Fortunately effective vaccines are available that protect against pneumococcus. Due to the high attack rate among older adults, the pneumococcal vaccine is recommended for everyone over 65 years of age.

As demonstrated in Figure 49, a majority of Mississippians over 65 report receiving a pneumococcal vaccine. Compared to national data, Mississippi trailed slightly in 2013 with 66.2% of Mississippi older adults receiving this recommended protection and 69.5% nationally.

Figure 49. Pneumonia Vaccination Rate, Adults Aged 65 and Older



Source: BRFSS 2011-2013

Chronic Disease Risk Factors

Behavioral Risk Factors

Fruit and Vegetable Consumption

Fruits and vegetables contribute important nutrients to the human body. Eating fruits and vegetables lowers the risk of developing many chronic diseases and can also help with weight management. Creating greater access to quality and affordable fruits and vegetables is an important step to increase fruits and vegetables consumption. When state leaders, health professional, food retail owners, farmers, education staff, and community members work together, more Mississippians can live healthier lives.

Adults in the United States consume fruit about 1.1 times per day and vegetables about 1.6 times per day. Only about 70% of all census tracts in this country currently have at least one store that offers a wide variety of fruits and vegetables. The following table compares Mississippi with national data for both adults and adolescents.

Table 8. 2013 Fruit and Vegetable Consumption

Report on Fruits and Vegetables, 2013: Behavioral Indicators								
	Adults				Adolescents			
	Percentage who report consuming fruits and vegetables less than one time per day		Median intake of fruits and vegetables (times per day)		Percentage who report consuming fruits and vegetables less than one time per day		Median intake of fruits and vegetables (times per day)	
	Fruits	Vegetables	Fruits	Vegetables	Fruits	Vegetables	Fruits	Vegetables
Mississippi	50.8	32.3	0.9	1.4	39.8	42.4	1.0	1.1
U.S. National	37.7	22.6	1.1	1.6	36.0	37.7	1.0	1.3

Sources: BRFSS 2011 and YRBS 2011

The following table compares Mississippi and national data using policy indicators of support for fruit and vegetable consumption.

Table 9. Policy and Environmental Indicators of Fruit and Vegetable Availability

Category	Report on Fruits and Vegetables, 2013: Policy and Environmental Indicators	U.S.	MS
Healthier Food Retail In Communities	Percentage of census tracts with at least one healthier food retailer within 1/2 mile of tract boundary	69.5	61.5
	States with healthier food retail policy	10	No
	Number of farmers markets per 100,000 residents	2.5	2.5
	Percentage of farmers markets that accept SNAP benefits	21.0	26.7
	Percentage of farmer markets that accept WIC Farmers Market Nutrition Program coupons	25.8	3.3
	States that authorize farmers to accept WIC Cash Value Vouchers	19	No

Category	Report on Fruits and Vegetables, 2013: Policy and Environmental Indicators	U.S.	MS
Schools, Child Care, and Early Education	Percentage of middle/high schools that offer fruits or vegetables at celebrations	33.6	33.3
	States with child care regulations that align with national standards for serving fruits/vegetables	10 / 4	Yes/Yes
	States with farm to school/preschool policy	28	No
Food System Support	Number of food hubs	213	2
	Percentage of cropland acreage harvested for fruits and vegetables	2.5	0.8
	States with state-level food policy council	27	Yes
	Number of local food policy councils	150	0

Source: http://cdc.gov/nutrition/professionals/data, May 2013

There are no indicators to determine fruit and vegetable consumption for preschool age children. However, Mississippi requires one fresh vegetable and two fresh fruits be served weekly in all licensed early childhood centers licensed by the state. Fruit juice is limited to once daily and is not served to infants. The use of starchy, high carbohydrate vegetables is also limited to one serving per meal. These regulations are actually stricter than the national standards.

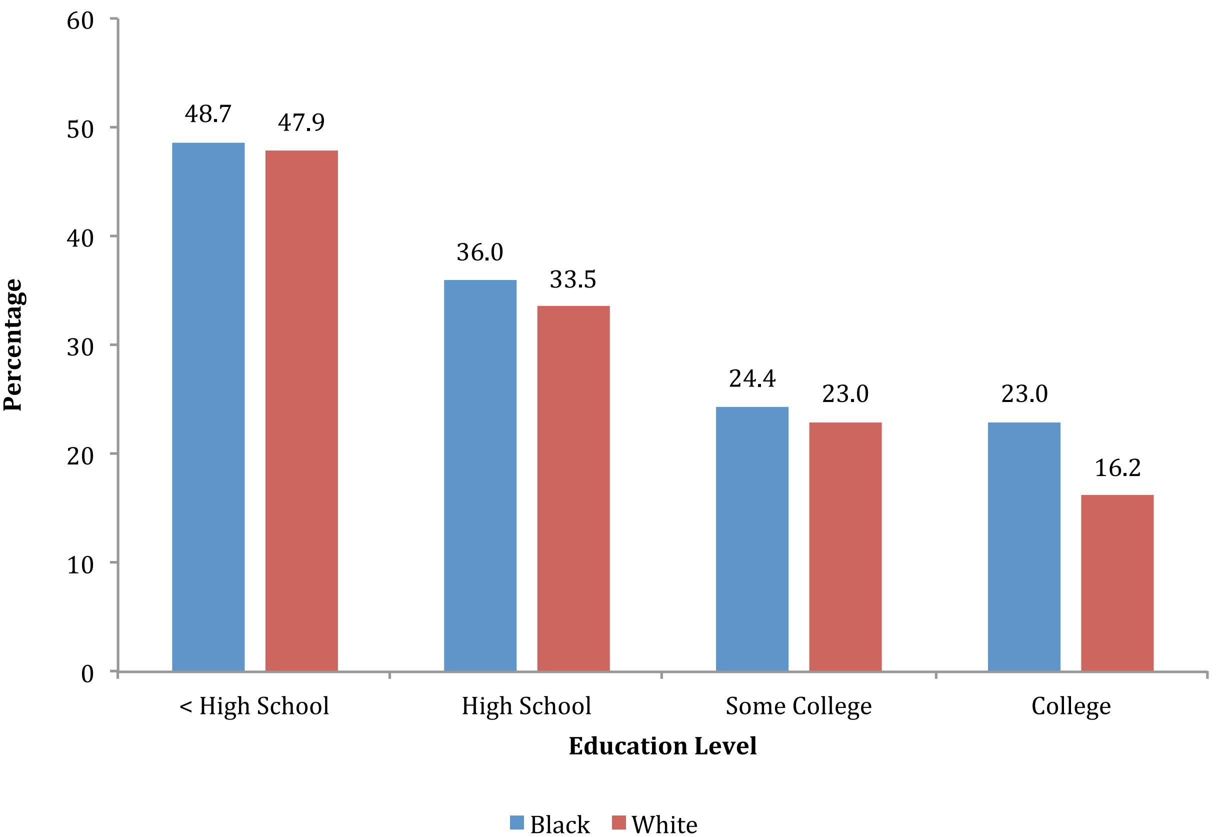
Physical Activity

On average, physically active people outlive those who are inactive. Regular physical activity helps to maintain the functional independence of older adults and enhances the quality of life for people of all ages. Physical activity plays an important role in controlling obesity. The role of physical activity in preventing coronary heart disease is of particular importance, given that coronary heart disease is the leading cause of death and disability in the United State and Mississippi. It also reduces the risk of colon cancer, stroke, type two diabetes and its complications and osteoporosis. It is recommended that adults get 150 minutes of physical activity per week.

Physically inactive people are almost twice as likely to develop coronary heart disease as persons who engage in regular physical activity. The risk posed by physical inactivity is almost as high as several well-known coronary heart disease risk factors such as cigarette smoking, high blood pressure and high blood cholesterol. Physical inactivity is more prevalent than any other of these risk factors.

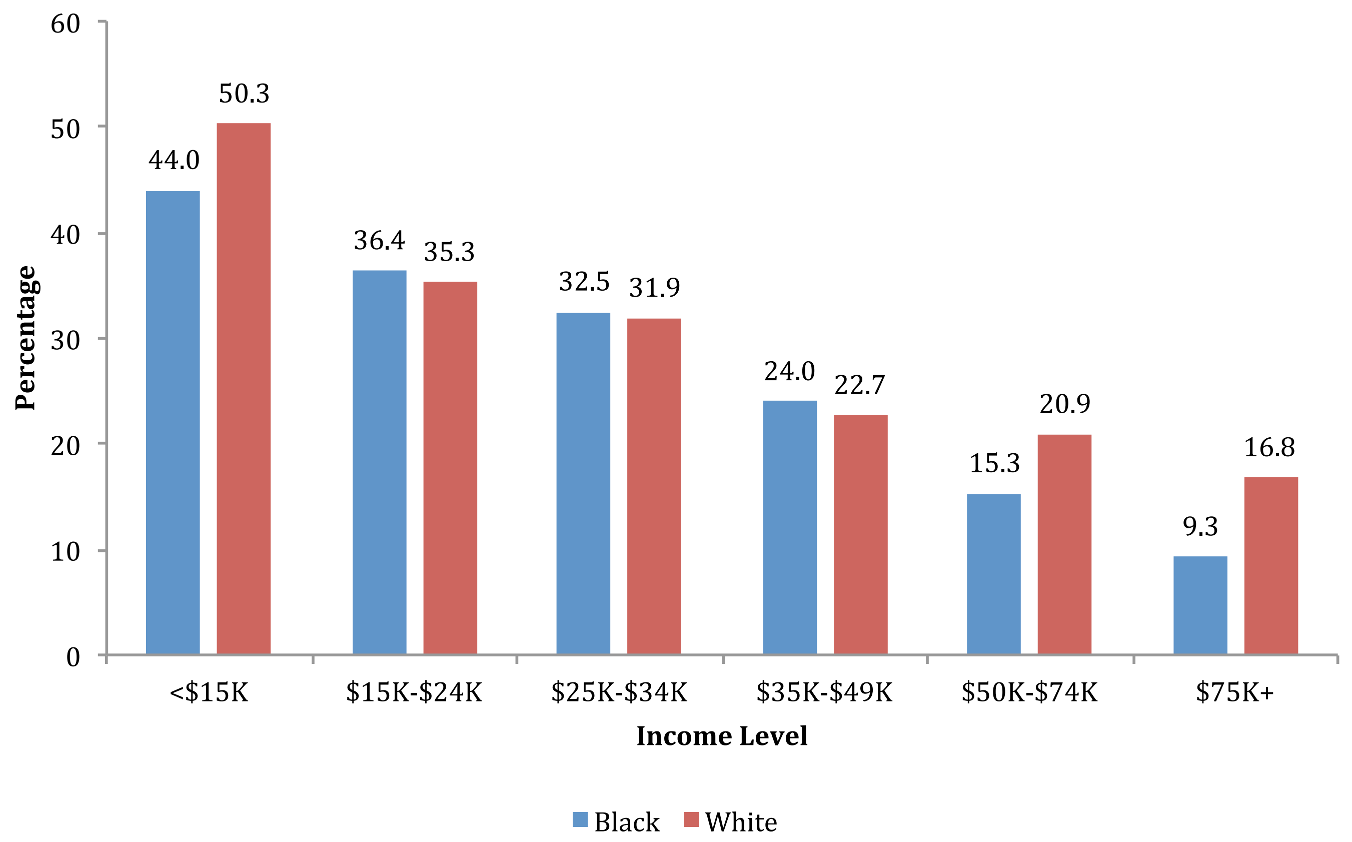
In 2013, 38.1% of Mississippians indicated no physical activity during the past 30 days. The median percentage nationally was much lower (25.3%). Mississippians with less education and in lower income levels reported the highest percentage of physical inactivity.

Figure 50. Percentage of Mississippians Reporting No Physical Activity Over Past 30 Days by Race and Education



Source: BRFSS Mississippi 2012

Figure 51. Percentage of Mississippians Reporting No Physical Activity Over Past 30 Days by Race and Income



Source: BRFSS Mississippi 2012

Tobacco Use

Self-reported data from the Behavioral Risk Factor Surveillance Survey (BRFSS) from 2013 showed Mississippi to be the fifth highest among the 50 states and Washington, D.C. for smoking prevalence among adults, with 24.8% of adults reporting that they smoke. The national average for 2013 was 19%. The Healthy People 2020 goal for adult smoking prevalence is less than 12%. In Mississippi, smoking is most prevalent among black males, followed by white males, white females, and black females. Most smokers in Mississippi have annual household incomes less than $24,999 and have not completed high school (MS BRFSS data, 2012).

The Surgeon General's 2014 *Health Consequences of Smoking Report* documented a direct correlation between nicotine exposure during pregnancy and preterm birth, low birth weight, and stillbirth. Mississippi consistently has one of the highest infant mortality rates (IMRs) in the nation. In 2012, the MS IMR was 8.8 deaths per 1,000 live births. A disparity between white (7.2 deaths/1,000) and black IMRs (14.8 deaths/1,000) exists, with black infants twice as likely to die before their first birthday.

Although Mississippi Pregnancy Risk Assessment and Monitoring System (PRAMS) data from 2009 – 2011 show a decline in cigarette use during pregnancy, 16.6% of pregnant white women and 5.8% of black women used cigarettes during pregnancy. Many women continue smoking after childbirth. Evidence shows a link between environmental cigarette smoke and Sudden Infant Death Syndrome (SIDS), asthma, chronic otitis media, and chronic upper respiratory infections. The Surgeon General's report of 1986 stated there is no safe level of exposure to secondhand smoke.

Adults in Mississippi with less than a high school education are at great risk for being a current smoker and subsequently bearing the associated health burdens. Almost 36% of all adults in Mississippi with less than a high school education are current smokers. The February 2013 edition of CDC's *Vital Signs* reported that over a third of all adults with mental illness smoke cigarettes compared to 21% of adults without mental illness (USDHHS, 2013). The 2012 National Survey on Drug Use and Health estimates that 20.27% of Mississippians (approximately 587,830) have a mental illness, with 18.19% as the national average (NSDUH, 2014).

Similarly, Mississippi 2013 BRFSS data indicate that 19.1% of Mississippians (approximately 551,000) answered yes to the question, "Have you ever been told that you have a depressive disorder, including depression, major depression, dysthymia, or minor depression?" The U.S. average for this question was 17.6%. Thirty-six percent of Mississippians with mental illness smoke cigarettes compared to 21% smoked by those without mental illness. Sixty-eight percent of smokers with mental illness have tried to quit smoking in the past year. According to the 2011 National Health Interview Survey from the National Center on Birth Defects and Developmental Disabilities, 25.4% of adults with disabilities smoke verses 17.3% without a disability. Data from the Mississippi 2013 BRFSS report a smoking prevalence of 31.3% among the disabled verses 21% for adults without disabilities.

Tobacco Use Among High School Students

The Mississippi Youth Risk Behavior Survey (YRBS) measures the prevalence of behaviors (including tobacco use) that contribute to the leading causes of morbidity and mortality among youth. The 2013 Mississippi YRBS was completed by 1,584 students in 34 Mississippi public high schools during the fall of 2013. All Mississippi public high schools containing grades 9-12 were included in the sampling frame. The overall response rate was 80%. The results represent all students in grades 9-12.

The YRBS data reveal that Mississippi youth have a higher prevalence of tobacco use than the national average. White, male youth in Mississippi have a very high prevalence of cigarette use and smokeless tobacco use. White, Mississippi females have a very high prevalence of cigarette usage. Both white and black males have a high prevalence of cigar use. All Mississippi youth tobacco use prevalence rates exceed Healthy People 2020 targets for youth. These high, youth prevalence rates require significant, targeted counter marketing and educational efforts to reduce tobacco use within this population.

Table 10. Percentage of Youth Using Tobacco

Group	Currently Smokes Cigarettes*	Uses Smokeless Tobacco	Uses Cigars
U.S. Youth	15.7	8.8	12.6
MS Youth	17.2	10.3	13.6
MS White, Male Youth	27.2	29.5	15.7
MS White, Female Youth	24.8	2.1	12.2
MS Black, Male Youth	8.2	8.1	16.1
MS Black, Female Youth	9.0	1.7	9.6

*"Currently smokes cigarettes" is defined by the YRBS as smoking at least one cigarette during the 30 days prior to the survey.
Source: YRBS 2013

YRBS data indicate that about 41% of high school students nationally have ever tried cigarette smoking where in Mississippi 46% of Mississippi youth in high school have ever tried a cigarette.

Alcohol Abuse

Alcohol use has been linked with a substantial proportion of injuries and deaths from motor vehicle crashes, falls, fires and drowning. It also is a factor in homicide, suicide, marital violence, and child abuse and has been associated with high-risk sexual behavior. During 2012, males reported binge drinking (five or more drinks on one occasion during past 30 days) 2.5 times higher than females. Adults aged 18 to 24 reported the highest rate of binge drinking of any age group, at 20.8%. Approximately 85,000 deaths each year in the United States have been attributed to alcohol abuse. Alcohol abuse is strongly associated with injuries, violence, fetal alcohol syndrome, chronic liver disease, and risk of other acute and chronic health effects. The Healthy People 2020 target is 24.4%. Variation exists throughout the state and among the nine Public Health Districts. The following table reflects the differences seen from BRFSS 2012.

Table 11. Percentage at Risk Because of Binge Drinking by Public Health District and Race

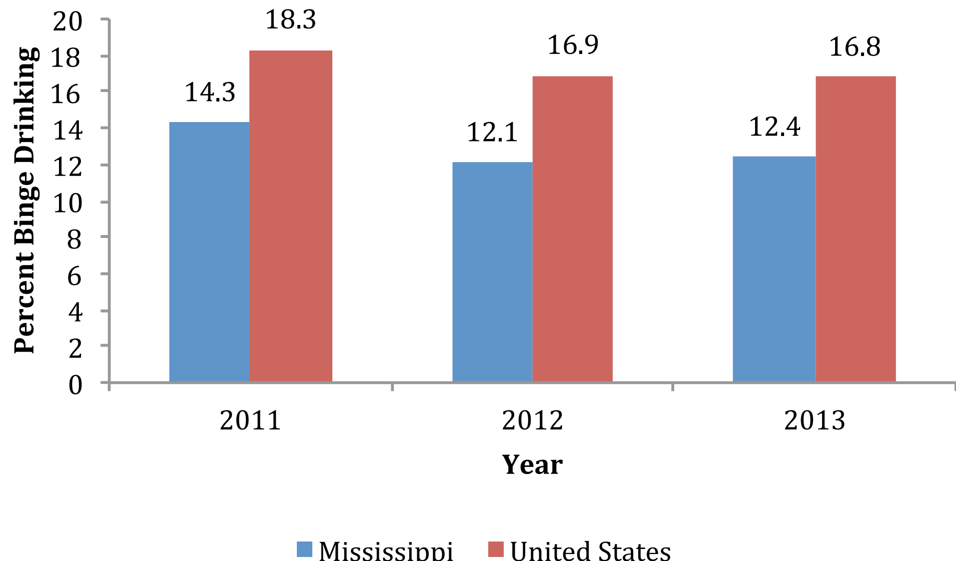
	District I	District II	District III	District IV	District V	District VI	District VII	District VIII	District IX	State Total
White	20.4	20.4	7.0	12.3	13.8	10.5	8.7	7.7	14.1	12.4
Black	9.9	9.9	14.9	12.3	11.2	11.7	7.1	20.2	9.3	11.7
Total	15.9	15.9	11.6	12.4	12.2	11.0	8.1	11.4	13.7	12.1

Source: BRFSS, 2012

The highest percentage was among whites in District I (20.4%) and blacks in District VII (20.2%), whereas the lowest percentage was whites in District III (7.0%) and blacks in District VII (7.1%). The overall percentage range was 8.1% in District VII to 15.9% in District I.

The overall percentage reporting binge drinking during the past 30 days for 2012 is 12.1% compared to the U.S. at 16.9% (median). As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from lower telephone coverage among populations of low socio-economic status, refusal to participate in the survey or to answer specific questions, or remembering information about the indicator.

Figure 52. Percentage Reporting Binge Drinking Over Past 30 Days



Source: BRFSS, 2011-2013

Intimate Partner Violence

One set of behaviors that is particularly damaging to health is intimate partner violence. While data about intimate partner violence is difficult to obtain due to the fear of coming forward that many victims have. Women who suffer from intimate partner violence are statistically more likely to contract HIV or another STI due to forced intercourse or prolonged exposure to stress. Additionally, there is relationship between intimate partner violence and depression and suicidal behavior.[18] Intimate partner violence can also have a profound impact on a person's risk of developing a chronic disease. A study of 2005 BRFSS data showed that for women and men, a history of nonconsensual sex was linked with high, cholesterol, stroke, and heart disease.[19] Based on 2013 YRBS data, of Mississippi teens in relationships over the previous year, 10.4% reported that they had experienced sexual dating violence, including kissing, touching, or being physically forced to have sexual intercourse when they did not want to. An estimated 1 in 3 women and 1 in 4 men will experience some form of physical violence by an intimate partner in their lifetime.[20] Clearly intimate partner violence is capable of posing a severe threat to the physical, mental, and emotional health of Mississippians.

Though there is no centralized record of all intimate partner violence occurring within Mississippi, data from state-funded domestic violence shelters and rape crisis centers can provide partial information about intimate partner violence. During the 2014 Fiscal Year, Mississippi's domestic violence shelters housed 2,020 women, men and children, and provided services to an additional 1,442 people. 46% of those sheltered identified as white, 49% identified as black, and 3% identified as Hispanic or Latino. 61% of women who were provided shelter had an annual family income of less than $5,000. Only 5% of those given shelter had a family income greater than $30,000. Sexual assault crisis centers provided assistance to 410 adult sexual assault victims (35 males and 375 females) and 419 children (93 males and 326 females). Services were also provided to 241 female adult survivors of child sexual abuse and 3 male adult survivors or child sexual abuse.[21] Because many cases of intimate partner violence and sexual abuse go unreported, these figures only provide a small glimpse of the extent of the problem.

18 World Health Organization. (2013). *Global and Regional Estimates of Violence Against Women, Prevalence and Health Effects of Intimate Partner Violence and Non-partner Sexual Violence*.

19 Smith, S., Fowler, K., & Niolon, P. (2014). Intimate Partner Homicide and Corollary Victims in 16 States: National Violent Death Reporting System, 2003-2009. *American Journal of Public Health*, 104(3).

20 Black, M.C., Basile, K.C., Breiding, M.J., Smith, S.G., Walters, M.L., Merrick, M.T., Chen. J., & Stevens, M. (2011). *The National Intimate Partner and Sexual Violence Survey: 2010 Summary Report*. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

21 Mississippi State Department of Health Office Against Interpersonal Violence

Disease Risk Factors

Diabetes

While diabetes is a health outcome in itself, it also serves as risk factor for numerous health conditions. In 2012, the prevalence of self-reported diabetes among adults was higher in Mississippi (12.5%) than the U.S. average (9.7%). The prevalence of diabetes decreases as educational attainment increases. Among those without a high school diploma, 16.1% self-report diabetes, while 9.9% of those who pursued education beyond high school self-reported diabetes. There is a similar trend related to income (as measured against the federal poverty level (FPL)); the higher the household income, the lower the self-reported diabetes prevalence. In 2012, 18.8% of those making between 0% and 99% FPL reported having diabetes, while 7.7% of those with income greater than 300% FPL self-reported diabetes.

By race and gender, in 2012, black residents and females were the two groups with the highest prevalence of diabetes. Among black females, 17.6% self-reported diabetes. The second highest group reporting diabetes was black males; 14.2% of this group reported diabetes. Among other Mississippi groups in 2012, 9.3% of white females and 10.1% of white males reported diabetes.

These data are self-reported and likely underestimate the actual prevalence of diabetes due to the fact that many cases of diabetes remain undiagnosed.

Obesity

According to the Centers for Disease Control and Prevention (CDC), more than half of all Americans live with a preventable chronic disease, and many such diseases are related to obesity, poor nutrition and physical inactivity. Adult obesity in Mississippi has increased dramatically over the past 15 years and is expected to increase significantly in the next 20 years.[22] Overweight is defined as having a body mass index (BMI) that is 25 or higher. Obesity is defined as having a BMI that is 30 or higher. According to *The State of Obesity: Better Policies for a Healthier America,* Mississippi now has the highest adult obesity rate in the nation. Mississippi's adult obesity rate is 35.1 percent, up from 28.1 percent in 2004 and from 15.0 percent in 1990. *The F as in Fat: How Obesity Threatens America's Future 2012*, a report from Trust for America's Health and the Robert Wood Johnson Foundation, Mississippi's obesity rates could reach 66.7 percent by 2030.

Over the past 30 years, adult obesity rates have sharply risen, doubling since 1980. Today, that rate of increase is beginning to slow. There is increasing evidence that obesity rates are stabilizing for adults and children—but the rates remain very high, putting millions of Americans at risk for increased health problems. Rates of severe obesity (a BMI greater than 35) are continuing to increase in adults, and more than one-in-ten (8.4%) children becomes obese as early as ages of 2 to 5. In 2005, every state but one reported an increase in obesity rates; this past year, only six states (including Mississippi) experienced an increase. In 1980, no state had an obesity rate above 15 percent; in 1991, no state was above 20 percent; in 2000, no state was above 25 percent; and, in 2007, only Mississippi was above 30 percent. Between 2012 and 2013, six states had increases. Mississippi and West Virginia had the highest rates of obesity at 35.1 percent, while Colorado had the lowest rate at 21.3 percent. Nine of the 10 states with the highest rates of obesity are in the South.

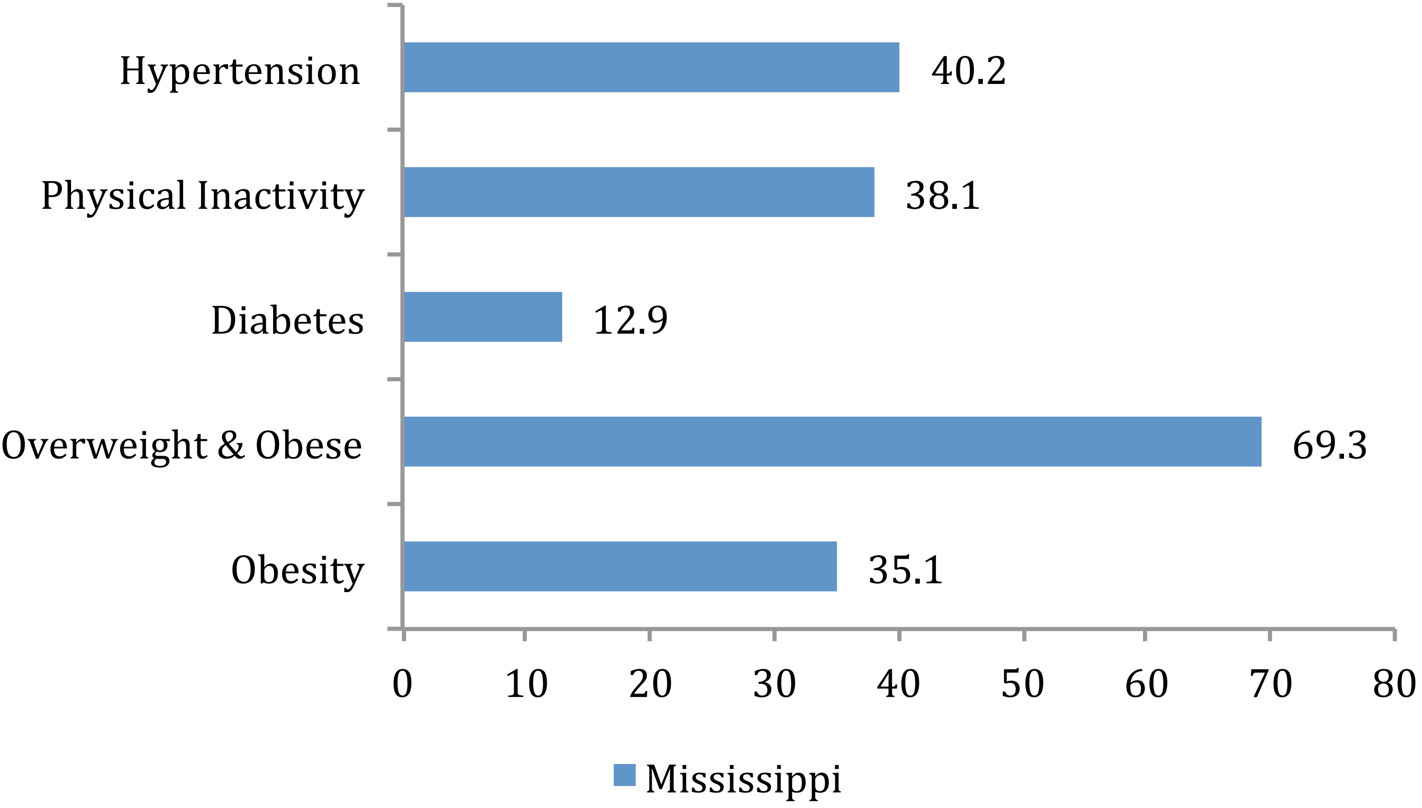
22 *The F as in Fat: How Obesity Threatens America's Future 2011*

This growing epidemic has important consequences on our nation's health and economy. Obesity increases the risk of chronic diseases including heart disease and stroke, high blood pressure, diabetes, certain cancers, osteoarthritis, and gall bladder disease and gall stones.

Reports suggest over the next 20 years, Mississippi's obesity could contribute to 415,353 new cases of type 2 diabetes, 814,504 new cases of coronary heart disease and stroke, 751,568 new cases of hypertension, 487,642 new cases of arthritis, and 111,069 new cases of obesity related cancer.[23]

The following chart shows self-reported obesity and overweight rates and related health indicators for Mississippi for 2013.

Figure 53. Adult Obesity and Overweight Rates and Related Health Indicators for Mississippi (2013)



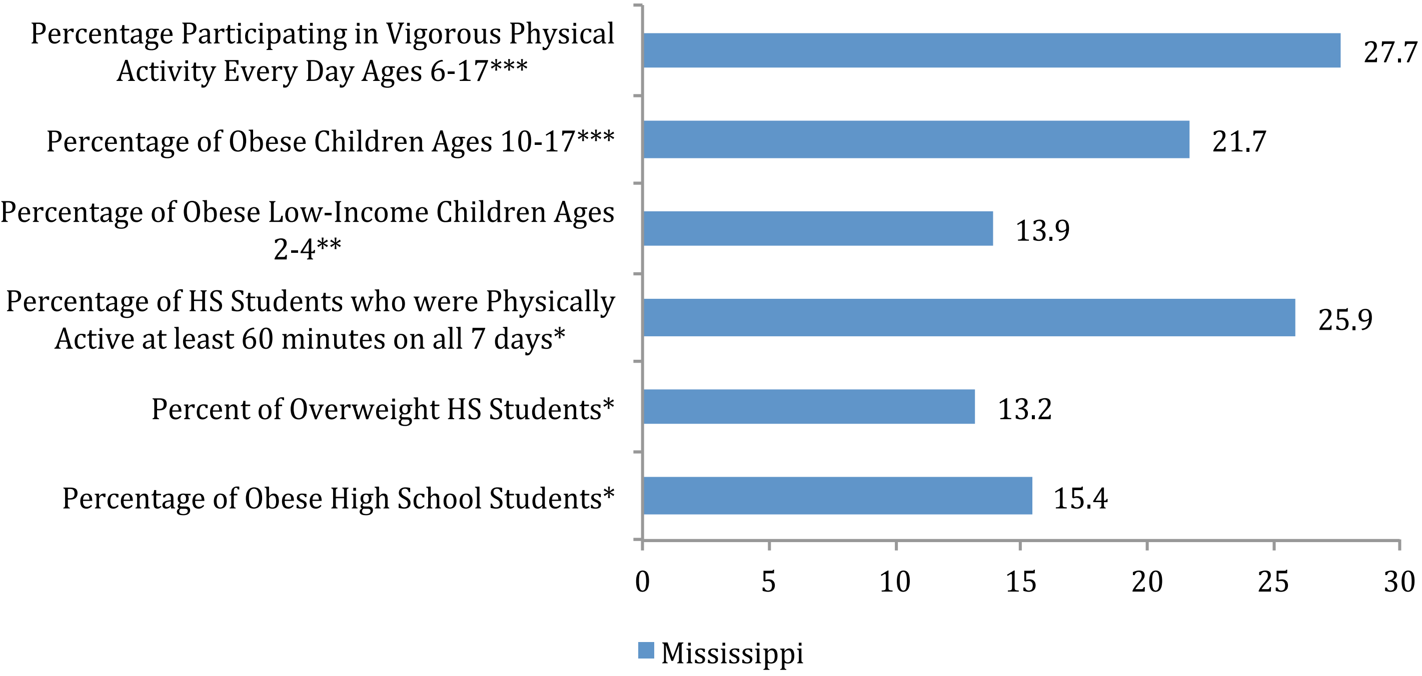
Source: BRFSS 2013

Obesity is also affecting children. Forty percent of Mississippi children are overweight or obese. High rates of obesity in Mississippi cause great concern because overweight children have an eighty percent chance of becoming overweight or obese adults. According to the Youth Risk Behavior Survey (YRBS) 2013 data, a total of 18,749 (15.4%) Mississippi public high school students were obese. The devastating impact of childhood obesity on the lives of children living in Mississippi is compounded by high rates of poverty, low rates of family educational attainment and historical social and political challenges. A direct result of the obesity epidemic, health care professionals are seeing a significant rise in chronic illness in children.

23 *Ibid.*

Obese children are more than twice as likely to have type 2 diabetes as children of normal weight. If current trends continue, experts warn that one of three American children born in the year 2000 and half of all children from ethnic and racially diverse populations will develop type 2 diabetes during their lifetime.

Figure 54. Children and Adolescent Obesity and Overweight Rates and Related Health Indicators for Mississippi

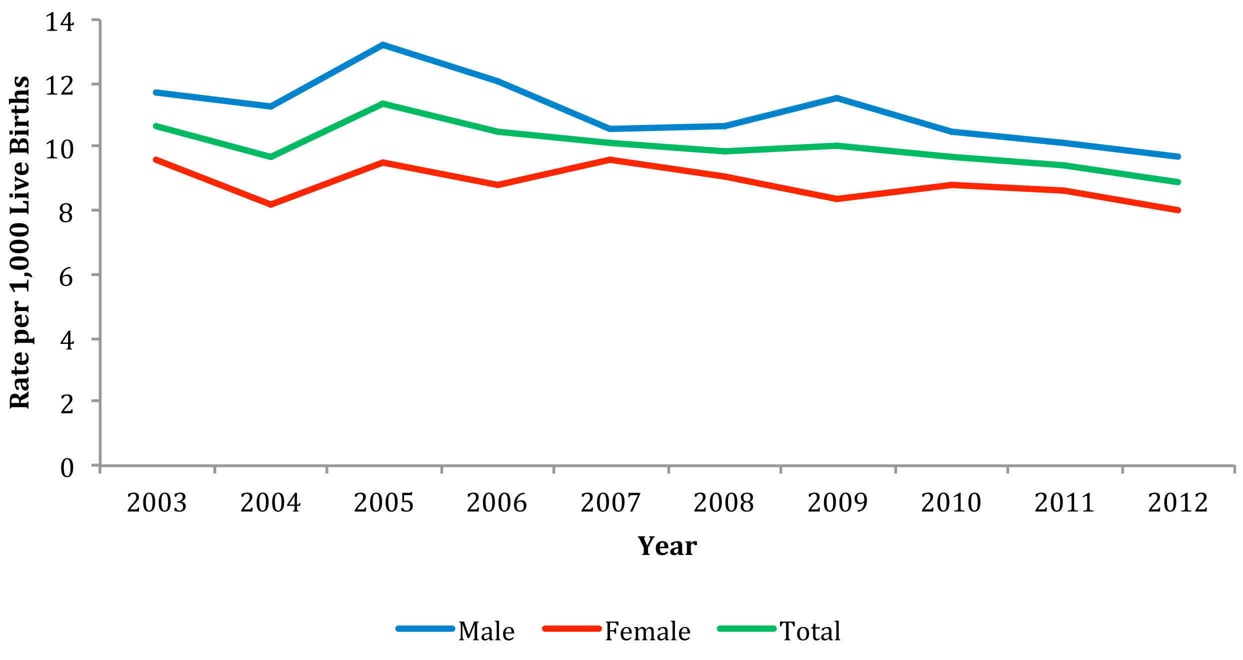


*Sources: *YRBS 2013, **2011 PedNSS, ***2011 National Survey of Children's Health*

Maternal and Child Health

Infant Mortality

Figure 55. Infant Mortality by Gender of Child, Mississippi



Source: MSTAHRS, 2003-2012

Infant mortality is defined as the death of an infant before his or her first birthday, and it is often used when measuring a population's health.[24] Mississippi achieved its lowest infant mortality rate in ten years with 8.8 infant deaths per 1,000 live births in 2012. This was a 6% reduction in infant mortality from 2011 (9.4 per 1,000 live births to 8.8 per 1,000 live births).[25] The number of sudden infant death syndrome (SIDS) deaths were also substantially reduced, showing a 50% decline from 42 SIDS deaths to 21 SIDS deaths.[23] Over time, infant mortality has declined steadily throughout the decade, with a few spikes. The rate has consistently decreased since 2009 (see Figure 55). Although these are noteworthy developments, there are still changes to be made. Mississippi's rates are still much higher than the 2012 U.S. infant mortality rate (5.98 infant deaths per 1,000 live births), and disparities exist within Mississippi's improved rates.[26]

Comparing white infant mortality rates to black infant mortality rates, we find that black infants have much worse outcomes. This disparity also exists nationally. In 2012, Mississippi's black infant mortality rate (12.4 infant deaths per 1,000 live births) was more than two times its white infant mortality rate (5.4 deaths per 1,000 live births). There are also differences by gender, although not as marked. The male infant mortality rate was 9.7 male infant deaths per 1,000 live births compared to 8 female infant deaths per 1,000 live births. Regionally, District III has the highest rates with 11 deaths per 1,000 live births.

24 http://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm

25 http://msdh.ms.gov/msdhsite/_static/23,14393,341,635.html

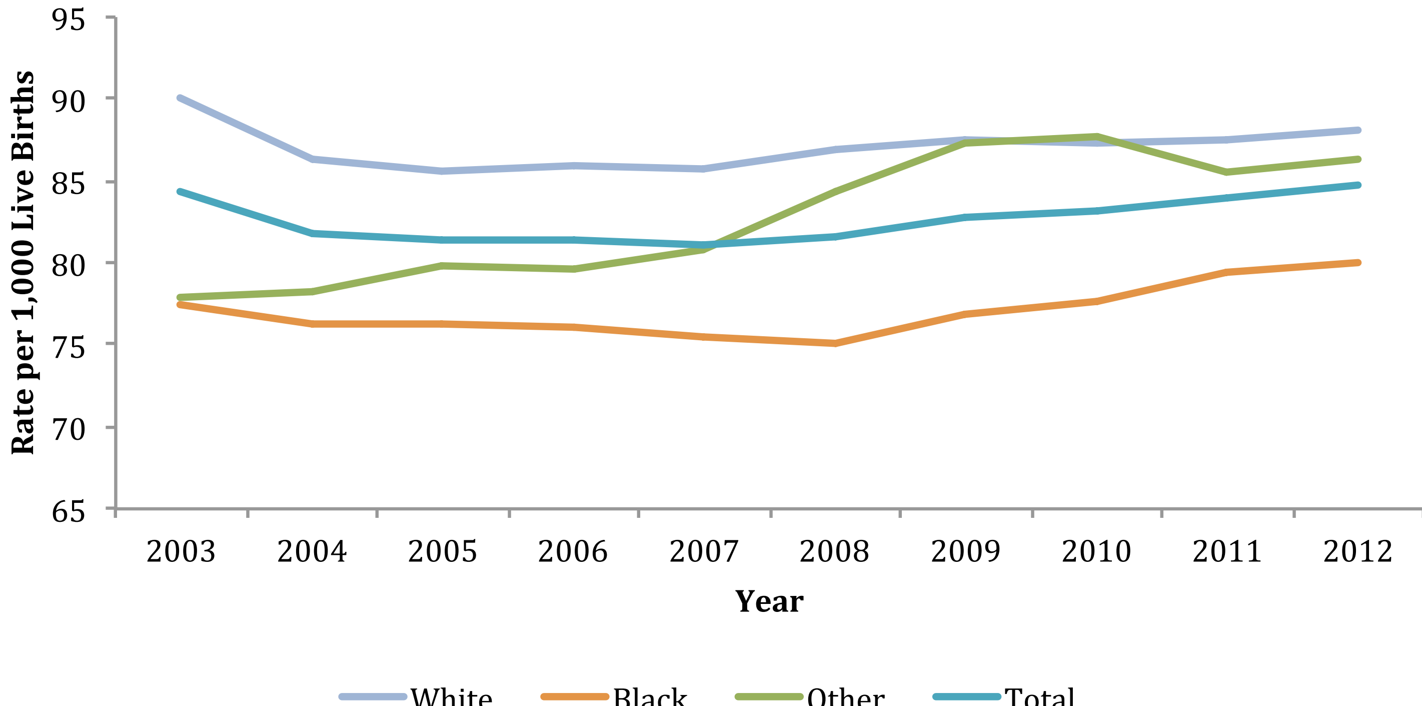
26 http://www.cdc.gov/nchs/data/nvsr/nvsr63/nvsr63_09.pdf

District VI has the lowest rates, with 7.2 deaths per 1,000 live births. It should be noted that there are sample size limitations when measuring infant mortality in smaller populations.

Prenatal Care

Prenatal care is key in preventing morbidity and mortality among mothers and babies. The Health Resources and Services Administration (HRSA) reports that out of over four million births in the United States, almost one third have complications associated with the pregnancy.[27] The risk of complications causing poor outcomes for the mother or baby can be reduced with adequate prenatal care starting in the first trimester.

Figure 56. First Trimester Prenatal Care by Race of Mother, Mississippi



Source: MSTAHRS, 2003-2012

In Mississippi, between 2004 and 2012, the percentage of women receiving prenatal care in the first trimester increased slightly, from 81.4% in 2004 to 84.7% in 2012. Although there are differences by race (80.1% Black vs. 88.2% White in 2012), the overall improvement in prenatal care since 2004 can also be seen across all race/ ethnicity groups. Mississippi's rates exceed the 77.9% benchmark of Healthy People 2020.[28] Examining regions in Mississippi, the best coverage can be found in District VI with over 90% of women receiving prenatal care in the first trimester during 2012. District I had the lowest rates, with 73.3% of women reporting first trimester prenatal care. The self-reported nature of the data is a limitation in it is subject to bias.

27 http://www.hrsa.gov/quality/toolbox/measures/prenatalfirsttrimester/

28 http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives

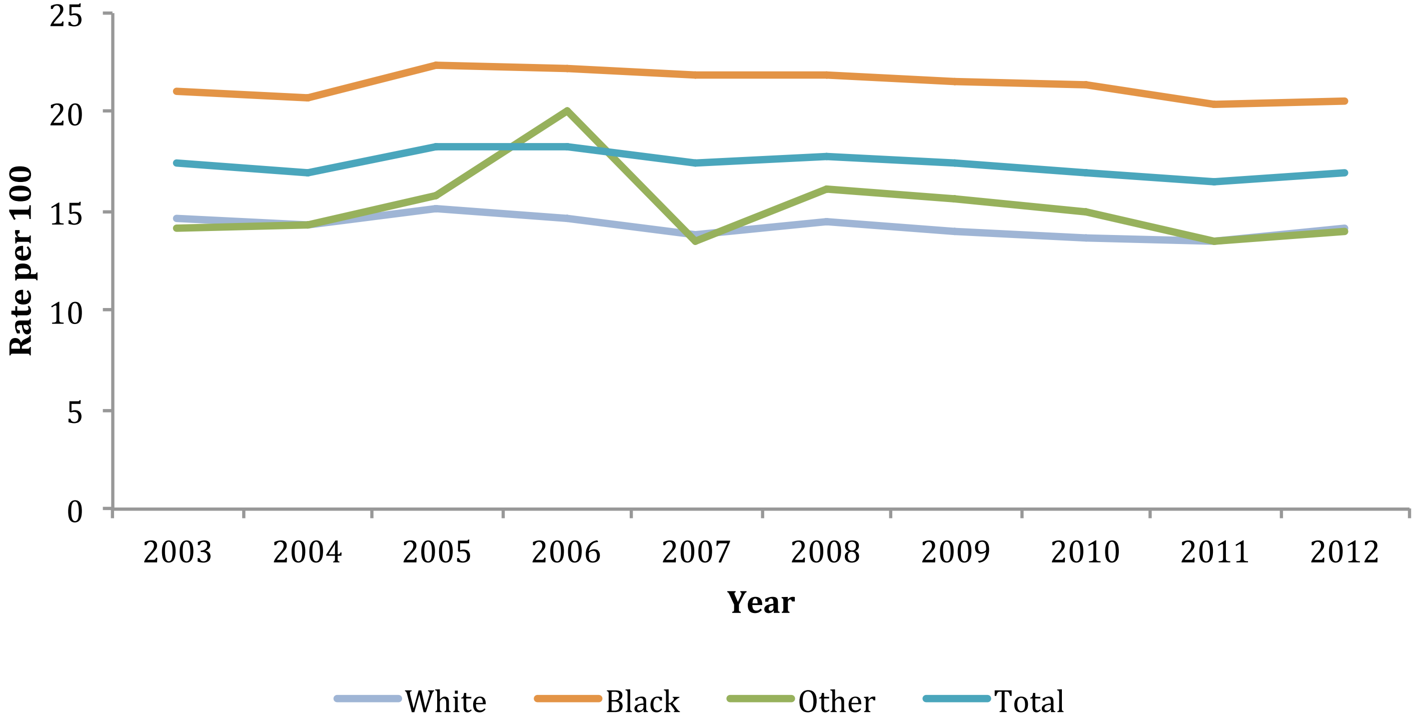
Premature Births

A premature birth is a birth of a baby before 37 weeks of pregnancy. Premature births give babies less time to develop in the womb and result in complicated medical problems, especially among those born earliest.[29]

In 2012, the premature birth rate in Mississippi was 16.9 per 100 births compared to 11.5 per 100 in the U.S. The overall premature birth rate decreased slightly in Mississippi between 2003 and 2012.

In 2012, the premature birth rate for children born to black mothers (20.6 per 100) was substantially higher than for children born to white mothers (14.1 per 100). Mothers aged from 10-14 years had the highest rates of premature birth at 28.9 per 100 births. In 2012 unmarried women (18.9 per 100) tend to have higher rates of preterm births then married women (14.4 per 100).

Figure 57. Premature Birth (<37 Weeks Gestation) by Race of Mother



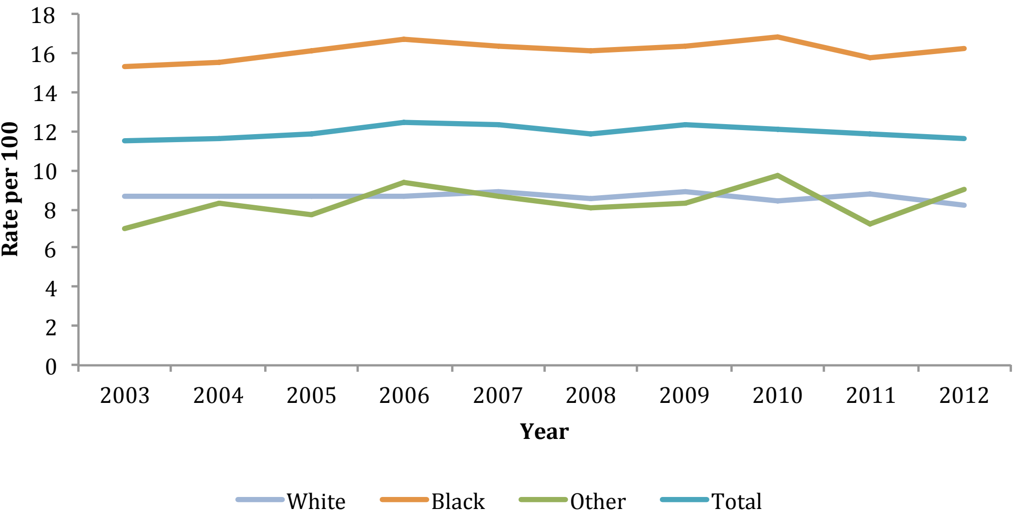
Source: MSTAHRS, 2003-2012

The premature birth rate in Mississippi is especially an issue in Public Health Districts III and II, where rates were as high as 19.3 and 19.1 per 100 births, and counties like Quitman and Claiborne had the highest rates of premature births 30.6 and 29.6 per 100 births.

29 Mayo Clinic, http://www.mayoclinic.org/diseases-conditions/premature-birth/basics/definition/con-20020050

Low Birth Weight

Figure 58. Low Birth Weight by Race of Mother



Source: MSTAHRS, 2003-2012

The Centers for Disease Control and Prevention (CDC) define low birth weight as a baby born weighing less than 2,500 grams (about 5.5 lbs.). CDC identifies low birth weight as "the single most important factor affecting neonatal mortality." Babies with low birth weights are at risk for a range of health conditions, including neurodevelopmental disabilities and respiratory disorders.[30]

The rate of low birth weight (LBW) in Mississippi has not changed significantly over the past ten years (11.5 LBW births per 100 live births in 2003 and 11.6 LBW births per 100 live births in 2012). Racial disparities persist, with substantially higher rates of low birth weight births occurring among minority mothers. In 2012, 16.2 low birth weight births per 100 live births were reported among black mothers, compared to 8.2 low birth weight births per 100 live births among white mothers. Regionally, disparities exist as well. For 2012, District III has the highest rates of low birth weight births with 14 low birth rate births per 100 live births compared to District IX that reported 9.3 low birth weight births per 100 live births. Mississippi's 2012 rate of 11.6% is notably higher than the national rate of 7.99 %, and the Healthy People 2020 target of 7.8 percent.[2] There are limitations in the data due to the small sample size from regions with low births.[31, 32]

Teen Births

Teen pregnancy refers to pregnancy in girls who are between the ages of 13 and 19, which may be intended or unintended. Teen pregnancy includes the number of live births, fetal losses, stillbirths and abortions per 1,000 girls aged 19 and under. Teen pregnancy can have a tremendous impact on a girl's life, which is understood to occur in a girl who hasn't completed her core education (secondary school). Teenage girls who become pregnant typically live at home, have few or no marketable skills, are financially dependent upon their parents and/or rely on public assistance, and are mentally immature. The children of teen mothers are more likely to be born prematurely and

30 http://www.cdc.gov/pednss/how_to/interpret_data/case_studies/low_birthweight/what.htm

31 http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_09.pdf

32 https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives

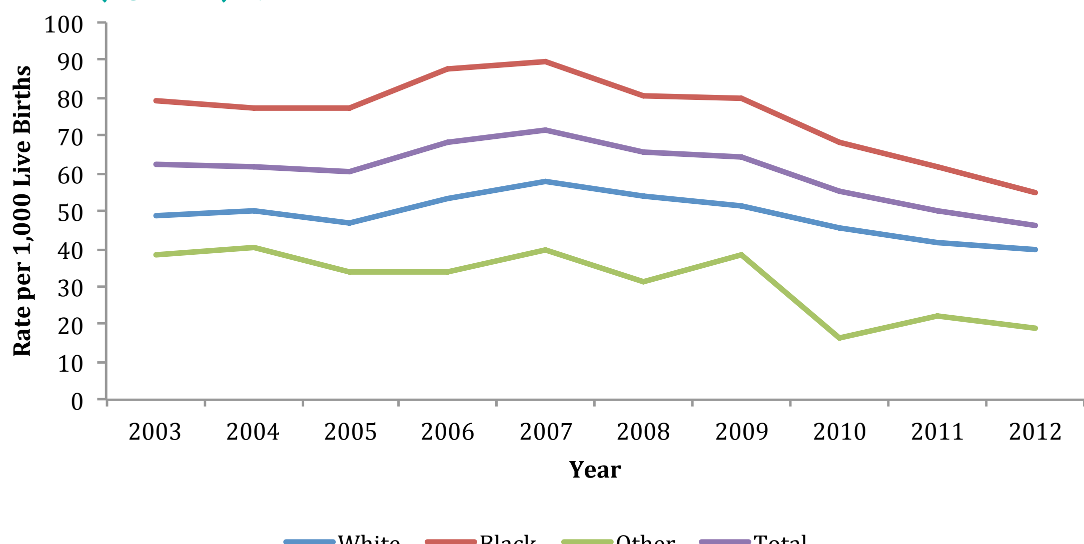
more likely to be of low-birth weight (less than five and a half pounds) when compared to the children of mothers who are aged 20 or 21 at the birth of their first child.

In 2012, a total of 305,388 babies were born to teen girls aged 15 to 19 years in the U. S., for a live birth rate of 29.4 per 1,000 girls in this age group.[33] The birth rate per 1,000 Hispanic females ages 15 to 19 (46 per 1,000) was slightly higher than rates among black teens (44 per 1,000), followed by American Indian teens (35 per 1,000), white teens (21 per 1,000), and Asian or Pacific Islander teens (10 per 1,000).[34]

In the same year, 4,778 babies were born to Mississippi teens aged 15 to 19, for a live birth rate of 46 per 1,000 teens in this age group. The birth rate for black Mississippi teens (54.9 per 1,000) was higher than the birth rate for white Mississippi teens (39.8 per 1,000). Both rates were higher than the rate for Mississippi teens identifying with other races (18.8 per 1,000).

The following chart depicts Mississippi live births per 1,000 teens by race for the period 2003 to 2012.

Figure 59. Teen Births (Age 15-19) by Race of Mother



Source: MSTAHRS, 2003-2012

According to U.S. Department of Health and Human Services Office of Adolescent Health, Mississippi had the second highest teen birth rate of the 50 states and the District of Columbia in 2011.[35] The rates of teen pregnancy have been declining in the United States, but the number of pregnant teens in the U.S. remains high. Teenage pregnancy poses a serious risk to the health of teen mothers and their babies, and to society as a whole, which has to pay the economic and social costs of teen pregnancy.

Teen pregnancy can result in a number of negative consequences. It is necessary to understand the associated risk and protective factors in order to appropriately implement prevention efforts.

33 CDC Website; Teen Pregnancy: Teen Pregnancy in the U.S; Martin JA, Hamilton BE, Osterman MJK, Curtin SC, Mathews TJ. Births: Final data for 2012. *National Vital Stat Rep*. 2013; 62(9)

34 Child Trends Databank; (2014) Teen births; Available at: http://www.childtrends.org/?indicators=teen-births - See more at: http://www.childtrends.org/?indicators=teen-births#sthash.yiiN2uqv.dpuf

35 U.S. Department of Health and Human Services, Office of Adolescent Health; Mississippi Adolescent Reproductive Health Facts

Appendix 1. Map of Mississippi's Public Health Districts

PUBLIC HEALTH DISTRICTS

Northwest Public Health
District I

Northeast Public Health
District II

Delta/Hills Public Health
District III

Tombigbee Public Health
District IV

West Central Public Health
District V

East Central Public Health
District VI

Southwest Public Health
District VII

Southeast Public Health
District VIII

Coastal Plains Public Health
District IX

Mississippi Community Themes and Strengths Assessment

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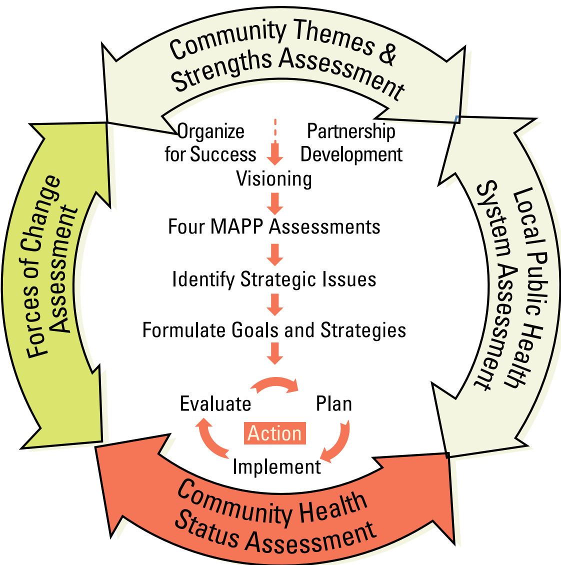
Introduction

In 2014, the Mississippi State Department of Health embarked on a journey to develop a State Health Assessment (SHA) by adapting the Mobilizing for Action through Planning and Partnerships (MAPP) process. MAPP is a community-driven[36] strategic planning framework that assists communities in developing and implementing efforts around the prioritization of public health issues and the identification of resources to address them as defined by the 10 Essential Public Health Services. The MAPP process includes four assessment tools, as shown in the graphic below.



MAPP Model, Achieving Healthier Communities MAPP User's Handbook
http://www.naccho.org/topics/infrastructure/MAPP_Handbook_fnl.pdf

Within the MAPP process, there are four assessment tools. One of these assessment tools is the Community Themes and Strengths Assessment (CTSA). The CTSA is conducted to form an understanding of community issues and concerns and perceptions of quality of life across the state. The CTSA seeks to answer the questions:

- **What is important to our community?**
- **How is quality of life perceived in our community?**
- **What assets do we have that can be used to improve community health?**[37]

To answer these questions, the Mississippi State Department of Health conducted a statewide survey and facilitated a series of focus groups across the state.

36 For the purposes of the MAPP process, the Mississippi State Department of Health defines community broadly as the residents of the state of Mississippi and the state's partners through the state's public health system, including state and local government agencies, businesses, non-profits, academia, and other entities that influence the health and well-being of Mississippians.

37 National Association for County and City Health Officials, 2015.

Executive Summary: Key Findings of the Community Themes and Strengths Assessment

Community input from the statewide survey and community focus groups revealed the following key findings on participants' perspectives related to health and quality of life in their communities:

- Residents across the state recognized the critical role of social and environmental factors in shaping community health, and emphasized the importance of community safety and access to quality education and employment
- African American/Black residents and Delta Region residents were more likely than other participants to report dissatisfaction with quality of life in their communities. African American/Black and Delta Region residents were also more likely to report an insufficient presence of assets and resources to support health in their communities. Delta Region survey respondents were more likely than all other districts to negatively assess their communities as good places to raise children and grow old, and were more likely to perceive unequal access to community participation opportunities.
- Survey respondents from Northeastern Mississippi reported the highest satisfaction with their communities as good places to grow old and raise children.
- Commonly identified community challenges include community tension, lack of access to basic resources such as healthy food, healthcare, and affordable housing, lack of access to quality employment, lack of community infrastructure to support recreation and physical activity, lack of community safety, and distrust of healthcare providers.
- Churches were perceived as an important community asset that can be leveraged to bring community members together for collective action to improve community health.
- Participants across the state reported that cancer, obesity, and chronic diseases including diabetes, high blood pressure, heart disease and stroke are their top health concerns in their communities. Focus group and survey participants both emphasized the detrimental impact of poor eating habits and lack of physical activity in contributing to these health problems.
- Community residents across the state expressed concern regarding insufficient access to healthcare, and many focus group participants expressed distrust of healthcare providers in their communities and dissatisfaction with quality and affordability of healthcare.

Cross-cutting themes from both the focus group and summary input are discussed in the conclusion on page 52.

Survey Summary

1. Purpose, Methodology, and Executive Summary

Purpose

MSDH created a state survey to gather community input from residents on a variety of health issues, including health status, health care, social services, quality of life, social support, and economic opportunity. The results of survey will help MSDH understand Mississippi residents' perceptions of health and wellbeing in their communities, and identify barriers and obstacles to health and wellness.

Methodology

MSDH developed a 30-question survey for Mississippi residents about health status, health services, and quality of life. MSDH worked with the offices from the 9 public health districts across the state to distribute the survey. Respondents were recruited from a variety of community spaces, including workplaces, churches, schools, communities, and shopping centers. The survey was distributed in English, Spanish and Vietnamese. A total of 18,946 Mississippi residents completed the survey. Most respondents participated in the survey by completing a paper-based scantron survey and about 2,000 were completed online through SurveyMonkey®. In addition to basic analysis of each question, cross-tabs were also created to further analyze select questions.

Data Limitations

Each of the public health district offices recruited survey respondents through convenience sampling. While efforts were made for respondents to generally reflect state demographics, it is important to note that the sample is not a representative sample.

Executive Summary

A total of 18,946 Mississippi residents participated in the survey. Residents aged 45 and over, males, and residents identifying as White/Caucasian were underrepresented by the survey sample. 37% of survey respondents reported having a college degree or higher, and about half of respondents reported a household income of less than $25,000. 40% were privately insured, 41% had coverage other than private insurance, and 19% were uninsured.

In respondents' assessment of the health status of their communities, 52% described their communities as somewhat healthy, and 27% described their communities as either unhealthy or very unhealthy. Those with a higher level of educational attainment were more likely to negatively assess their community's health status. The majority of respondents rated their personal health as either healthy or somewhat healthy, and respondents with higher levels of educational attainment more frequently described themselves as healthy or very healthy. Respondents across all racial/ethnic groups included cancers, diabetes, high blood pressure, heart disease and stroke, and obesity as the top health related problems in their communities. Alcohol abuse, drug abuse, and being overweight were identified as the top three risky behaviors in respondents' communities.

Forty-seven percent of respondents felt there was a "broad variety of health services" available in the community. Those with higher levels of education perceived there to be a broader range while those with vocational training more were likely to report an absence of a broad variety of services. Over half the respondents in District 1 Northwest reported a sufficient number of health and social services while only 34% of respondents in District 3 Delta/Hills felt the services were sufficient. In addition, White respondents were more likely to report a sufficient number of services; 47% of White respondents reported sufficient services compared to 41% of African American/ Black respondents.

Half of respondents reported satisfaction or strong satisfaction with quality of life in their communities. African American/Black respondents were more likely to report dissatisfaction with quality of life; over a quarter of African American/Black respondents (26%) reported dissatisfaction or strong dissatisfaction with quality of life compared to 16% of white respondents. Respondents from District 3 Delta/Hills were disproportionately likely to report low quality of life, and rated their communities lowest on nearly every quality of life indicator when compared with respondents from other districts. District 2 Northeast respondents reported disproportionately high quality of life.

Survey respondents identified the following top 5 most important factors for a healthy community as:

- Being a good place to raise children,
- Good schools,
- Low crime and safe neighborhoods,
- Good jobs and a healthy economy, and
- Access to healthcare

The majority of respondents reported that their community was a good place or a very good place to raise children (63%), and a good place or a very good place to grow old (66%). District 3 Delta/Hills respondents were least likely to report that their communities were good places to raise children and grow old, while District 2 Northeast respondents were most likely to report that their communities were both child and age friendly. 65% of respondents perceived their communities as safe or very safe, with White respondents and respondents with higher educational attainment being disproportionately likely to describe their communities as safe.

Forty-nine percent of survey respondents perceived that everyone in their community had the opportunity to "participate in and contribute to the community's quality of life," and 45% reported that all residents in their communities perceive that they can make their community a better place to live. African American/Black survey respondents were more likely than White respondents to report an absence or strong absence of opportunities to participate in community quality of life, and District 3 Delta/Hills respondents were most likely to report unequal access to opportunities for community participation. Two thirds of respondents either disagreed, strongly disagreed, or responded neutrally to the question of whether their community was working together to achieve shared goals, and African American/Black respondents were more likely than White respondents to perceive a lack of collective community action toward shared goals. Thirty-eight percent of respondents reported a presence or strong presence of civic responsibility and engagement as well as civic pride in shared accomplishments in their communities.

Only 32% of survey respondents perceived a presence or strong presence of economic opportunity in their communities. District 3 Delta/Hills respondents were by far the most likely of all districts to report an absence or strong absence of economic opportunity (57%). Respondents with higher levels of educational attainment were more likely to negatively assess the presence of economic opportunities in their communities.

Forty-five percent of respondents reported that there were support networks for individuals and families in times of stress and need in their communities. District 3 Delta/Hills respondents, African American/Black respondents, and respondents with lower educational attainment were more likely to negatively assess the presence of support networks in their communities. African American/Black respondents were nearly twice as likely as White respondents to report an absence or strong absence of support networks for people in need.

Overarching Themes

- Respondents from the District 3 Delta region consistently reported the lowest quality of life, and were the most likely of all districts to negatively assess their communities as good places to raise children and grow old. Delta residents were also more likely than other districts to perceive unequal access to opportunities to participate in the community.
- Respondents from District 2 Northeastern Mississippi reported the highest satisfaction with their communities as good places to grow old and raise children.
- Respondents with a vocational training education level had the lowest perception of personal health, the lowest satisfaction with the healthcare system, and did not perceive that a broad variety of health services were available in their communities.
- Racial disparities were noted in perception of quality of life and health services, with African American/ Black respondents reporting higher levels of dissatisfaction with quality of life and health services than White respondents. African American/Black respondents were also almost twice as likely to perceive an absence or strong absence of support networks for people in need compared to White respondents.
- Survey respondents included cancers, diabetes, high blood pressure, heart disease and stroke, and obesity as the top 5 health-related problems in the state. Most important risky behaviors included alcohol abuse, drug abuse, being overweight, dropping out of school, poor eating habits, and lack of exercise.
- When asked about most important factors for a healthy community, respondents most frequently mentioned environmental and social factors, including child-friendliness, access to education, and community safety.

2. Demographic Characteristics of Survey Respondents

Figure 2.1

Geographic Distribution by Public Health District

Public Health District	Number of survey respondents	Percent of total survey respondents	State Population Census 2012
District 1 Northwest	2,557	14%	322,373 (11% of state)
District 2 Northeast	2,309	12%	365,397 (12% of state)
District 3 Delta/Hills	2,424	13%	211,212 (7% of state)
District 4 Tombigbee	1,406	7.5%	245,601 (8% of state)
District 5 West Central	1,440	7.5%	640,418 (21% of state)
District 6 East Central	2,910	15%	242,912 (8% of state)
District 7 Southwest	1,955	10%	172,718 (6% of state)
District 8 Southeast	2,231	12%	308,460 (10% of state)
District 9 Coastal/ Plains	1,714	9%	475,835 (16% of state)
State Total	18,946	100%	2,984,926

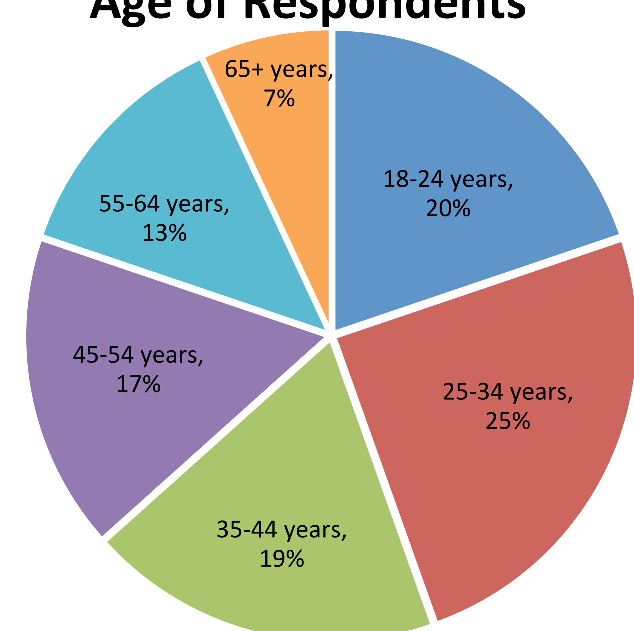
Figure 2.2

As of 2012, the population of Mississippi was 2,984,926. Districts 5 West Central and 9 Coastal Plains were the most populous, comprising 21% and 16% of the state's population, respectively. A total of 18,946 citizens across the state participated in the survey. The table above shows the geographic distribution of citizens as well as the distribution of survey respondents. Based on the proportion of the population comprised by each district, Districts 1, 3, 6, 7, and 8 were overrepresented in the survey while Districts 5 and 9 were underrepresented.

Figure 2.3

Age		
	Percent of total survey respondents	State Population (Census 2012)
18-24 years	20%	14%
25-34 years	25%	17%
35-44 years	19%	17%
45-54 years	17%	18%
55-64 years	13%	16%
65+ years	7%	18%

Figure 2.4



Survey respondents ranged in age from 18 to over 65. According to the 2012 census, roughly half of the adult population was between the ages of 18 and 44, and about half were 45 and over. Survey respondents between the ages of 18 and 44 comprised 64% of the total number of respondents, and respondents age 45 and over comprised 37% of total respondents, meaning that adults age 45 consisted of a smaller proportion of respondents.

Figure 2.5

Gender		
	Percent of total survey respondents	State Population (Census 2012)
Female	73%	52%
Male	28%	48%

73% of survey respondents were female and 28% were male, meaning that women were overrepresented and men were underrepresented compared to the actual demographic distribution of the state.

Figure 2.6

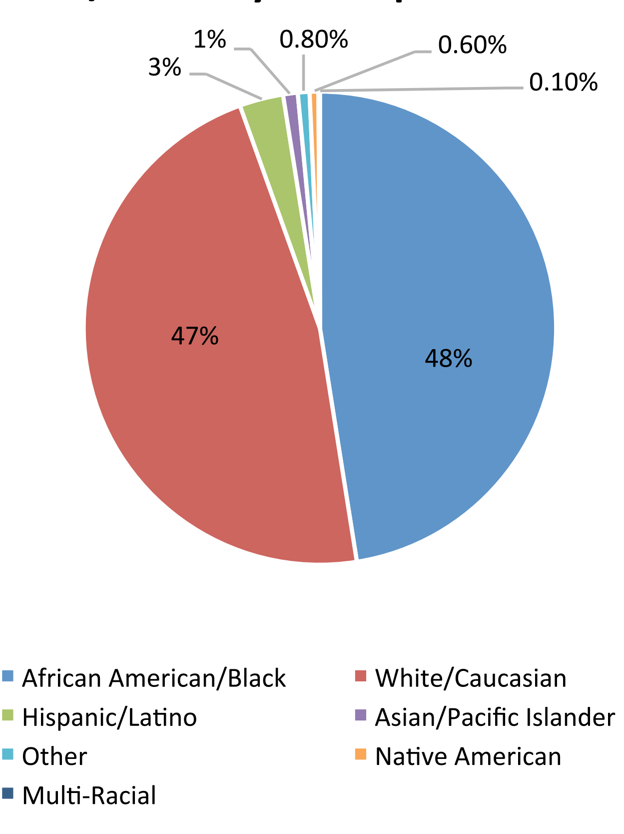
Marital Status			
	Percent of total survey respondents	Mississippi Population	United States Population
Married	45%	46%	49%
Not Married / Single	36%	33%	32%
Separated or Divorced	11%	15%	13%
Cohabitating	5%	--	--
Widowed	3%	7%	6%

Half of survey respondents were married or cohabitating, and half were single, separated/divorced, or widowed.

Figure 2.7

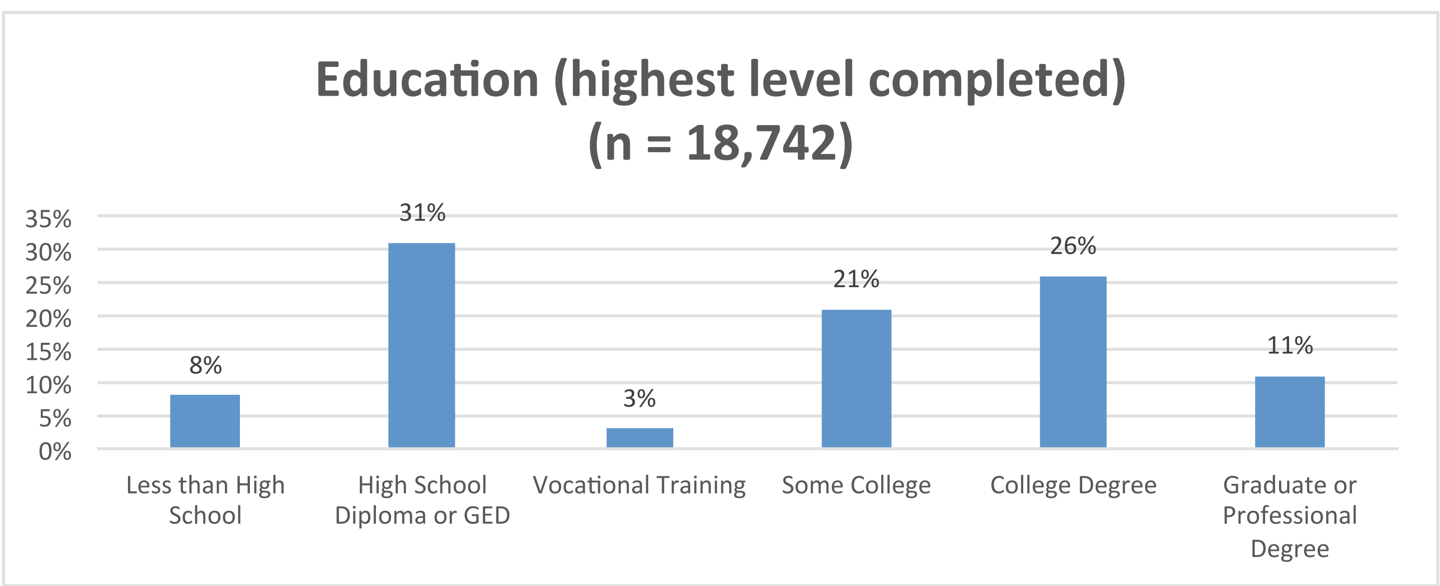
Race/Ethnicity		
	Percent of total survey respondents	State Population Estimates (Census 2012)
African American/ Black	48%	37%
White/ Caucasian	47%	60%
Hispanic/ Latino	3%	3%
Asian/Pacific Islander	1%	1%
Native American (American Indian)	0.6%	0.6%
Multi-Racial	0.1%	1%
Other	0.8%	

Figure 2.8



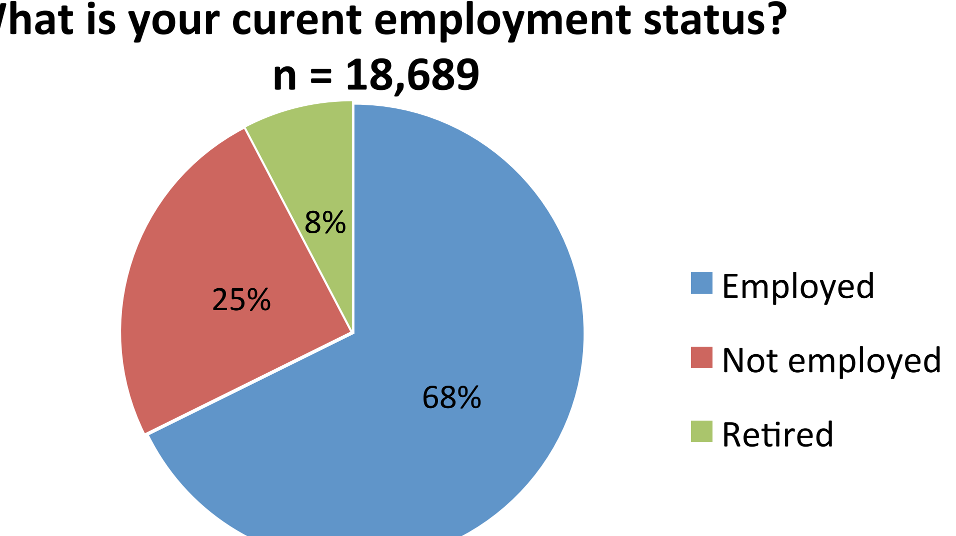
48% of survey respondents identified as African American/Black and 47% identified as White/Caucasian. The remaining 5% of survey respondents identified as Hispanic/Latino, Asian/Pacific Islander, Native American, Multi-Racial, or Other. According to Census estimates, the population of Mississippi was 37% African American/ Black and 60% White/Caucasian, with other race/ethnicities comprising the remaining 3% of the population. Because races/ethnicities other than White/Caucasian and African American/Black represent such a small proportion of the population, the sample of respondents for these groups is very small. Therefore, these smaller groups were combined for analysis of the influence of racial/ethnic considerations on survey outcomes.

Figure 2.9



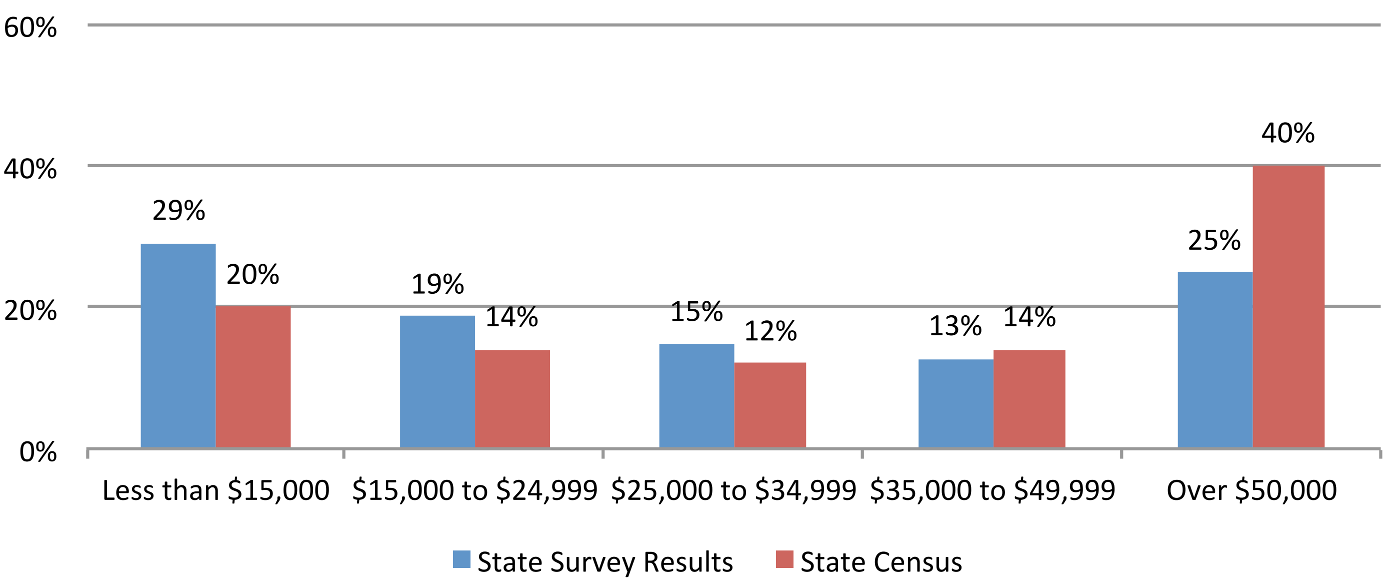
92% of survey respondents had a high school diploma/GED or higher, and 37% had a college degree or advanced degree as their highest level of educational attainment.

Figure 2.10



68% of survey respondents were employed, 25% were not employed, and 8% were retired. Survey respondents were more likely than the population overall to be unemployed; data from the Bureau of Labor Statistics (BLS) showed that the unemployment rate for Mississippi was 7.9% as of June 2014. However, it should be noted that the BLS definition of unemployment does not include people who are not actively seeking work. As such, some people who indicated that they were not employed in the survey may not be classified as "unemployed" by the BLS.

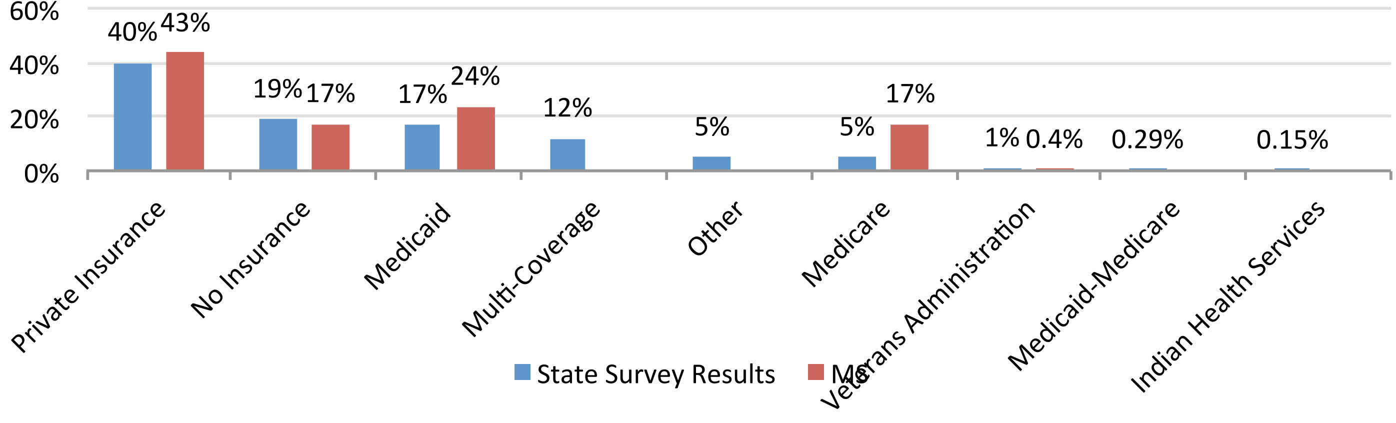
Figure 2.11



Roughly half of survey respondents reported an annual household income of less than $25,000, and 29% reported a household income of less than $15,000.

Figure 2.12

What kind of healthcare coverage do you have? (n=18,461)
(Survey sample vs. Census estimates for MS population)



40% of survey respondents reported having private insurance, 19% had no insurance coverage of any kind, and the remaining 41% had health care coverage from a source other than private insurance.

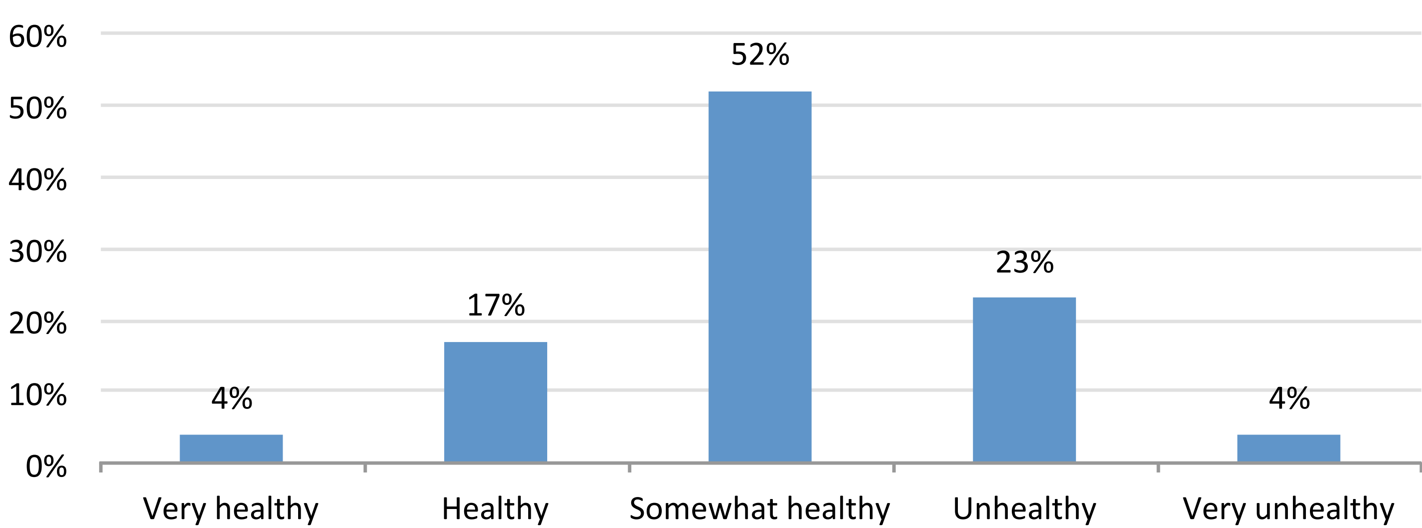
Where did you get this survey?

Respondents received the survey from a variety of places throughout the community. Forty-four percent of respondents stated they received the survey from sources other than their workplace, a personal contact, church, community meeting, school, or a grocery or shopping store.

3. Health Status

Figure 3.1

How would you rate the overall health of our community? (n = 17,960)



Similar to the results for individual districts, the majority of all respondents rated health of the community as somewhat healthy. Across individual districts, the response for "somewhat healthy" ranged from 44% in District 1 Northwest to 56% in District 4 Tombigbee and District 8 Southeast.

Figure 3.2

Overall Health and Education

	Graduate or Professional Degree	College Degree	Some College	Vocational Training	High School Diploma or GED	Less than High School
Very healthy and Healthy	17%	17%	19%	21%	23%	31%
Somewhat healthy	48%	52%	53%	52%	54%	49%
Very unhealthy and unhealthy	35%	31%	28%	27%	23%	21%

The numbers of responses for "very healthy" and "healthy" were combined, and "unhealthy" and "very unhealthy" were also combined for comparison of results by educational level. From these results, it is seen that that those with higher levels of education perceived the overall health of the community as less healthy. Out of all the college degree and graduate or professional degree respondents, only 17% of each group perceived the overall health as very healthy or healthy. In addition, 35% of respondents with graduate or professional degrees and 31% of respondents with college degrees felt the overall health was very unhealthy or unhealthy. This was higher than the respondents with other levels of education.

Figure 3.3

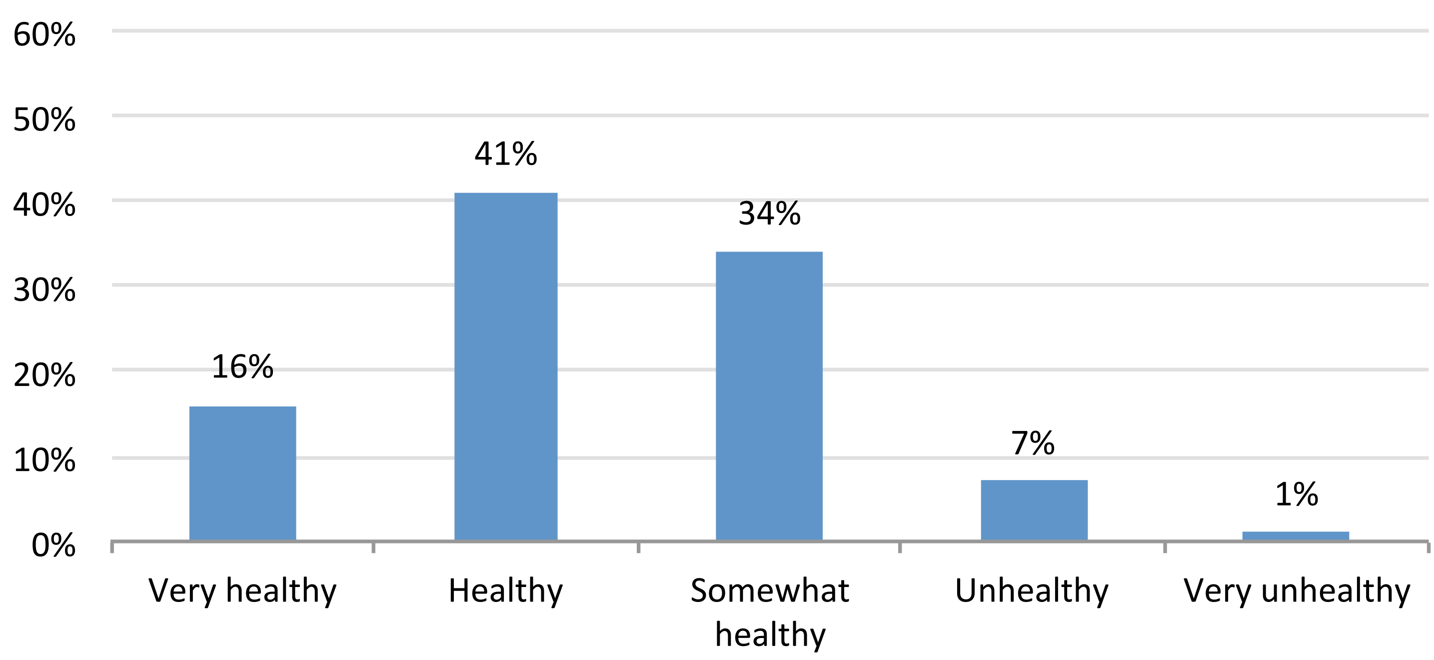
Overall Health and Race

	African American/Black	White
Very healthy and Healthy	21%	18%
Somewhat healthy	51%	55%
Very unhealthy and unhealthy	29%	26%

Since the majority of survey respondents were African American/Black (48%) or White (47%), the other races are not reflected in this table. However, of the Hispanic respondents (3%), the largest proportion of them (43%) rated the overall health of their community as very healthy or healthy. The rates between African American/Black and White respondents were similar in perceptions of overall health, as shown in Figure 3.3 above. The majority of respondents in both of the predominant racial groups rated their communities as somewhat healthy.

Figure 3.4

How would you rate your personal health? (n = 18,863)



Overall, 57% of respondents rated their personal health as very healthy or healthy and 8% of respondents felt their personal health was unhealthy or very unhealthy.

Figure 3.5

Personal Health and Education

	Graduate or Professional Degree	College Degree	Some College	Vocational Training	High School Diploma or GED	Less than High School
Very healthy and Healthy	61%	60%	56%	21%	58%	54%
Somewhat healthy	32%	34%	36%	52%	34%	35%
Very unhealthy and unhealthy	6%	6%	8%	27%	8%	12%

The numbers of responses for “very healthy” and “healthy” were combined, and “unhealthy” and “very unhealthy” were also combined for comparison of results by educational level. As shown in Figure 3.5 above, respondents with vocational training as their highest educational level were more likely than other groups to view their personal health as “very unhealthy,” “unhealthy,” or “somewhat healthy.”

Figure 3.6

Personal Health and Race

	African American/Black	White
Very healthy and Healthy	56%	60%
Somewhat healthy	36%	34%
Very unhealthy and unhealthy	8%	7%

Similar to Overall Health, since the majority of survey respondents were African American/Black (48%) or White (47%), the other races are not reflected in this table. Based on this information, a comparable proportion of African American/Black respondents (8%) and White respondents (7%) perceived their personal health as very unhealthy or unhealthy. Again, the Hispanic/Latino respondents had a healthier perception of their personal health at 62% rating it as very healthy or healthy.

Most Important "Health Related Problems"

Figure 3.7

"Health Related Problems" and Race

	Overall	African American/Black	White
Cancers	14%	14%	15%
Diabetes	12%	14%	11%
High blood pressure	11%	13%	9%
Heart disease and stroke	11%	9%	14%
Obesity -childhood and adult	10%	7%	13%

All respondents included cancers, diabetes, high blood pressure, heart disease and stroke, and obesity-childhood and adult in the top 5 health related problems. While White respondents rated cancers as the greatest (15%) health related problem, African American/Black respondents rated both cancers and diabetes as the greatest health related problem at 14%. Both the Native American and Hispanic/Latino respondents showed diabetes as the highest rated at 14% and 12%, respectively. For the remaining respondents who identified themselves as Hispanic/Latino, Asian/Pacific Islander, Native American, Multi-Racial and Other, the highest health related problem was also cancers at 11%.

Figure 3.8

Most Important "Risky Behaviors"

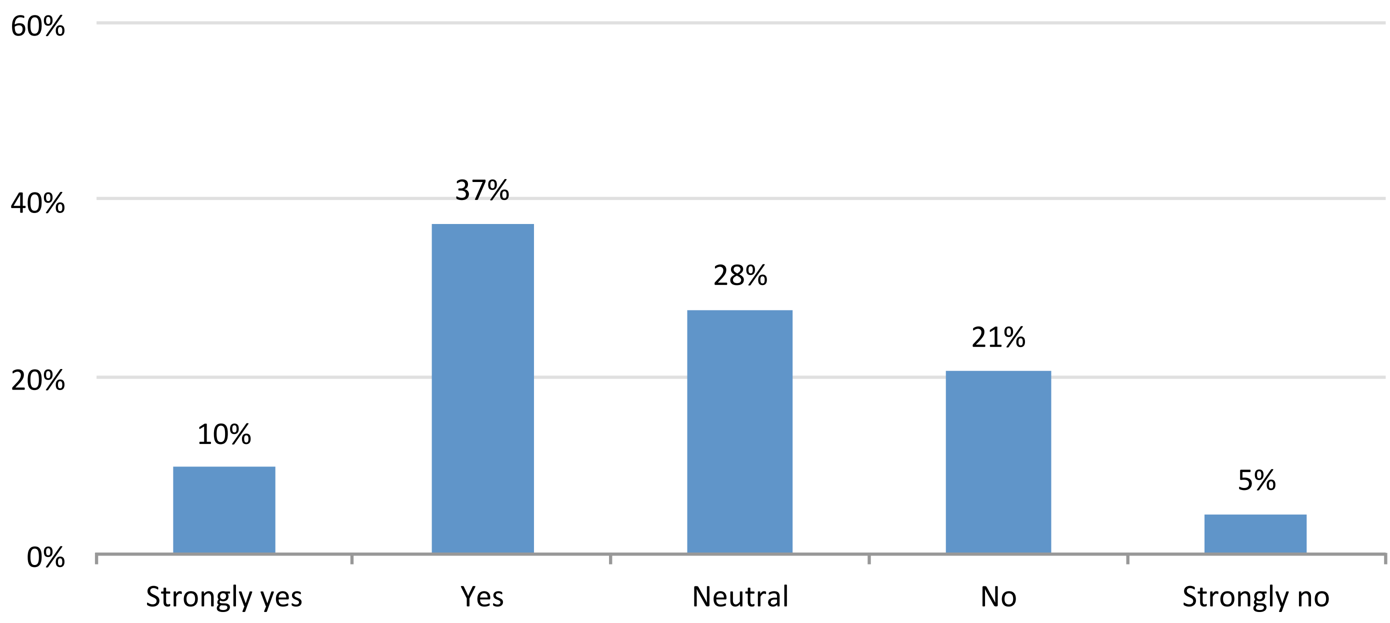
	Overall	African American/Black	White
Alcohol abuse	18%	17%	18%
Drug abuse	17%	15%	18%
Being overweight	14%	12%	16%
Dropping out of school	9%	11%	-
Poor eating habits	9%	8%	9%
Lack of exercise	-	-	9%

Alcohol abuse, drug abuse and being overweight were the top three most important risky behaviors for all the respondents. This demonstrates common top concerns for risky behaviors regardless of race. However, among the top five risky behaviors, African American/Black and Hispanic/Latino respondents included dropping out of school (11%), White respondents included lack of exercise (9%) and Native American respondents reported tobacco use (9%).

4. Health Services

Figure 4.1

Are you satisfied with the health care system in our community? (n = 18,872)



Overall, 47% of respondents reported satisfaction or strong satisfaction with the health care system in their community, while 54% reported their satisfaction as neutral, no or strongly no.

Health Care System Satisfaction across Districts

District 3 Delta/Hills respondents were disproportionately dissatisfied with the health care system in their communities, with 41% saying they were unsatisfied or strongly unsatisfied with their community's health care system, which was twice the dissatisfaction rate as District 2 Northeast respondents.

Figure 4.2

Educational Attainment and Satisfaction with the Health Care System

Satisfaction with the Health Care System	Graduate or Professional Degree	College Degree	Some College	Vocational Training	High School Diploma or GED	Less than High School
Satisfied or very satisfied	48%	50%	44%	39%	47%	53%
Neutral	24%	26%	29%	39%	29%	26%
Dissatisfied or very dissatisfied	27%	26%	26%	32%	24%	21%

Overall, only about 50% of respondents indicated that they were satisfied or very satisfied with the health care system in their area. Respondents with higher educational attainment were generally more likely to be dissatisfied with the health care system than respondents with lower educational attainment, but survey

respondents with vocational training were disproportionately more likely to express dissatisfaction with their communities' health care system. Respondents with less than a high school education were most satisfied with their communities' health care systems.

Figure 4.3

Race and Satisfaction with the Health Care System

Satisfaction with the Health Care System	African American/Black	White
Satisfied or very satisfied	44%	51%
Neutral	27%	28%
Dissatisfied or very dissatisfied	28%	22%

White respondents had a satisfaction rate of 51% while only 44% of African American/Black respondents were satisfied. About 50% of both groups states they were neutral or dissatisfied with the health care system.

Figure 4.4

Satisfaction with the Health Care System by Type of Insurance (n=18382)

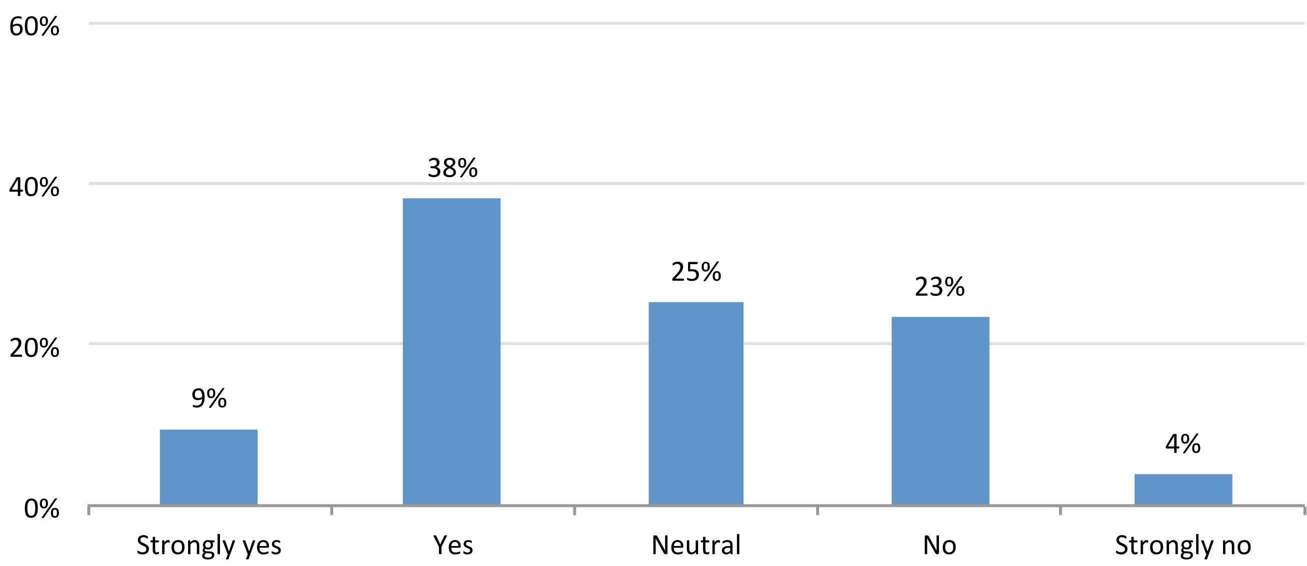
Satisfaction with the Health Care System	Private Health Insurance	Indian Health Services	Medicaid	Medicare	Veterans' Administration	Multi-Coverage	No Insurance
Satisfied or very satisfied	48%	52%	51%	49%	45%	51%	39%
Neutral	26%	30%	29%	27%	27%	27%	31%
Dissatisfied or very dissatisfied	26%	18%	20%	24%	28%	22%	30%

The number of respondents indicating coverage through the Indian Health Service was very small. As a result, the figures about the Indian Health Service may be unreliable.

People with no insurance were less likely to indicate satisfaction with the healthcare system than people with all other forms of insurance (39%). They were also most likely to indicate dissatisfaction with the healthcare system out of all of the types of insurance coverage (30%).

Figure 4.4

Is there a broad variety of health services in your community? (n = 18,867)



47% of respondents perceived the presence of a broad variety of health services in their communities, while 52% were neutral or did not feel there were a broad variety of health services available.

Presence of Broad Variety of Health Services across Districts

Perception of the breadth of health services varied widely across districts. 59% of respondents in District 8 Southeast positively assessed the breadth of services in their communities, significantly more than the 33% of respondents in District 3 Delta/Hills.

Figure 4.5

Educational Attainment and Perception of Presence of Broad Variety of Health Services

Perception of Presence of Broad Variety of Health Services	Graduate or Professional Degree	College Degree	Some College	Vocational Training	High School Diploma or GED	Less than High School
Presence or strong presence of variety	54%	50%	45%	45%	47%	46%
Neutral	19%	23%	26%	23%	28%	27%
Absence or strong absence of variety	28%	27%	29%	32%	25%	27%

Respondents with higher education attainment generally perceived the presence of a broad variety of health services in their communities. Respondents with vocational training were most likely of all educational levels to report an absence of a broad variety of health services.

Figure 4.6

Race and Perception of Presence of Broad Variety of Health Services

Perception of Presence of Broad Variety of Health Services	African American/Black	White
Presence or strong presence of variety	44%	51%
Neutral	26%	25%
Absence or strong absence of variety	31%	24%

African American/Black respondents were more likely to negatively assess the bread of health services in their communities, with 31% reporting an absence or strong absence of breadth of services, compared to 24% of White respondents.

Figure 4.7

Perception of the Presence of Broad Variety of Health Services by Type of Insurance (n=18376)

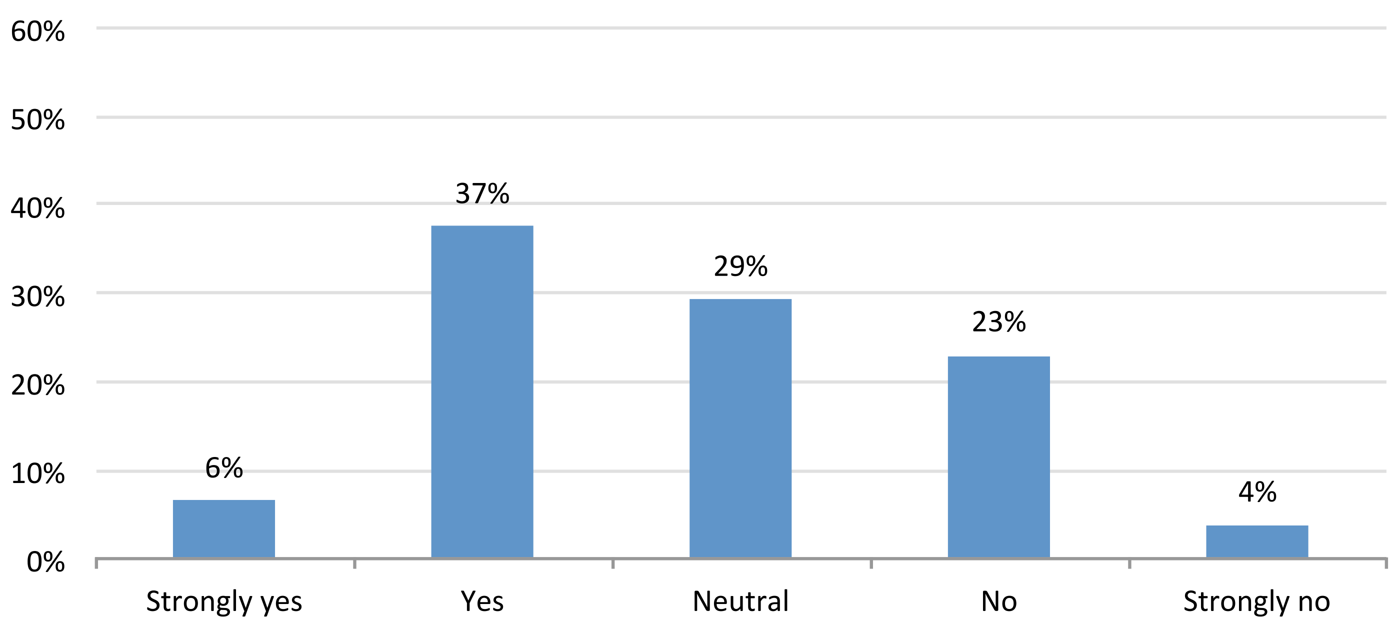
Perception of Presence of Broad Variety of Health Services	Private Health Insurance	Indian Health Services	Medicaid	Medicare	Veterans' Administration	Multi-Coverage	No Insurance
Presence or strong presence of variety	47%	48%	47%	45%	50%	61%	41%
Neutral	23%	30%	29%	24%	25%	22%	29%
Absence or strong absence of variety	30%	22%	24%	31%	25%	17%	30%

The number of respondents indicating coverage through the Indian Health Service was very small. As a result, the figures about the Indian Health Service may be unreliable.

The perception of the presence of a broad variety of health services also varied depending on the kind of health insurance survey respondents had. People with no insurance were least likely to perceive the presence of a variety of services (41%), while people with multiple forms of health coverage were most likely to see their communities as having a variety of services (61%).

Figure 4.8

Is there a sufficient number of health and social services in your community? (n = 18,445)



43% of survey respondents reported a sufficient number of health and social services in their communities, while a majority of respondents were neutral or reported no or strongly no.

Perception of Sufficient Number of Services across Districts

Just as the perception of the breadth of health services varied widely across districts, perceptions of the sufficiency of the number of health and social services also varied. Over half of District 1 Northwest respondents reported a sufficient number of health and social services in their communities, compared with only 34% in District 3 Delta/ Hills.

Figure 4.9

Race and Perception of Sufficient Number of Services across Districts

Perception of Sufficient Number of Services across Districts	African American/Black	White
Sufficient or very sufficient	41%	47%
Neutral	28%	31%
Insufficient or very insufficient	31%	23%

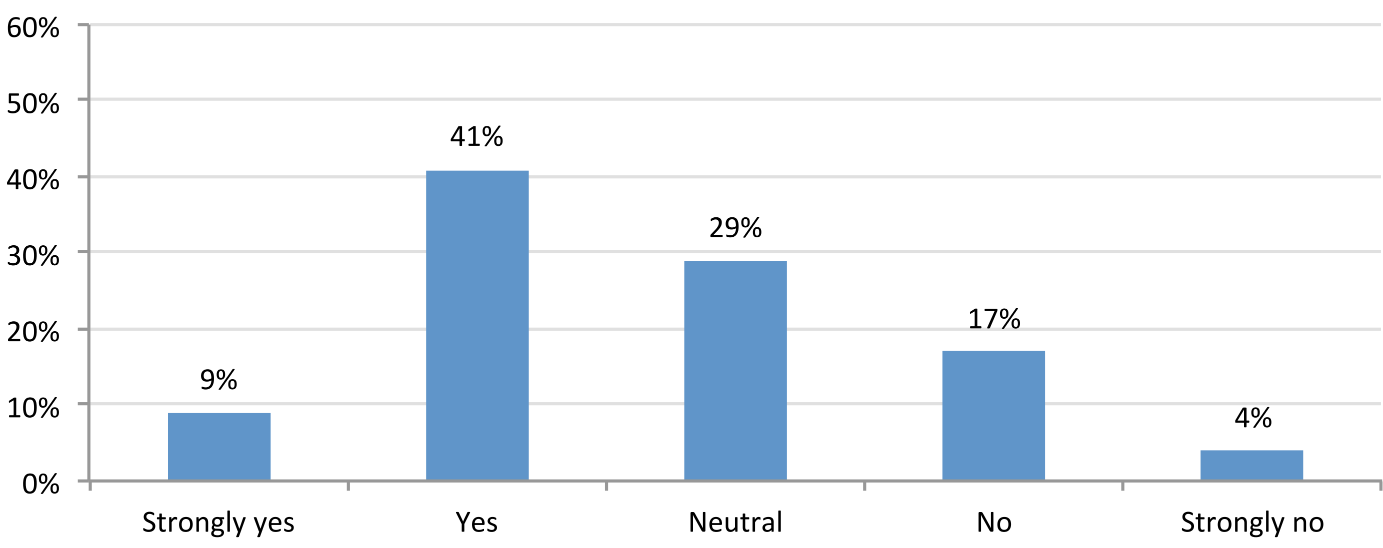
White respondents were more likely than African American/Black respondents to report a sufficient number of health and social services in their communities.

5. Quality of Life

Overall Quality of Life

Are you satisfied with the overall quality of life in your community? (n = 18,388)

Figure 5.1



50% of respondents reported being that they were either satisfied or strongly satisfied with quality of life in their communities. 21% answered that they were unsatisfied or strongly unsatisfied with quality of life, and the remaining 29% of respondents responded as neutral.

Figure 5.2

Race and Quality of Life

Satisfaction with Quality of Life	African American/Black	White
Strongly Satisfied and Satisfied	43%	58%
Neutral	32%	27%
Unsatisfied and Strongly Unsatisfied	26%	16%

African American/Black survey respondents were more likely to report dissatisfaction with quality of life in their communities than white respondents. African American/Black respondents were most likely of all races to report dissatisfaction, with 26% saying they were unsatisfied or strongly unsatisfied with quality of life. White respondents reported the highest quality of life, with 58% describing themselves as satisfied or strongly satisfied with quality of life in their communities.

Quality of Life across Districts

Respondents from District 3 Delta/Hills were disproportionately likely to have a negative perception of quality of life in their communities compared to respondents from other districts. 34% of respondents from District 3 Delta/ Hills reported dissatisfaction with quality of life, compared with 21% of respondents across the state.

Figure 5.3

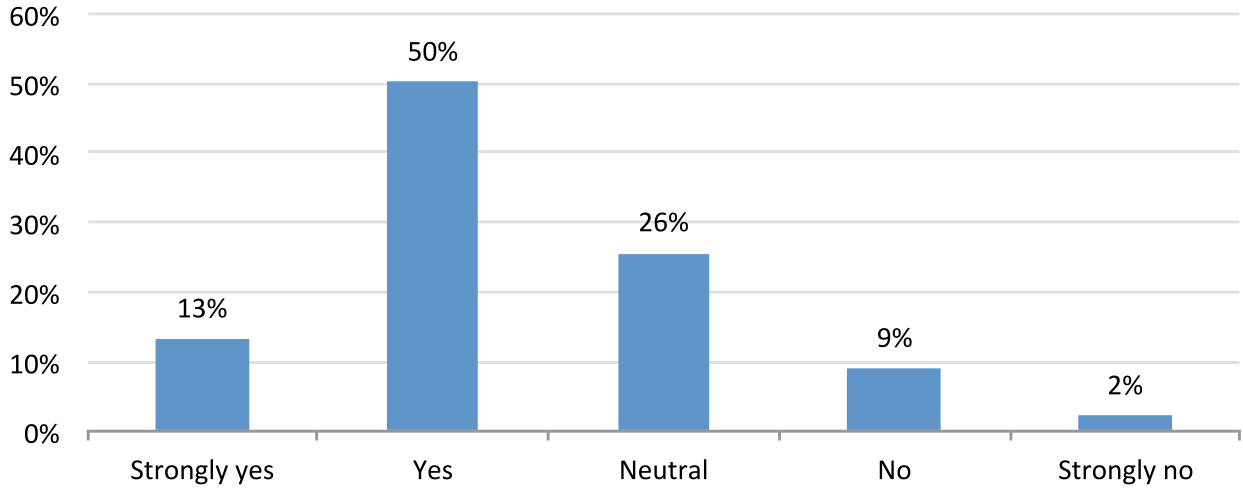
Most important factors for a "Healthy Community"

Factor	%
Good place to raise children	18%
Good schools	14%
Low crime/safe neighborhoods	14%
Good jobs and healthy economy	9%
Access to health care	7%

When asked about the most important factors for creating a healthy community, respondents most frequently mentioned environmental and social factors, including child-friendliness, access to high quality education, and community safety, as the most important factors in shaping community health. Respondents were twice as likely to say that good schools and safe neighborhoods were important than they were to say that health care access was important. These responses correspond with evidence showing that social and environmental factors are more important determinants of health than access to care. Responses to this question also reflect that survey respondents consider child wellbeing particularly critical in shaping the health of their communities, and it underscores the importance of the following question, regarding child welfare, to gain insight into overall perception of community health.

Figure 5.4

Is your community a good place to raise children? (n = 18,451)



63% of respondents perceived their communities as good places to raise children. 11% felt their communities were not good for raising children.

Responses across Districts

Respondents from District 3 Delta/Hills were most likely to negatively assess their communities as good places to raise children and District 2 Northeast respondents were most likely to positively assess their communities. District 3 Delta/Hills respondents were three times more likely than District 2 Northeast respondents to say their communities were not good places to raise children. 75% of District 2 Northeast respondents believed their communities were child-friendly, while only slightly over half of District 3 Delta/Hills respondents believed this.

Figure 5.5

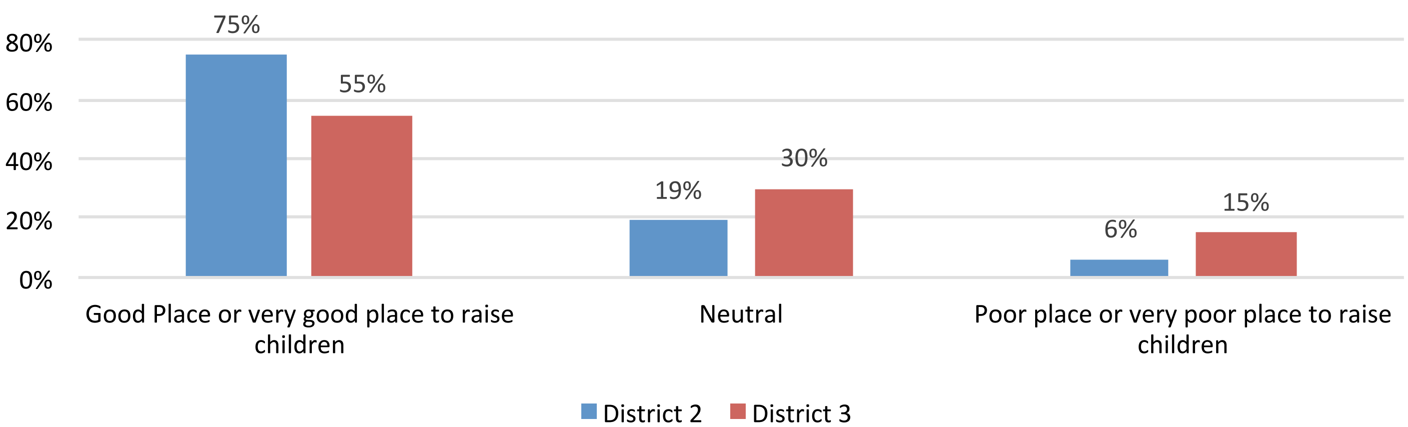
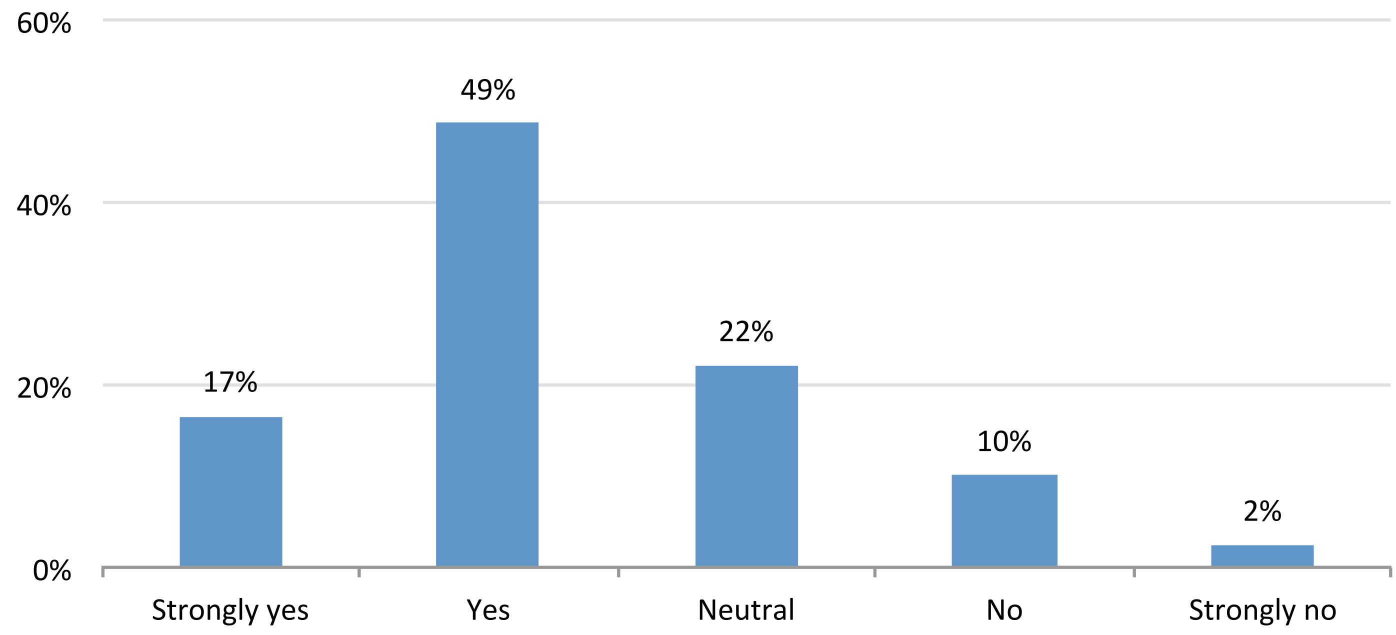


Figure 5.7

Is your community a good place to grow old? (n = 18,870)



66% of respondents perceived their communities as good places to grow old, while 12% did not.

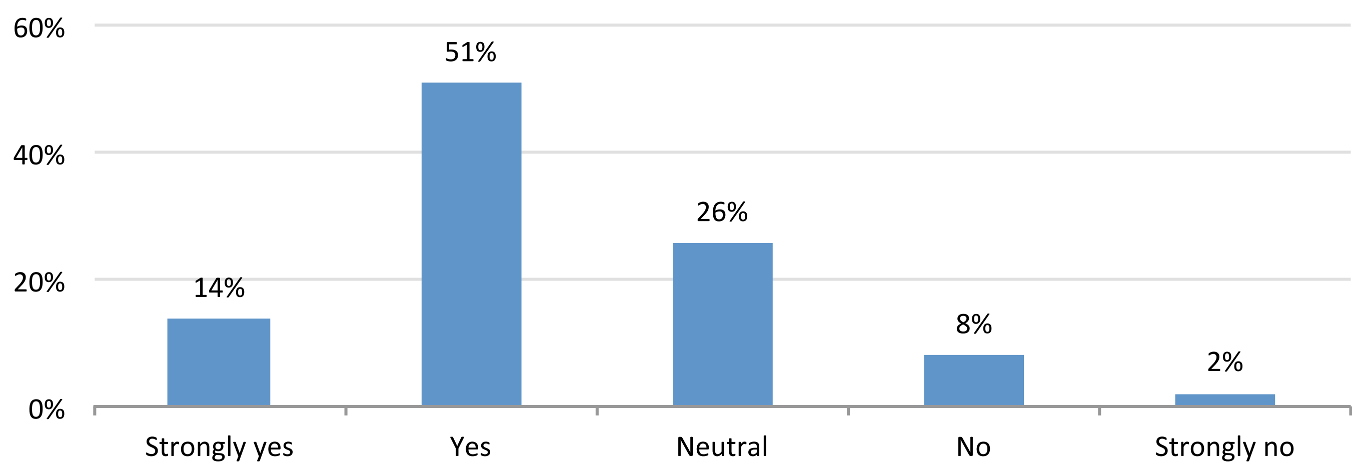
Responses across Districts

Just as District 3 Delta/Hills respondents were most likely to negative assess their communities as good places to raise children and District 2 Northeast respondents were most likely to perceive their communities as good places to raise children, this same trend held true for perceptions about age-friendliness.

District 3 Delta/Hills respondents were more than twice as District 2 Northeast respondents to say that their communities were not good places to grow old. Respondents from District 3 Delta/Hills were most likely to negatively assess their communities as good places to raise children and District 2 Northeast respondents were most likely to positively assess their communities. District 3 Delta/Hills respondents were twice as likely as District 2 Northeast respondents to say their communities were not good places to raise children. 75% of District 2 Northeast respondents believed their communities were child-friendly, while only slightly over half of District 2 Northeast respondents believed this.

Figure 5.8

Is your community a safe place to live? (n = 18, 872)



65% of respondents felt their communities were safe places to live. Male respondents were slightly more likely than female respondents to perceive their communities as safe (67% and 63%, respectively).

Figure 5.9

Educational Attainment and Perception of Community Safety

Perception of Community Safety	Graduate or Professional Degree	College Degree	Some College	Vocational Training	High School Diploma or GED	Less than High School
Safe or very safe	77%	68%	63%	62%	63%	61%
Neutral	21%	23%	28%	28%	27%	27%
Unsafe or very unsafe	11%	8%	9%	11%	11%	12%

Respondents with higher educational attainment were more likely to perceive their communities as safe places to live. 77% of respondents with graduate or professional degrees reported that their communities were safe, compared with only 61% of respondents who did not finish high school.

Figure 5.10

Race and Perception of Community Safety

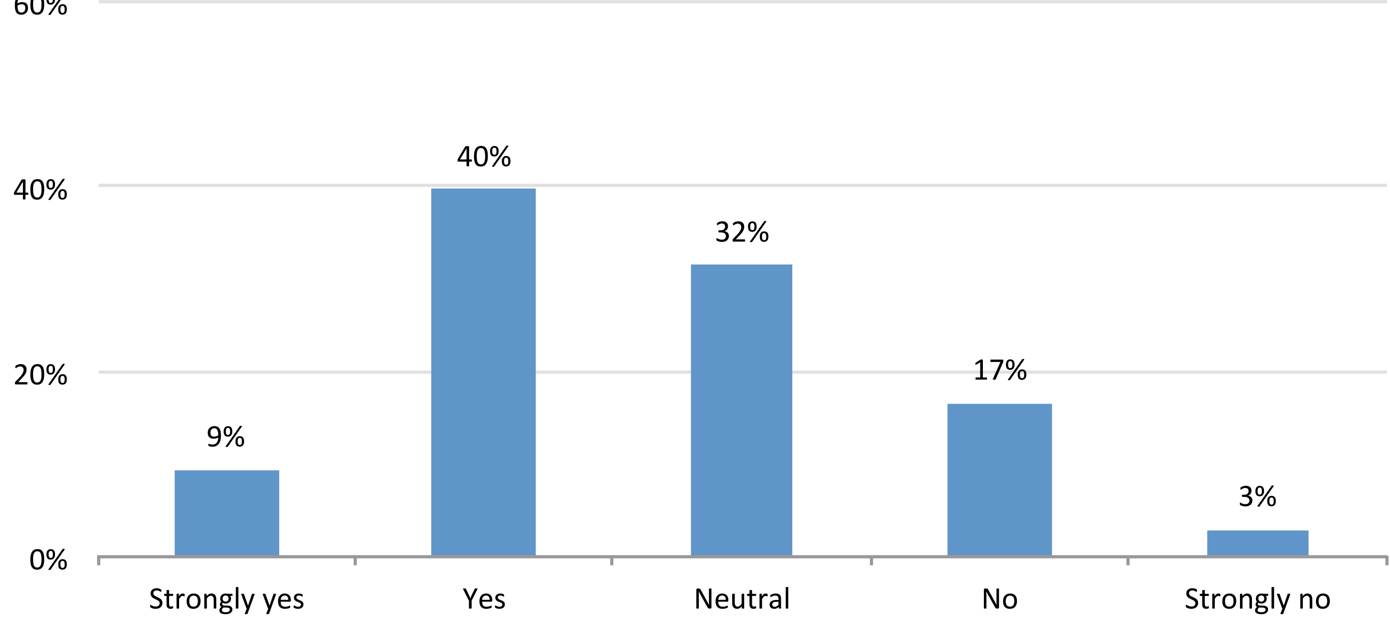
Perception of Community Safety	African American/Black	White
Safe or very safe	61%	69%
Neutral	28%	23%
Unsafe or very unsafe	11%	9%

White respondents were most likely to describe their communities as safe or very safe. While there was a substantially smaller sample size for Native American survey respondents, this group was substantially more likely to describe their communities as unsafe or very unsafe than other racial groups, and twice as likely compared to white respondents to feel unsafe in their communities.

Community Involvement and Civic Participation

Figure 5.11

Do all individuals and groups have opportunity to contribute to and participate in your community's quality of life? (n = 18,863)



49% of respondents perceived that everyone has the opportunity to participate in their community's quality of life, while 20% did not believe this opportunity is equitably distributed. Male respondents were slightly more likely than female respondents to perceive equitable access to community participation opportunities (50% and 48%, respectively).

Figure 5.12

Race and Equitable Community Participation Opportunities

Perception of equitable community participation opportunities	African American/Black	White
Presence or strong presence of community participation opportunities	45%	52%
Neutral	31%	31%
Absence or strong absence of community participation opportunities	24%	15%

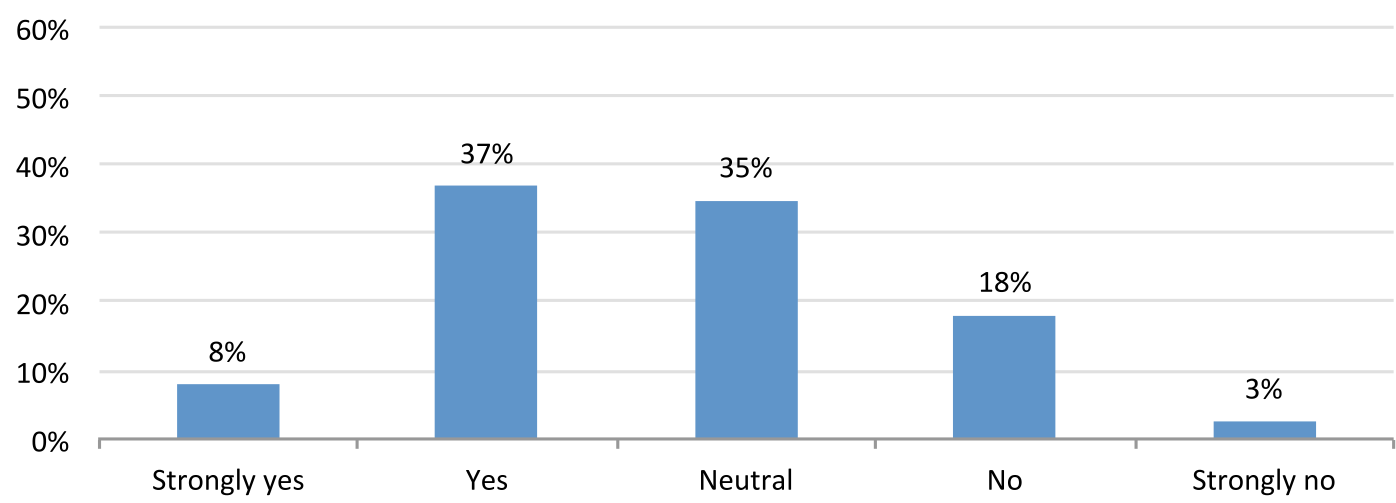
White respondents were more likely to positively assess the presence of equitable opportunities to participate and contribute to community quality of life, with 52% reporting the perception that all individuals and groups in their community had the opportunity to contribute to and participate in quality of life, compared with 45% of African American/ Black survey respondents.

Equitable Community Participation Opportunities across Districts

Just as District 3 Delta/Hills respondents assessed their quality of life lowest, they were also most likely of all districts to perceive unequal access to community participation opportunities, reporting a lack of equitable participation twice as frequently as District 2 Northeast respondents, who had assessed their quality of life highest (29% and 15%, respectively).

Figure 5.13

Do all residents perceive that they - individually and collectively - can make your community a better place to live? (n = 18,406)



45% of respondents perceived that people in their communities feel that they have the power to improve the community, while 20% did not perceive that all community residents feel this sense of empowerment. Male and female respondents were equally likely to respond with affirmative perceptions of community empowerment.

Figure 5.14

Educational Attainment and Perception of Community Empowerment

Perception of Community Empowerment	Graduate or Professional Degree	College Degree	Some College	Vocational Training	High School Diploma or GED	Less than High School
Empowered or very empowered	47%	46%	40%	44%	45%	44%
Neutral	30%	33%	38%	35%	36%	35%
Not empowered or strongly not empowered	23%	21%	22%	22%	18%	22%

Survey respondents with graduate or professional degrees were more likely than other groups to report believing that all residents perceived an ability to improve their community, while respondents who completed some college were least likely to perceive all of their fellow community members as feeling empowered to make improvements.

Figure 5.15

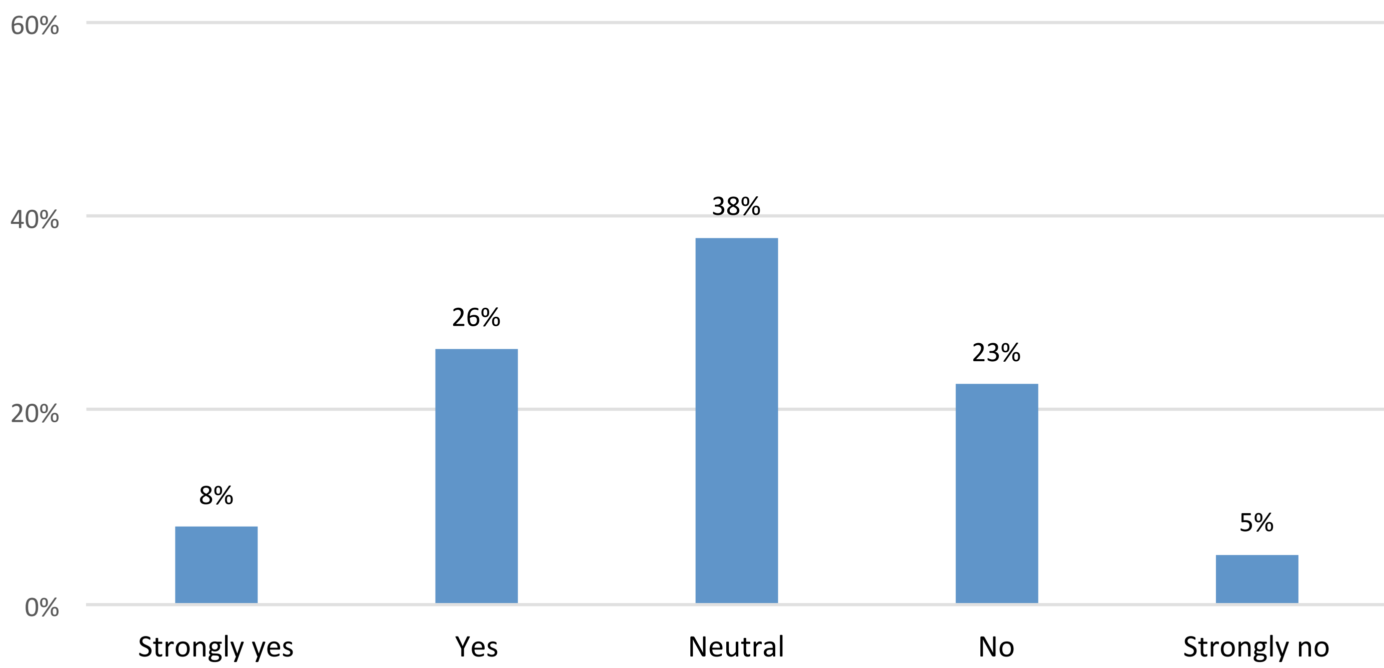
Race and Perception of Community Empowerment

Perception of Community Empowerment	African American/Black	White
Empowered or very empowered	45%	44%
Neutral	33%	37%
Not empowered or strongly not empowered	22%	19%

While the sample sizes were small for these groups, Native Americans and Latinos were the most likely to report believing that all residents perceive an ability to improve the community individually and collectively (51% and 50%, respectively). African American/Black survey respondents were slightly more likely than White respondents to positively assess their fellow community members' perceptions of personal and community empowerment, though the difference is insignificant.

Figure 5.16

Is your community working together to achieve shared goals? (n = 18,862)



Just over a third (34%) of survey respondents reported that their communities are working to achieve shared goals, while 28% reported that their communities are not. There was no difference in responses from male and female survey respondents.

Figure 5.17

Race and Perception of Community Collaboration on Shared Goals

Perception of Community Collaboration on Shared Goals	African American/Black	White
Working together or strongly working together	33%	35%
Neutral	34%	42%
Not working together or strongly not working together	34%	23%

African American/Black survey respondents more frequently perceived a lack of collective community action toward shared goals than White respondents (34% and 23%, respectively). While the sample size was small, Latino respondents had the highest proportion of affirmative responses regarding community collaboration, with 37% reporting a perception that their community was working toward shared goals.

Figure 5.18

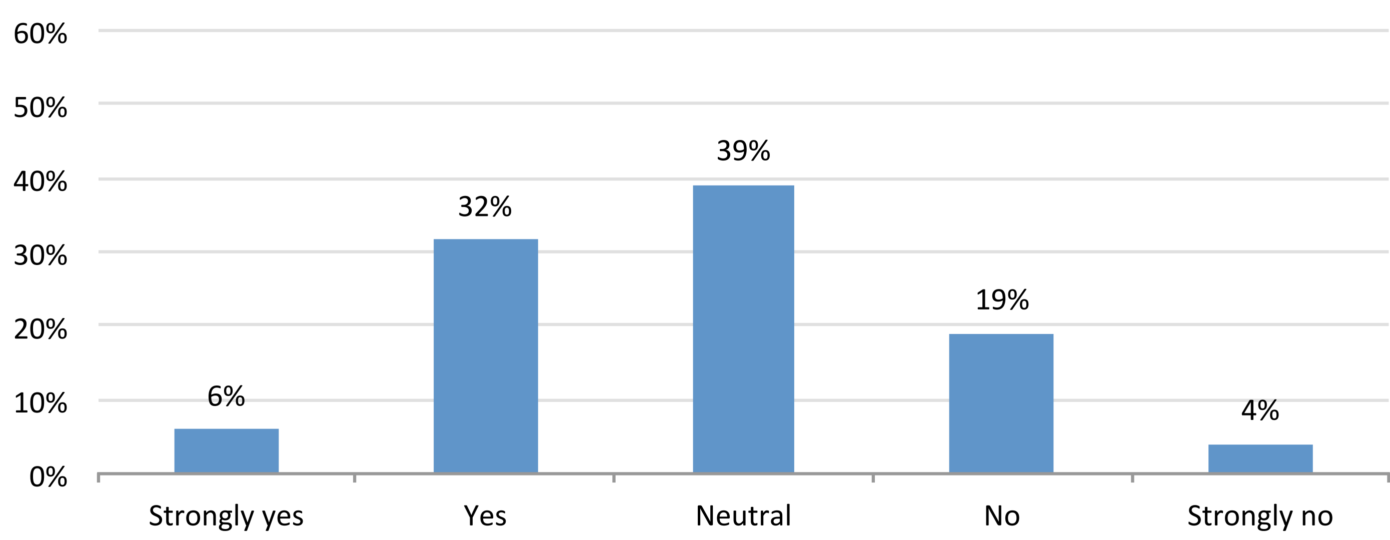
Educational Attainment and Perception of Community Collaboration on Shared Goals

Perception of Community Collaboration on Shared goals	Graduate or Professional Degree	College Degree	Some College	Vocational Training	High School Diploma or GED	Less than High School
Working together or strongly working together	36%	33%	33%	33%	35%	37%
Neutral	37%	40%	39%	39%	37%	33%
Not working together or strongly not working together	26%	27%	27%	28%	29%	29%

Survey respondents with lower educational attainment generally assessed their perception of collective community action most positively, but were also more likely than respondents with higher educational attainment to say that community members were not working together.

Figure 5.19

Is there an active sense of civic responsibility and engagement, and of civic pride in shared accomplishments? (n = 17,663)

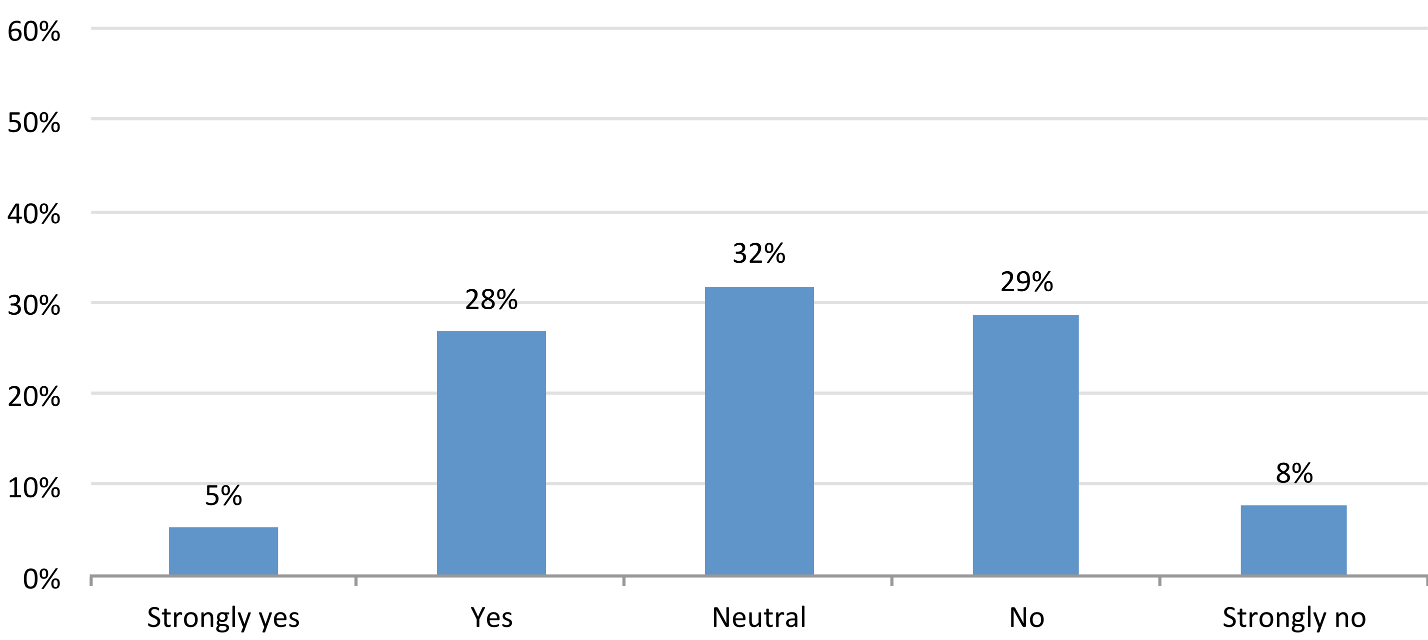


38% of survey respondents reported an active sense of civic pride and responsibility in their communities. District 3 Delta/Hills respondents assessed all aspects of quality of life most negatively, including perception of civic pride and engagement. Twice the percentage of District 3 Delta/Hills respondents reported an absence of strong absence of civic pride and responsibility, compared to District 2 Northeast respondents, who assessed all measures of quality of life most highly (36% and 18%, respectively).

Economic Opportunity

Figure 5.20

Is there economic opportunity in your community? (n = 18,427)



A greater proportion of survey respondents felt that economic opportunities were absent from their communities, with 37% reporting disagreeing or strongly disagreeing that economic opportunity existed, compared to 32% who positively assessed economic opportunities in their community.

District 3 Delta/Hills respondents were by far the most likely to report an absence of economic opportunity, with 57% answering no or strongly no. This proportion was substantially higher than the next most negative district response in District 4 Tombigbee, 38% of whom felt that economic opportunity was absent or strongly absent. District 1 Northwest respondents were substantially more likely than others to respond positively to this question, with 46% either agreeing or strongly agreeing that economic opportunity existed where they lived.

Figure 5.21

Educational Attainment and Perception of Economic Opportunity

Perception of Economic Opportunity	Graduate or Professional Degree	College Degree	Some College	Vocational Training	High School Diploma or GED	Less than High School
Presence or strong presence of economic opportunity	33%	33%	29%	28%	32%	36%
Neutral	26%	30%	33%	31%	33%	34%
Absence or strong absence of economic opportunity	40%	37%	37%	41%	35%	31%

Respondents who had completed vocational training as their highest education level were the most likely to report poor economic opportunity in their communities, with the lowest proportion reporting the presence of economic opportunity and the highest proportion of all groups reporting an absence or strong absence of opportunity. Contrary to what may be expected, respondents with higher educational attainment were more likely to negatively assess economic opportunity than respondents with the lowest levels of educational attainment. 40% of respondents with graduate or professional degrees reported an absence of economic opportunity where they lived, compared with only 31% of respondents with less than a high school degree.

Figure 5.22

Race and Perception of Economic Opportunity

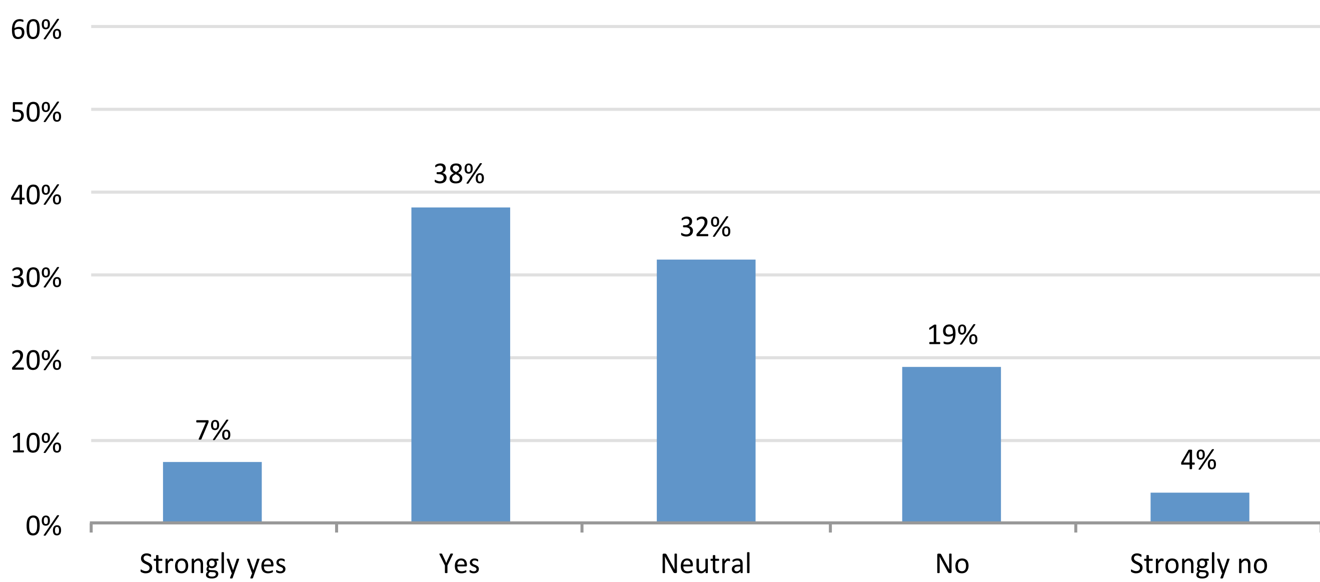
Perception of Economic Opportunity	African American/Black	White
Presence or strong presence of economic opportunity	31%	32%
Neutral	31%	33%
Absence or strong absence of economic opportunity	39%	35%

Similar proportions of African American/Black and White respondents perceived a presence of economic opportunity in their communities, though a higher proportion of African American/Black respondents reported an absence or strong absence of economic opportunity. Though the sample size was small, Latino respondents were most optimistic regarding opportunity, with 42% reporting a presence or strong presence of economic opportunity, and only 25% reporting an absence or strong absence of economic opportunity.

Social Support

Figure 5.23

Are there networks of support for individuals and families during times of stress and need? (n = 18,371)



45% of survey respondents reported the presence of support networks for individuals and families during times of stress. Just over half of District 1 Northwest and District 2 Northeast respondents positively assessed the presence of support networks in their communities (52% and 51%, respectively). District 3 Delta/Hills respondents were least likely to report the presence of support networks in times of need (36%).

Figure 5.24

Educational Attainment and Perception of Presence of Support Networks

Perception of Presence of Support Networks	Graduate or Professional Degree	College Degree	Some College	Vocational Training	High School Diploma or GED	Less than High School
Presence or strong presence of support networks	52%	48%	45%	40%	42%	43%
Neutral	28%	31%	32%	33%	34%	31%
Absence or strong absence of support networks	20%	20%	23%	27%	24%	25%

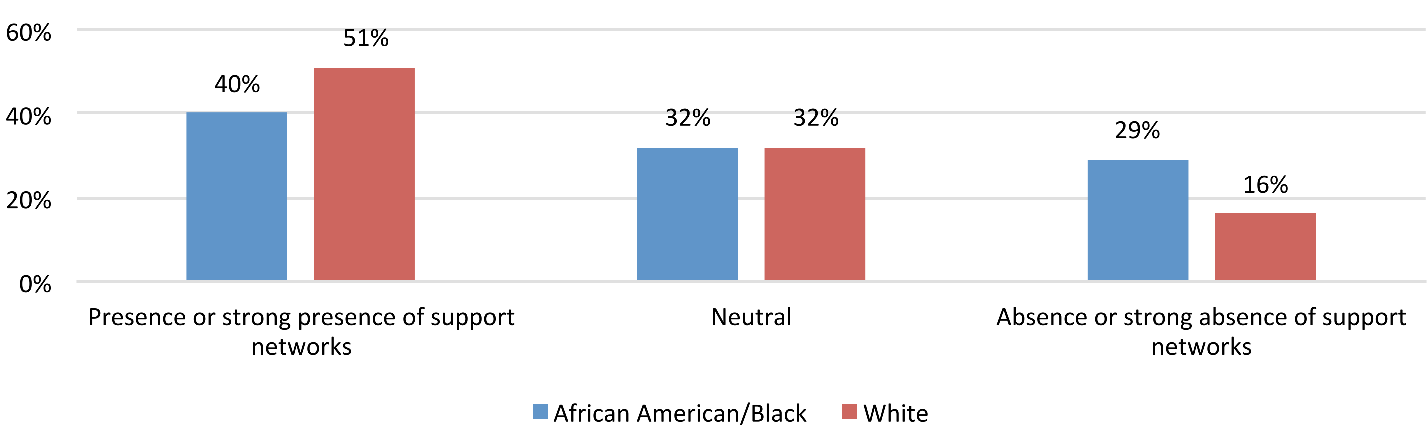
Higher levels of educational attainment generally correlated with higher perceived presence of support networks, with 52% of respondents with graduate or professional degrees reporting a presence or strong presence of support networks compared with 43% of respondents who had not completed high school. Individuals with vocational training were most negative in their assessment of the availability of support networks for people in times of stress and need.

Figure 5.25

Perception of the Presence of Support Networks by Race

Perception of Presence of Support Networks	African American/Black	White
Presence or strong presence of support networks	40%	51%
Neutral	32%	32%
Absence or strong absence of support networks	29%	16%

Figure 5.26



White survey respondents were more likely to perceive the presence of support networks than African American/ Black respondents, who were almost twice as likely to report an absence of support networks, and were more than twice as likely to report a strong absence of support networks available to support individuals and families in times of stress.

6. Conclusion

The administration of this survey to Mississippi residents helped identify patterns of health status across the state. By assessing their communities, respondents shed insight into perceptions of health and social factors personally and for the community. Limitations of the survey included low representations of males, respondents ages 45 and over and respondents for race groups including Hispanic/Latino, Asian/Pacific Islander, Other, Native American and Multi-Racial.

Common trends across all racial groups included rating the top health related problems in their communities as cancer, diabetes, high blood pressure, heart disease and stroke, and obesity. Other similarities included reporting alcohol abuse, drug abuse, and being overweight as the top risky behaviors in their communities. Review by respondent education level demonstrated that those with higher levels of education were more likely to describe their communities as unhealthy and their personal status as healthy.

Analysis of data across districts illustrated a difference in responses in the presence of a variety of health services, satisfaction with quality of life and various social factors. District 1 Northwest reported sufficient health services while District 3 Delta/Hills stated they were insufficient. Quality of life was reported as much higher in District 2 Northeast while District 3 Delta/Hills was disproportionally low. Perceptions of participation in communities and economic opportunity also differed between districts and races.

Since this was preliminary view of health status in the state, it would be beneficial to conduct further health assessments at a local level to gain a more detailed and well-rounded understanding of communities.

Focus Group Summary

Focus Group Methodology

With support from CommonHealth ACTION, the Illinois Public Health Institute, and the Mississippi Public Health Institute, the Mississippi State Department of Health (MSDH) conducted 48 focus groups and community conversations throughout each of the state's nine public health districts. Focus groups and community conversations were facilitated in the following communities:

District 1 Northwest

Hernando, DeSoto County

Clarksdale/Marks, Coahoma/Quitman Counties

Batesville/Sardis, Panola County

Coldwater, Tate County

Grenada, Grenada County

District 2 Northeast

Booneville, Prentiss County

Tupelo, Lee County

Pontotoc, Pontotoc County

Holly Springs, Marshall County

Iuka, Tishomingo County

District 3 Delta/Hills

Duck Hill, Montgomery County

Greenville, Washington County

Cleveland, Bolivar County

Greenwood, Leflore County

Indianola, Sunflower County

District 4 Tombigbee

Starkville, Oktibbeha County (3)

Columbus, Lowndes County

Okolona, Chickasaw County

District 5 West Central

Yazoo City, Yazoo County

Magee, Simpson County

Pearl, Rankin County

Vicksburg, Warren County

Ridgeland, Madison County

District 6 East Central

Meridian, Lauderdale County

Carthage, Leake County

Forest, Scott County

Newton, Newton County

Raleigh, Smith County

District 7 Southwest

McComb, Pike County

Summit, Pike County

Brookhaven, Lincoln County (2)

Woodville, Wilkinson County

District 8 Southeast

Collins, Covington County

Laurel, Jones County

Hattiesburg, Forrest County

Purvis, Lamar County

Leaksville, Greene County

District 9 Coastal/Plains

Wiggins, Stone County

Gulfport, Harrison County

Lucedale, George County (2)

Picayune, Pearl River County

Waveland, Hancock County (2)

Poplarville, Pearl River County

MSDH identified target populations for recruitment of focus group and community conversation participants based on the population response gaps from the community surveys conducted. Recruitment methods varied, but included a combination of convenience and snowball sampling. Focus groups and community conversations were facilitated and documented by two experienced facilitators from either the Mississippi Public Health Institute or CommonHealth Action. Focus groups and community conversations were conducted following a standard facilitator guide with fourteen questions. All participants signed a consent form prior to participation, and were informed that their input would be reported anonymously.

Community Assets

Sense of Community

Focus groups throughout all districts mentioned community members as their primary community asset. Focus groups across all districts described close-knit, friendly communities where people know each other and help one another. A Raleigh resident described her city as a "united and inviting community." One focus group participant in Vicksburg took pride in the strong spirit of generosity in the community, saying, "We believe in helping each other." A Starkville resident expressed pride that "people don't look down on you when you need help." Several focus groups identified community safety as among their most important assets. A Newton County resident said, "I still leave my car unlocked. I'm not worried about my safety or wellbeing."

Many focus groups throughout the state described their communities as quaint and peaceful, and frequently mentioned valuing the "small town feel" and "slow pace" of their communities. Residents of communities located in close proximity to a larger metropolitan area frequently mentioned the nearby amenities as a strong asset.

Community & Civic Institutions

Community organizations and gathering spaces like churches, schools, and parks were also frequently mentioned as important resources and assets for the community. The Boys and Girls Club was commonly identified as an important community resource for youth. Many focus groups described churches as vital social institutions in their communities, and prominent resources for supporting people in need.

Natural Beauty

Citizens also took pride in the natural beauty of their communities. Participants expressed appreciation for ample green space, abundant trees, and nature trails. Many coastal communities mentioned beaches as a source of pride and beauty.

Community Challenges

Community Divisiveness and Tension

While the sense of community was largely reported as the foremost asset among focus groups across the state, with many people describing their communities as neighborly and close-knit, concern was also voiced in focus groups throughout the state regarding the inclusiveness of this sense of community. Participants frequently used language about the community "not coming together." Expressions of concern regarding racial tension and divisiveness were threaded throughout focus groups, but were particularly strong among residents of the Delta region. For example, African American community members in one Delta region focus group reported a strong sense of invisibility throughout the community, perceiving differential access to resources and services in the community, and a lack of voice in community decision-making. In some cases, participants also alluded to a physical sense of separation and racial segregation in their communities, with African American neighborhoods lacking access to quality housing and grocery stories. An Indianola resident referred to her community as "divided along the tracks," signifying a geographic separation between African American and white people. Other participants in her focus agreed, and reported a perception that there are separate schools for the black and white students in Indianola, noting that most African American students attend public schools in the community while white students attend Indianola Academy. Classism was also perceived as a barrier to community inclusiveness. A Madison County resident observed that problems that are perceived to be related to poverty are not considered important to address, noting that "We have big health issues that people just don't seem to care as much about because there is politics involved that problems only impact the poor." A Magee community resident felt that the voices of low-income people are not heard and valued, and stressed that "people living in poverty should be brought to the table."

Access to Affordable Housing, Healthy Food, and Healthcare

The most commonly cited community challenge was the absence or the cost-prohibitive nature of basic resources to support health, including safe and quality housing, healthy food such as fresh fruits and vegetables, and healthcare providers and insurance coverage. The high cost of these resources limits people's ability to make healthy choices. One citizen in Southeastern Mississippi said, "If people have to make a choice between something that will sit on their shelf and keep for several weeks versus something fresh that will spoil within a week, they will choose the processed food that will keep. And it's the processed foods that are cheaper."

Access to Quality Employment

Another frequently cited community challenge was a lack of good employment opportunities throughout the state. Focus group participants also reported that jobs in their communities are usually low paying. The absence of good job opportunities compromises many Mississippians' access to basic resources like food, shelter, and healthcare. One community member from Northwestern Mississippi stated, "This is the lowest paid state and everything is [priced] high." Starkville residents observed that senior citizens that should be in their retirement years often are compelled to rejoin the workforce to help support their families.

Community Infrastructure

Focus groups frequently reported damaged or lacking community infrastructure as important community challenges, and most commonly discussed this in the context of transportation. Participants frequently described streets and sidewalks as being deficient or in a state of disrepair, which constitutes a particular barrier to active

forms of transportation, and often makes walking an inviable option. Community members also reported a lack of public transit, which limits access to community resources for individuals who cannot drive or do not have access to cars, including youth, seniors, and low-income populations.

Some communities perceived that they received less backing from the state to support community infrastructure than other regions. A Meridian resident said, "East Central Mississippi is a forgotten area of the state."

Access to Recreational Opportunities

Many community members expressed concern regarding the lack of recreational activities available in their communities, particularly for senior citizens and youth. Residents in the Delta region in particular reported an absence of extracurricular and social activities for young people.

Community Safety

While community safety was a chief asset mentioned by some communities throughout the state, others mentioned the lack of community safety as one of the biggest detractors from quality of life in their communities. Community members in Marks, Sardis, and Grenada, all in Northwestern Mississippi, described high rates of crime and violence. Residents of Magee in West Central Mississippi reported that domestic violence is one of their most serious problems. One resident stated, "The sheriff's department will sometime have five deputies dealing with domestic violence. Could be [a result of] drugs or alcohol-related, poverty, stress, low income, lack of sense."

Distrust of Healthcare Providers and Facilities

Many communities throughout the state reported a strong distrust of healthcare providers and facilities, perceiving their area hospitals as providing low quality care. Community members from Sardis, Mississippi said that they referred to the local medical center as "Try your Luck" Hospital. Community members in Picayune referred to their local hospital as "a Band-Aid station." This sentiment was echoed by Pontotoc residents, who described their local hospital as "more of a first-aid station" where people are "patched up" until they can be transported to another facility. A resident of Southeastern Mississippi said, "You can't go to the hospital here. They don't know what's wrong with you. They just give you medicine and send you away. Then when you go to [a hospital in a bigger city] they tell you what's really wrong and you get better."

Several focus groups in small communities reported distrust of their local healthcare providers due to confidentiality concerns. As one Newton County resident explained, "There's a lack of trust of the health system because it's a small town. People talk about you." Confidentiality concerns also discourage some people from taking advantage of services at the health department. A focus group participant in Southeastern Mississippi said, "The health department has a negative stigma...you don't go there because everyone will know your business."

Definition of a Healthy Community

When asked to describe a healthy community, focus group participants across the state described a community that has productive, engaged, and responsible citizens that work together. Healthy food, quality healthcare, and opportunities for physical activity and recreation would be accessible and affordable for all citizens. Community members would also have access to great schools, good jobs, and quality healthcare facilities. Everyone would have access to community resources and amenities, including playgrounds, farmer's markets, walking trails, and libraries. An ideal community environment would have ample green space, clean air and water and would be free of litter, dilapidated buildings, abandoned houses, gang signs, and advertisements for alcohol and tobacco. Community infrastructure like roads, bridges, and sewers would be in good repair. Community leaders would be respectable and responsible, and local businesses would flourish. Citizens would feel safe, content, and socially, emotionally, and physically well, and would help and support each other. Community members from Starkville, Mississippi said that a healthy community would "make people feel full so that they give back." Community members in Newton County said that their ideal community "...[would not be] afraid to help others when they are in need."

Biggest Health Issues

When asked about the biggest health issues in their communities, focus group participants across the state listed many of the same conditions. Chronic diseases, including obesity, diabetes, hypertension, arthritis, and cancer, were the most frequently mentioned health conditions. Mental health, including depression, substance abuse, and stress, were also mentioned in focus groups across the state. STIs were also commonly identified as a concern.

In addition to discussing specific conditions, participants also described causes of poor health in their communities. Community members across the state pointed to the lack of access to affordable healthy food, healthcare, and access to physical activity as among the biggest health issues that contribute to poor health in their communities. Residents in the Delta, on the Coast, and in West Central Mississippi mentioned environmental concerns as some of the biggest health issues. Coastal communities affected by the BP Oil Spill were particularly conscious of environmental factors that contributed to poor health in their area.

Participants also referenced social and economic determinants as the biggest health issues in their communities, identifying poverty, unemployment, lack of job opportunities, and cultural factors, including lack of personal responsibility, as root causes of health problems where they live.

Barriers and Challenges

In discussions about what makes it difficult for people to stay healthy in their communities, participants discussed environmental, economic, social, and cultural determinants of health.

Environmental Barriers to Health

The built environment in our communities shapes the choices that are available to us. The presence of sidewalks, nature trails, and bike paths make it easier to be physically active, and the presence of grocery stores and farmers markets selling fresh, affordable produce make it easier to consume nutritious foods. Mississippians throughout the state described a healthy environment as one that is free of pollution, has ample green space and recreation space, well-maintained community infrastructure, and an absence of abandoned homes and gang signs.

The most commonly cited environmental barrier to good health was a lack of community spaces in which citizens can be physically active, including sidewalks, walking trails, and affordable or free exercise facilities. One Poplarville resident reported," [There is] no place to walk, no sidewalks…you have to walk in the middle of the street, which is bad unless you want to get run over by a car flying down the road." Another environmental barrier to physical activity that came up across many communities is a lack of safety, due to violence and stray or unleashed dogs. An absence of community safety is a particular barrier for children, as parents are reluctant to let their children play outdoors if they perceive their neighborhoods as dangerous. Some community members reported that a lack of safety in their neighborhoods prevents them from being active. One Southeastern Mississippi resident stated, "We have a park, but it's not safe. You have to go to the white neighborhood to go to a safe park. And then you have to drive."

Pollution was another frequently mentioned environmental barrier to health. Focus group participants listed poor water and air quality as some the primary environmental contributors to poor health. This issue was particularly strongly in the Delta region, where participants reported that cotton gins, crop dusting, factories, burning tires, and the manufacture of illegal drugs all compromise air quality, and where, as one Indianola resident said, "There's lead and other toxins in the water but the city can't fix the problems." Coastal community residents also expressed concerns regarding the lingering impact of the BP Oil Spill and other industrial environmental damage, which they feel have negatively affected local water supplies. A Picayune resident stated, "I don't trust the city water. I boil it anyway."

Focus group participants also frequently discussed the unhealthy food environments in their communities, noting the abundance of fast food restaurants and the scarcity of fresh, affordable produce, and explaining that because unhealthy food is so much more accessible and convenient, people are more likely to consume it. The absence of grocery stores in some communities creates a particularly difficult barrier to healthy options, resulting in an overreliance on nearby fast food and corner stores. A McComb resident reported, "Many people cannot get to places that offer healthy things."

Economic Barriers to Health

Economic challenges were the most commonly cited barriers to good health throughout focus groups across the state. References to the high cost of health care, healthy foods, safe housing, and recreation opportunities were threaded throughout focus groups in every district.

The cost of healthcare was a commonly voiced concern among focus groups across the state. Focus group participants reported that uninsured individuals have very few options to access any kind of medical care, but even those who have insurance coverage face barriers due to the cost-prohibitive nature of medical care. As one Starkville resident explained, "Some people don't have insurance and if they do, they have high deductibles. Because of this, they don't go to the doctor because it's too expensive. I'll never reach my deductible and can't afford to go when it costs $200 every time." Another community member echoed this concern, saying, "So why even go to the doctor if you can't afford the medicine he will give you? So people just don't go until they are really sick." A Carthage resident stated, "[paying for] health insurance is keeping me poor."

While some residents across the state expressed concern that community members are overly dependent on public support like food stamps, others felt that these benefits should be extended to help working families that cannot make ends meet but do not qualify for public assistance. One focus group participant said that "working people may be $3 over the guidelines and they can't get help. They need assistance." Another said, "On Medicaid, [the] quality of care may differ, but at least you can see a doctor. A family of four with two providers who earn $10 an hour a piece cannot afford healthcare." Other participants agreed, perceiving that it can be more profitable

not to work so families qualify for assistance. A Starkville resident said that she used to have a full time job with benefits, but when her child was diagnosed with a heart condition, she couldn't pay her medical bills, despite having health insurance. She had to reduce her work hours so her child could qualify for Medicaid.

In addition to the lack of access to affordable basic resources, focus group participants further described that income-stressed families are at risk of poor health because parents working multiple jobs do not have time to cook and therefore must rely on fast food or other unhealthy convenience foods.

Several focus groups also emphasized the role of economic hardship in perpetuating stress and mental health issues. A Newton County resident explained, "Financial hardship affects multiple aspects of life and can be the cause of depression and drug use and abuse."

Cultural Barriers to Health

Many focus groups referenced cultural practices, particularly related to eating, that are detrimental to the health of their fellow community members. Participants frequently referred to southern cuisine as unhealthy and high in fat, and reported that eating plays a central role in social gatherings. One Greenville resident stated, "We socialize around food, it's a part of our society here." A Pontotoc resident echoed this, saying, "All good times revolve around food." In Southeastern Mississippi, a focus group participant noted that while people still eat traditional southern cuisine, they are not as physically active as previous generations used to be, saying, "We still cook everything like our grandmamas did, but we aren't getting the exercise like they did." Focus group participants in Iuka emphasized that cultural changes can only happen if they are supported by access to healthy options, such as affordable, healthy menu options at restaurants.

Several focus groups also reported that they perceive a cultural acceptance or sense of resignation regarding obesity. A Yazoo County resident perceived a pervasive attitude in which people think, "My grandmother died from stroke, heart attack or diabetes, so I will too." A Grenada resident echoed this, saying, " It almost seems to be okay that everyone is obese." Other groups observed a cultural tendency to ignore or dismiss health inequities. One focus group participant in Madison County said, "There are ethnic disparities in the state but people want to put their heads in the sand."

Social Barriers to Good Health

Focus group participants frequently expressed concern regarding the lack of recreational and social opportunities in the communities, particularly for youth. One resident stated, "It didn't used to be this way. There aren't any recreation programs and the schools are getting worse. There is nothing for the kids to do but stay inside and play games." Residents of the Delta region in particular expressed a lack of activities and opportunities for young people.

Another social problem is the lack of inclusiveness that many participants of color reported in their communities. Several focus groups also perceived that they did not have a voice in the community and that elected officials fail to act in the interests of community members.

Social norms and stigmatization of healthy behaviors can also be a barrier to good health. As one resident in Greenville explained, "There is a stigma around walking in Greenville; people either assume you do not have a job, or are up to no good." The increasing emphasis on technology and digital media as forms of entertainment and communication are also detrimental to optimal health, increasing sedentary behavior, particularly among youth. One resident of Coldwater proclaimed, "It used to be just older folks. Now with technology, the kids [are getting sick too]...[There are] kids with diabetes and high blood pressure. Our seniors are our most healthy citizens!"

Behavioral Barriers to Health

Lack of personal responsibility was a concern that continually surfaced in focus groups throughout the state. Many people reported that citizens fail to take ownership over their health and do not feel motivated to make healthy food choices or to exercise. A Booneville community member said, "People aren't motivated and don't show initiative to be healthy." A participant in Starkville explained, "You got to have the determination...It's there but you have to make yourself go exercise no matter what your income is." Another community member emphasized the importance of parents modeling and instilling healthy habits from an early age, saying, "Children see their parents exercising and they learn."

Political Barriers to Health

Focus group participants also identified that policymakers can create barriers to good health by failing to enact laws that protect the health of the public, including Medicaid expansion and proper investment in public institutions like schools. Others expressed concern over the failure of lawmakers to invest in a mental health safety net, which has resulted in overreliance on the correctional system. One Southeastern Mississippi focus group participant said, "If someone is mentally ill and gets picked up by the police, they get sent to jail, not treated."

Conflicts of interest among politicians were identified as a barrier in Yazoo County, where one participant explained, "Leadership owns bars and businesses that promote unhealthy behaviors so they do not pass ordinances to regulate use."

Health Resources and Assets

When asked about community resources that help people stay healthy, focus group participants most frequently identified recreational facilities like the YMCA, gyms, parks, and public swimming pools. They also discussed features of their communities that make healthy food more accessible, including farmer's markets, community gardens, and food pantries. The Mississippi Food Network, a network of church-based food pantries across the state, was mentioned by citizens throughout the state as an important resource for low-income families.

Focus group participants also identified civic and community organizations, like the Lion's Club, the Boys and Girls Club, and local churches as important resources that help community members stay active and engaged, and can serve as good mechanisms for educating community members about health issues by holding health screenings, walk-a-thons, and fitness classes.

Less frequently, focus group participants identified walk-in clinics as important community health resources. Other focus groups, however, emphasized that hospitals and clinics in their communities were either absent or not viewed as assets for healthy living, due to their inaccessibility and low quality care.

A few focus groups also mentioned community services that help to meet the needs of vulnerable residents, such as transportation services for seniors and disabled individuals who cannot drive, and the Silver Sneakers exercise program, which helps aging community members stay physically active.

In several focus groups in the Delta region, participants did not perceive the presence of any health resources in their community.

Trusted Information Sources

When asked about trusted health information sources, the majority of focus groups mentioned the internet as their preferred source of information on health issues. Other preferred information sources included family and friends, as well as community-based organizations, particularly churches. Some focus groups mentioned other media sources, including television and newspapers, as valuable sources of health information.

Though a few groups identified doctors and other medical professionals as valuable sources for health information, others reiterated the strong community distrust of medical facilities, and reported a perception that doctors were more interested in giving medication than in educating patients on how to be healthy. A Southeastern Mississippi focus group participant reported, “Doctors don’t tell us where to get help…they just give us more medicine.” Cleveland residents echoed this sentiment, and expressed a desire for doctors that “[care] about you and not your money.”

A few focus group participants mentioned that their local health department is a trusted and valued source of health information, and several others reported that they do not currently get health information from the health department, but see this as an important opportunity to disseminate credible health messaging and education to the public.

Because the internet was the most commonly cited as the preferred medium for health information, it is important to ensure that community members have computer and internet access. Duck Hill residents in the Delta region expressed the need for a computer center at the library so community members can access health information for free. Libraries can also play an important role in helping community members navigate the internet to find reliable information sources on health issues.

Ideas for Community Health Improvement

Focus group participants generated many ideas about how to strengthen community health where they live.

Make Healthy Food More Accessible and Affordable through Policy and Environmental Change

Because economic challenges were identified as a substantial barrier to health for many Mississippians, focus groups suggested ways to make healthy eating choices less cost-prohibitive. Focus group participants recommended that political leaders work to make healthy foods more affordable. One suggestion proposed by Lucedale community members was to allow SNAP (food stamp) recipients to use their benefits at the farmer’s market. Focus group participants also suggested that local leaders work to attract grocery stores into neighborhoods that currently lack them and make farmer’s markets more accessible by extending their hours. They also identified the need for schools and churches to develop summer feeding programs to address food insecurity among low-income children.

Increase Healthy Eating through Community Education

Focus group participants reported that health education and health promotion messaging are key components of encouraging healthy behaviors among community members. Participants requested that community organizations offer nutrition classes and that the health department share health information with the public, possibly through educational pamphlets included in citizens’ utility bills to ensure a wide audience is reached.

Several focus groups recommended that the health department should increase public communication and outreach. One community resident in Meridian said, “The health department should have a bigger presence in the community, offering health education.” Another resident said, “[The] health department should advertise their website and give information in one area.”

Foster Economic Development

Economic development to raise the standard of living and earnings of citizens would also support good health among Mississippians. Locally, participants said that community leaders should work to attract businesses that offer decent wages and benefits, and that policymakers should foster the development of strong local businesses. They also called on policymakers to invest in education and vocational training so community members are competitive for better jobs.

Come Together as a Community

References to “coming together” as a community were threaded throughout many community focus groups across the state. Focus group participants used this language to convey that community members need to unite together to work toward solutions to community problems, and work to remove divisiveness and tension that has historically kept community members separated. Focus group participants frequently alluded to the importance of black and white communities coming together, and suggested that churches are a good forum for facilitating relationship building to foster collective, united community action.

Increase Access to Physical Activity and Recreation

Community members called for a greater number of recreational facilities and activities to make it easier for the community to stay physically active. Infrastructure to support active transportation like sidewalks and bike trails were also suggested.

Greater Communication and Fostering of Trust between Policymakers and the Public

Many focus groups reported a need for greater accountability, transparency, and responsiveness among local policymakers to build the community’s trust. Many reported that elected officials often fail to follow through on the promises they made when running for office, and frequently make decisions that are contrary to the best interests of the public. Focus group participants reported that policymakers need to engage the public in dialogue to understand what residents need and want, rather than acting on what they assume residents need. Community members wanted the opportunity to express their opinions in public forums, and through additional focus groups and community conversations. Others perceived that lawmakers did engage residents in dialogue, but failed to act on voters’ wishes. One resident explained, “They keep asking questions but are not doing anything about it.” Focus group participants also said they wanted to see policymakers lead by example in modeling healthy behaviors and promoting community health.

A number of focus groups also talked about the lack of accountability among politicians beyond the local community, and emphasized the importance of holding lawmakers accountable for their failure to ensure that all Mississippians have access to insurance coverage and quality healthcare.

While focus group participants emphasized the need to hold policymakers accountable, others added that community members also have the responsibility to be civically engaged so their voices are heard. Residents of Marks, Mississippi stressed that in order to improve the community, the public needs to attend school board meetings, organize town hall meetings, and vote.

Increase Access to Healthcare Providers and Quality of Healthcare Facilities

Throughout all focus groups across the state, the cost of healthcare and challenges accessing medical care were raised as substantial barriers to staying healthy. Focus groups identified the need for policymakers to make health care more affordable and to assure access to insurance coverage for all Mississippi residents.

Communities also mentioned that the absence of health care providers and facilities like clinics or hospitals presented a substantial barrier that can be addressed through creation of programs that attract hospitals to the area and that incentivize healthcare providers to move to the area. Concern regarding low quality care prompted focus group participants to recommend community investment in upgrades to hospital facilities to ensure they better address the needs of the community. Participants also suggested that the health department and community organizations could offer health screenings and low cost dental and vision care to improve access for low-income and uninsured residents. Others reported that their community used to have a flu shot van that was an important community health resource, and stressed that this service should continue to be funded as many people depend on it. One community suggested that creating a local guidebook of health resources could foster awareness of health services offered in the area.

Increase Public Safety

Several focus groups throughout the state called for a stronger presence of law enforcement in their communities to increase public safety and to eliminate the problems caused by illegal drugs. On the other hand, some community members expressed the need to improve accountability to address corruption of local law enforcement, which they perceived to perpetuate community violence.

Many communities reported that people do not feel safe outside after dark, and suggested that the installation of streetlights could increase community security and encourage people to go outside. One coastal resident reported that the installation of streetlights in her community following Hurricane Katrina was a substantial boost to public safety and quality of life in her community.

Foster Personal Responsibility

At a large number of focus groups throughout the state, participants referred to the importance of personal responsibility and ownership over individual health, and recommended that this be fostered to improve health in their communities. However, focus group participants suggesting this often reported that they could not think of any ideas to propose that could accomplish this. Several groups said that personal responsibility could be fostered through encouraging people to "get back to God."

While many emphasized the importance of personal responsibility, they also acknowledged that healthy choices must be made accessible so it is possible for people to make these choices. A Booneville resident referred to the high cost of recreation and healthy foods as a "lose-lose situation. Low income families can't afford healthy options." A resident in Southeastern Mississippi explained, "People need to take individual responsibility, but they have to have the resources to be able to be healthy. If healthy foods or places to exercise are not easy to get, then people won't use them."

Foster Socialization Opportunities

Residents of many communities expressed the importance of increasing social activities to enhance community engagement, particularly emphasizing the importance of offering social programs for seniors to protect them from isolation and to keep them active and healthy.

Having adequate opportunities for youth was also a concern across communities throughout the state, which community members felt contributed to the lack of engagement of young people. A few focus groups suggested that mentorship programs could develop leadership skills and foster civic responsibility in youth.

Enhance Community Beauty

Community members also called for aesthetic enhancements to their communities, explaining that beautifying their towns would enhance quality of life and foster a sense of community pride. Communities can be beautified by creating more green space, repairing dilapidated buildings and abandoned houses, and by removing litter and pollution from the air and local waterways.

Improve Water Quality

Water quality issues were commonly voiced throughout the state, with many focus group participants expressing concern regarding the safety of their public water supplies. Improving local waterways would improve environmental health and could encourage community residents to drink more water, which is important for staying healthy.

Create a Volunteer Community Mental Health Worker Program

Many communities throughout the state identified the lack of access to mental health care as a substantial barrier to community wellbeing. Mental health care is also frequently cost-prohibitive and is not well covered even for those with good insurance. To address this problem, one community member suggested that the health department could recruit and train community health workers to deliver services such as mental health first aid and crisis resolution. These community health mental health workers could help address the growing and unmet demand for mental health care in a low cost, culturally appropriate manner.

Create a Strategic Plan for Improving the Community's Health

One focus group suggested that the health problems in their community would be best addressed through the creation of a strategic plan for improving the community's health. The strategic plan would prioritize health needs and determine how to leverage and strengthen the community's assets to support health. Participants were told that their focus group feedback will be compiled into a report that will inform the development of a State Health Improvement Plan and a local Community Health Improvement Plan.

Conclusion: Cross-Cutting Themes

Community input from the statewide survey and community focus groups revealed a variety of cross-cutting themes. Survey respondents and focus group participants reported similar perspectives on many aspects of health and quality of life in their communities.

Importance of Social and Environmental Factors in Shaping Community Health

When asked about the most important factors in shaping community health, both survey respondents and focus group participants emphasized the importance of social and environmental determinants of health. Survey respondents and focus group participants both commonly identified safety and access to quality education and good jobs as critical in contributing to community health. Survey and focus group participants also frequently referred to the importance of access to healthcare, and commonly identified lack of healthcare access as significant barrier to health in their communities.

Community Quality of Life

There were mixed perspectives on quality of life across the survey and focus group input. Iin both the survey and focus groups, participating African Americans and residents of the Delta Region were more likely to report dissatisfaction with quality of life. Focus group participants across the state reported that the most important barriers to quality of life across Mississippi include community divisiveness and tension, lack of access to resources including affordable housing, healthy food, and healthcare, lack of access to quality employment, lack of community infrastructure and recreational opportunities to support physical activity and to build social relationships, and distrust of healthcare providers. Commonly cited assets that build and strengthen community health and quality of life include accessible and affordable recreation spaces, civic and community organizations like churches and the Boys and Girls Club.

Community Participation

Just as African American survey and focus group participants were more likely to report dissatisfaction with quality of life, participating African Americans were also more likely to perceive insufficient presence and access to community resources and fewer opportunities to participate in the community. Several focus groups across the state reported perceiving differential access to community resources and civic opportunities for African Americans, and some African American focus group participants reported the perception of lacking a voice in community decision-making while the voices of white residents are heard and respected.

Both survey and focus group participants frequently reported that their communities were not sufficiently civically engaged and many reported the perception that community members were not involved in working together toward shared goals. Focus group participants frequently alluded to the need for members of their community to “come together,” to reduce divisiveness and to work collectively on community improvement efforts. Churches were often cited as an ideal mechanism to build community unity and to mobilize people across the community to work toward collective action.

Most Important Health Concerns and Risky Behaviors

Chronic disease and obesity were top health concerns cited among both focus group participants and survey respondents. Participants in both the survey and focus groups identified substance abuse, poor eating habits, and lack of exercise as some of the most important risky behaviors that have a substantial detrimental impact on health in their communities.

Concerns Regarding Healthcare Access and Quality

Survey and focus group participants frequently perceived the need for greater access to health and social services in their community. Community members across the state also frequently expressed dissatisfaction with healthcare providers in their communities, though focus group participants were more likely to report negative perceptions than survey respondents. Forty-seven percent of survey respondents reported being either satisfied or strongly satisfied with the healthcare system in their community, while focus groups frequently reported dissatisfaction with the quality and access of healthcare in their communities, with several focus group participants communicating a strong distrust of healthcare providers in their communities.

The issue of insufficient access to insurance coverage and affordability of healthcare was a theme in both the focus group and survey responses. 19% of survey respondents lacked any insurance coverage. In focus groups across the state, residents emphasized the cost of healthcare as a substantial barrier, reported that high premiums, copays, and deductibles make health care cost prohibitive even for those with private insurance coverage.

Mississippi State Health Assessment: Forces of Change Report

June 2014

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Introduction

In 2014, the Mississippi State Department of Health embarked on a journey to develop a State Health Assessment (SHA) by adapting the Mobilizing for Action through Planning and Partnerships (MAPP) process. MAPP is a community-driven[38] strategic planning framework that assists communities in developing and implementing efforts around the prioritization of public health issues and the identification of resources to address them as defined by the 10 Essential Public Health Services. The MAPP process includes four assessment tools, as shown in the graphic below.

Within the MAPP process, there are four assessment tools. One of these assessment tools is the Forces of Change Assessment (FOCA). The FOCA is aimed at identifying forces – such as trends, factors, or events – that are or will be influencing the health and quality of life of the community and the work of the state public health system.

- **Trends** are patterns over time, such as migration in and out of a community or a growing disillusionment with government.
- **Factors** are discrete elements, such as a community's large ethnic population, an urban setting, or the jurisdiction's proximity to a major waterway.
- **Events** are one-time occurrences, such as a hospital closure, a natural disaster, or the passage of new legislation.

During the FOCA, participants answer the following questions:

- **What is occurring or might occur that affects the health of our state or the Mississippi public health system?**
- **What specific threats or opportunities are generated by these occurrences?**

MAPP Model, Achieving Healthier Communities MAPP User's Handbook
http://www.naccho.org/topics/infrastructure/MAPP_Handbook_fnl.pdf

Forces to be considered should include the following categories of influence: (1) Social, (2) Economic, (3) Political, (4) Legal, (5) Environmental, (6) Technological, (7) Scientific, and (8) Ethical. The group may also identify other categories of forces of change specific to the state.

38 For the purposes of the MAPP process, the Mississippi State Department of Health defines community broadly as the residents of the state of Mississippi and the state's partners through the state's public health system, including state and local government agencies, businesses, non-profits, academia, and other entities that influence the health and well-being of Mississippians.

Assessment Methodology

On June 5, 2014, the Mississippi State Health Assessment and Improvement Committee (MS-SHAIC) convened to participate in the Forces of Change Assessment. A neutral facilitator from the Illinois Public Health Institute guided participants through the following process:

1. The definitions and components of the Forces of Change Assessment were reviewed.
2. Flip charts for each category of influence were placed around the room.
3. The participants divided into small groups around a category of influence. A note-taker was assigned to each category of influence.
4. Each small group brainstormed and listed relevant forces of influence and accompanying threats and opportunities.
5. After a specified period of time, the small groups moved clockwise around the room to the next category of influence flip chart, where they added to the previous group's ideas. Note-takers did not rotate and served as the group historian to brief the new group on the list developed by the previous group and the rationale provided by group members for their selections.
6. This process of review and expansion of notes was repeated two more times to expose participants to multiple categories for the purpose of fully exploring each category.
7. Participants returned to the category of influence chart they started with and reviewed the additions other participants made to their original list. Participants were asked to identify the most important forces of change from their list or those that were thematic from the categories they reviewed.
8. Each small group identified a reporter for their group to share a brief summary with the large group, citing the most important forces for their category of influence and the potential threats and opportunities presented by the force. All small groups shared the summary while participants were encouraged to ask questions or add comments as needed.

Following the report-out from each group, the facilitator asked each individual participant to think about the forces from all categories as well as the themes and identify the top three forces overall. Participants were given post-it notes to record the top three forces (one force per note) and post them on the wall in the back of the room. Selections for the top forces were grouped and counted to identify the top forces based on the participant vote.

Executive Summary: Core Issues Emerging from the Forces of Change Assessment

The Forces of Change identified in this assessment represent important issues affecting Mississippi, and their potential implications on the health and quality of life of Mississippians and on the state's public health system.

The analysis of potential forces from all categories explored by the Mississippi State Health Assessment and Improvement Committee (MS-SHAIC) for the Forces of Change Assessment resulted in the following major cross-cutting themes:

Health Care System Infrastructure and Access to Care

Poverty

Environmental, Structural, and Behavioral Barriers to Health

Health Literacy and Health Education

Lack of Political and Financial Support of Public Health

Cultural Competence

Impact of Chronic Disease

Changing Demographics

Impact of Natural and Human-made Disasters

Urban/Rural Disparities

These cross-cutting themes will be described in detail on the following pages. Keep in mind that the text in this report reflects the general majority opinion of the MS-SHAIC, but may not represent the views of each of its individual members.

Cross-Cutting Forces of Change in Mississippi

Health Care System Infrastructure and Access

Shortcomings in the health care delivery system emerged as a significant issue throughout the dialogue in the FOCA. Participants expressed concern regarding the structure of the health care system, which strongly overemphasizes acute, tertiary, and individually-focused care and underemphasizes preventative, primary, and population-based care, resulting in an unhealthy population and unsustainably high health care costs.

Lack of access to health care is a critical problem for the Mississippi health care system. High rates of uninsured individuals result in limited access to primary care for many, driving up unnecessary usage of Emergency Rooms, where care is uncoordinated and very costly. Mississippi faces provider shortages that particularly impact the state's most vulnerable residents, including Medicaid recipients, the working poor, undocumented immigrants, and rural residents.

The current health care payment model presents a further challenge. Because the health care system's payment model is driven by treatment rather than prevention, wellness is underemphasized. While primary care plays a critical role with regard to care coordination and medical homes in the health care system, low compensation and low Medicaid reimbursement rates have led to a shortage of primary care providers, which limits access to care for vulnerable Mississippians and drives the exacerbation of health conditions from preventable and easily treatable diseases to complex, chronic diseases that are very debilitating and costly. Another challenge of the health care system payment model is the high level of cost-shifting, which overburdens both hospitals and state taxpayers. Cost-shifting refers to the ways that the system covers the costs of uncompensated care for uninsured and underinsured patients. Costs are covered by programs and grants from federal, state, and local governments; charity care and pro bono work by individual providers; and hospital write-offs. Thus, there are two types of cost-shifting: (1) taxpayers fund programs and grants to cover the costs of uncompensated care, and (2) medical providers and hospitals provide charity care which may result in increased prices for insured patients.[39] Failures in our health care delivery and payment infrastructure also put pressure on the public health system to fill in gaps, which is increasingly challenging in the context of limited funding for public health. Relying on the underfunded public health system to fill these gaps also diverts funding from other important public health efforts to improve population-level health.

Given the inadequacies of the current health care delivery system and high rates of poverty that leave over 20% of Mississippians uninsured, it is particularly troubling to many participants that Mississippi has chosen not to expand its Medicaid program under the Affordable Care Act, which would provide coverage for nearly 300,000 poor Mississippians who currently lack insurance. If the state chose to expand its Medicaid program under the Affordable Care Act, the federal government would cover 100% of costs for newly covered Medicaid recipients through 2016, when states would begin picking up some of the additional costs. Eventually, federal matching will be reduced to 90% in 2020, with states covering the remaining 10% of the cost of expansion. New federal funds flowing to the state would have increased from $426 million in 2014 to $1.2 billion in 2015, providing economic stimulus through increased spending and an estimated 8,860 new jobs by 2025. However, the tax revenue generated by this growth would not offset all of the additional costs to the state budget over time.

39 Coughlin, T. A., Holahan, J., Caswell, K., & McGrath, M. (2014, May 30). *Uncompensated Care for the Uninsured in 2013: A Detailed Examination*. Retrieved August 19, 2014, from http://kff.org/report-section/uncompensated-care-for-the-uninsured-in-2013-a-detailed-examination-cost-shifting-and-remaining-uncompensated-care-costs-8596/

From 2017 onward, projections show that there would be an additional strain on the limited state funds as a result of expansion, eventually reaching an annual net fiscal impact of $96 million in the year 2025.[40] Choosing to expand Medicaid would bring many improvements for the state's residents through expanded coverage and increased jobs and spending. However, because Mississippi's current budgetary needs are greater than its available resources, the state decided not to expand its Medicaid program at this time.

While the Affordable Care Act has introduced some important reforms to the health care system and Medicaid expansion has the potential to provide coverage to many residents and create substantial cost savings for the state, it should be noted that this law still falls very short in solving many of the critical problems presented by our current health care delivery and payment system. Even if Medicaid expansion was adopted in the state, undocumented residents would still be ineligible for coverage, and would continue to rely on ERs for care, burdening state taxpayers and hospitals. Further, the Affordable Care Act does not sufficiently address low reimbursement rates for providers, meaning that many communities would continue to be challenged by a lack of access to care for their low-income and vulnerable residents.

Another issue discussed regarding the Affordable Care Act is lack of clarity regarding the legal and regulatory changes created by the law, which creates challenges for implementation of the law and uncertainty regarding the impact of the changes. Participants identified the need for the state to pursue a clearer interpretation of legal issues presented by the ACA.

Given the severity of the health and economic impacts on the state and the ethical implications of failing to provide quality health care to a substantial proportion of the population, it is clear that the broken health care system is one of the most significant challenges faced by the state. While the scope of this challenge is very broad, extending beyond the reach of the Mississippi State Department of Health, participants identified several key opportunities to limit the negative impact of our health care system's shortcomings. First and foremost, participants identified the need to clearly communicate the impact of these shortcomings to both legislators and to the public to garner support for policy changes to reform the system. Advocacy must occur at the local, state, and federal level for real change to occur. Advocating for adoption of Medicaid expansion is a critical first step to improving Mississippi's health care system. Participants also identified the opportunity to leverage the emergence of telemedicine as a potential strategy to increase access to specialty care and control costs, particularly for rural residents. Participants also stressed that further efforts should be made to improve care coordination at the system-level to reduce health care spending and improve the health status of Mississippians.

40 Center for Mississippi Health Policy Medicaid Expansion Issue Brief, November 2012 (inclusive of other sources)

Poverty

Poverty also emerged as a critical force at play in shaping the health of Mississippi residents. References to the impact of poverty were threaded throughout the dialogue and touch all other forces that emerged in the assessment. With a 22.6% poverty rate, a 32% child poverty rate, and a median household income of $36,919, Mississippi consistently ranks as the poorest state in the nation and fares the worst on many economic, health, and social indicators. Poverty is a driving force for many of the challenges the state faces and has grave implications for the health of Mississippi residents.

There are a myriad of interconnected economic, structural, and social factors that contribute to poverty in the state:

Economic factors:

- depressed economic climate that limits access to jobs with living wages and fails to attract highly skilled workers or lucrative industries to the state
- prevalence of low wage jobs that keep families at or near the poverty line and prevent them from accumulating wealth or assets that could help them achieve upward economic mobility
- high unemployment rate
- low tax revenue resulting in lack of resources to improve community infrastructure

Structural factors:

- low investment in education resulting in low literacy rate
- inadequate investment in community infrastructure and basic services that could enhance community growth

Social factors:

- high incarceration rate
- high crime rate
- inadequate investment in safety net services
- sense of fatalism
- high rate of unplanned pregnancy

These economic, structural, and social factors continue to foster disadvantages that create persistent poverty and drive disparities in income, education, health, and quality of life.

FOCA participants also perceived the role of dependence on public social services as a factor in creating a cycle of poverty, in which families have the resources merely to subsist rather than to rise above poverty. Participants discussed the sense among many in the state that poverty is a reality that cannot be changed.

Participants noted that Mississippi's persistently high poverty rate can be discouraging and that consistently scoring the worst in the nation has had a disempowering effect in itself, creating a sense of fatalism that may in turn play a role in reinforcing the persistence of poverty. In order to reverse the trend, it is important for Mississippi to take conscious action to improve economic and social wellbeing of its residents by investing in education and child development, investing in vocational training and workforce planning and development, attracting new businesses and industries to the state, and improving access to health care and other basic services.

Environmental, Structural, and Behavioral Barriers to Health

Mississippi's ranking as the worst in many of the nation's health indicators is inextricably linked with its ranking as the poorest state in the nation. While poor health is often perceived as largely the result of lifestyle choices and genetics, health is also shaped by a variety of environmental and structural factors as well.

Determinants of Health- Human Impact Partners, 2010

As the image above demonstrates, an individual's genetic predispositions and behaviors are just two factors among many that influence health. Among the spectrum of health determinants, environmental and social factors play a much broader role in determining our health by limiting the number of resources and options available to us. Substantial evidence demonstrates that the communities where we live have a significant impact on health and that people have different levels of access to the things that make us healthy depending on our social and economic standing in society.

Obesity and many chronic diseases, for example, are strongly shaped by the choices available to individuals. Families living in a neighborhood of concentrated poverty as a result of segregation may have limited access to healthy foods as grocery stores are less likely to locate in low-income neighborhoods. These families may need to travel longer distances to access fresh produce. They may also not be able to afford healthy foods, which tend to cost more than less healthy options as a result of federal agricultural policies. At the same time, neighborhoods may lack safe recreation spaces, limiting the families' abilities to play and exercise outside. The stress of living in an unsafe neighborhood can contribute to unhealthy coping behaviors, including overeating or smoking. These factors, compounded by genetic predispositions, can make families more vulnerable to developing obesity and other chronic diseases. The same forces that limit access to healthy foods and recreation can also limit access to medical care to treat these health conditions. In this way, factors at all levels along the spectrum come together to determine our health.

Just as the factors that contribute to poor health can be found all across the spectrum of health determinants, the solutions that contribute to good health can also be found along the spectrum. Continuing with the example of obesity, we can try to improve individual behaviors by educating people about the importance of nutrition and physical activity, but we can also try to shape physical and social environments to facilitate good health by investing in walkable communities, parks, and recreation centers that provide places to be physically active, and by improving access to health care so people can see doctors when they are sick. We can further promote health by creating policies that improve living and working conditions—for example, by creating policies that ensure kids have access to nutritious school lunches and that incentivize the adoption of worksite wellness programs among employers. These examples underscore the importance of policy, systems, and environmental change solutions to

health promotion. While we know that these changes are important, FOCA participants noted that the cultural and political landscape of Mississippi often emphasizes and prioritizes individual choice and liberty over the common good, which presents challenges for creating and implementing policies to improve public health. For this reason, it is important to communicate the value of public health to the public.

Health Literacy and Health Education

Low levels of health literacy throughout the state are another driving force of poor health outcome. Health literacy is defined by the U.S. Department of Health and Human Services' Healthy People as "the degree to which an individual has the capacity to obtain, process, and understand basic health information and services to make appropriate health decisions." Low levels of health literacy affect Mississippians' ability to make choices that support good health for their families, including interpreting nutrition labels at the grocery store to make healthy food purchases; understanding directions for taking prescriptions; understanding how to use health insurance, Medicare, or Medicaid benefits; and knowing where to get reliable health information.

One dimension of advancing health literacy is addressing low educational attainment and literacy rates overall in Mississippi. Another key element entails working to ensure that health information is readily available and presented in accessible and culturally appropriate formats. Easily understandable health information should be available not only in clinical settings, but also in community spaces like schools, community centers, and libraries.

Low levels of health literacy throughout many communities in Mississippi underscore the importance of health education efforts. Building public health workforce skills to communicate health information effectively is a critical step in educating the public about health issues. Creating targeted health messages to different communities and populations throughout the state is also key to successful health education. Participants identified engaging faith-based organizations and focusing on the family unit as two important strategies to address health literacy and health education improvements in Mississippi.

Lack of Political and Financial Support of Public Health

One of the biggest challenges facing the Mississippi public health system is the lack of public and political support for public health, which has translated to severe underfunding and has limited the ability of the Mississippi State Department of Health and its partners to achieve improvements in the state's health status.

Given Mississippi's poor rankings on many health and quality of life outcomes, it should follow that the state should invest heavily in infrastructure and services that help improve these outcomes and work to create policy changes that remove barriers to good health. Unfortunately, there is very little support for these efforts among voters and lawmakers. The cultural and political landscape of the state, which largely emphasizes personal liberty and limited government intervention, limits Mississippi's ability to create positive changes for its citizens, even as the state's poor economic climate makes these changes so necessary.

Because the state's economic climate is so poor, Mississippi's government is challenged by low tax revenue to support state governmental services. While significant efforts are underway to more effectively distribute state funds, needs greatly exceed resources in most if not all areas of government involvement. FOCA participants expressed serious concern about crumbling infrastructure, including roads, bridges, and water systems. The lack of access to essential services and critical community infrastructure like clean water, roads, and safe housing presents serious challenges to the basic health and wellbeing of Mississippians. These challenges are compounded by low wages, lack of access to affordable childcare, quality education, and health care.

Even as the state struggles with high rates of uninsured individuals and struggles to make basic health care accessible for vulnerable populations, Mississippi has failed to adopt Medicaid expansion, despite the economic and health benefits it would generate for the state.

The Mississippi State Department of Health faces challenges to address serious health problems as its budget does not keep up with increasing public health needs. At the same time, the Department is required to meet unfunded mandates that compete for the resources used in the provision of critical health services for Mississippians that could prevent illness and loss of life. In addition to competing for limited resources, the public health community has difficulty achieving its policy goals because of a political climate that favors personal liberties and limited government over evidence-based interventions and programs. These challenges are further exacerbated by federal austerity measures, which have reduced the availability revenue that has traditionally been used to fill the gaps of the state's safety net.

Underfunding and undervaluing public health has had grave consequences for the citizens of Mississippi, and will continue to pose a serious threat to the state. FOCA participants emphasized the need to improve communication with legislators and the public to articulate the critical role and importance of public health.

Cultural Competence

Cultural competence appeared as a theme across several of the categories explored by the groups during the Forces of Change Assessment. Cultural competence, defined as a set of behaviors, attitudes, and policies that come together in a system, agency, or among professionals and enable that system, agency, or those professionals to work effectively in cross-cultural situations[41], is recognized as an essential component for meeting the health care needs of Mississippi's diverse citizenry with a growing population of minorities and immigrants (particularly Hispanics). Among the defined elements that contribute to a system or agency's ability to become more culturally competent are the ability to value diversity and having developed service delivery that reflects an understanding of cultural differences.

The group clearly acknowledged Mississippi's challenges in incorporating these elements into its health care systems. In discussions on health literacy, behavioral barriers to health, changing demographics, health care system infrastructure, and access to care, the need to respect and respond to cultural diversity and its impact on improved health care emerged as important issues. Addressing the many factors that surround the state's changing demographics and the associated views on provision of health care for minorities, including those who are undocumented, requires the practice of cultural sensitivity and respect.

Furthermore, the principal standard of the National Culturally and Linguistically Appropriate Services Standards (CLAS) recommends a provision of effective, equitable, understandable, and respectful quality care and services that are responsive to diverse cultural health beliefs and practices, preferred languages, health literacy, and other communication needs[42]. The groups expressed that consideration of language limitations and adapting the cultural context of health messages become necessary when addressing health literacy in minority populations.

41 Cross, T., Bazron, B., Dennis, K., & Isaacs, M., (1989). *Towards A Culturally Competent System of Care, Volume I.* Washington, DC: Georgetown University Child Development Center, CASSP Technical Assistance Center.

42 info@minorityhealth.hhs.gov

Additionally, improvements in Mississippi's health care require a greater understanding of and attention to the culturally-rooted health practices, attitudes, and beliefs that far too frequently impede adoption of healthy lifestyles that lead to better health outcomes.

Impact of Chronic Disease

Chronic diseases such as diabetes and heart disease are among the most pressing health concerns in Mississippi. High rates of chronic disease across the state are detrimental not only to health and quality of life of Mississippians, but also hurt economic growth by limiting workforce productivity and by increasing state health care spending.

As presented previously, a complex constellation of social, environmental, behavioral, and genetic factors contribute to the prevalence of chronic disease in many communities across the state. In 2011, 69% of Mississippi adults were overweight or obese, 23% were smokers, and over 20% were uninsured[43]. These risk factors can be prevented though public health interventions. Helping Mississippians to eat well, live active lives, and avoid tobacco use and ensuring access to quality preventative care can significantly reduce the burden of chronic disease in the state.

FOCA participants identified several key policy, systems, and environmental change opportunities to address chronic disease in communities throughout the state. Access to healthy foods can be increased by incentivizing healthy food purchases for SNAP (food stamps) users and by addressing food deserts through creating farmers' markets and encouraging the building of grocery stores. Mississippi can support active living across the state by adopting policies that increase access to physical education for school children and by building walkable communities. Tobacco use can also be reduced through statewide legislation and community-level smoking bans.

Changing Demographics

Demographic shifts are another driving force of change in Mississippi. FOCA participants identified several populations that are growing in communities across the state:

Increasing Latino Population:

While Latinos comprise a relatively small percentage of the state's population, the population of Latinos in Mississippi has more than doubled since 2000. While FOCA participants identified the increasing Latino population as a substantial opportunity for economic and workforce growth, they also noted that the relatively rapid increase may pose a threat if communities still lack linguistically and culturally appropriate services for this new growing population.

Increasing Population of Incarcerated Individuals and Parolees:

As a result of high incarceration rates in Mississippi and across the country, incarcerated individuals and parolees now comprise a substantial portion of Mississippi's population. Mississippi has the second highest incarceration rate in the country, with over 22,000 currently in custody and nearly 40,000 currently on parole[44]. Growing incarceration rates present a substantial strain on the state's budget, costing Mississippi over 339 million dollars in

43 *Mississippi: Burden of Chronic Diseases.* Mississippi State Department of Health, 2011.

44 Mississippi Department of Corrections, 2012

2013. The Mississippi Department of Corrections projects that these costs will continue to increase as the inmate population rises. This poses a substantial threat to the state because the need to finance Mississippi's growing incarcerated population results in diversion of funds from other state needs, including public health spending.

The growing incarceration rate also demonstrates a disconcerting national trend toward using the prison system to house individuals who could be better served by a mental and behavioral health safety net system. In the absence of such a safety net, many individuals are incarcerated rather than receiving treatment or supportive services, which could be more appropriate and cost-effective. Mississippi has an opportunity to shift investment away from the correctional system by funding the public health system to properly address mental and behavioral health issues.

Increasing Undocumented Workers:

There are about 45,000 undocumented workers in Mississippi, according to estimates by the Pew Hispanic Center. This population is difficult to estimate accurately, making it a challenge to appropriately address their health needs. Participants noted that their status as undocumented individuals makes this population very vulnerable because they cannot receive government services. This in turn puts pressure on the health care system, which cannot be reimbursed for providing care to undocumented individuals.

Population Loss and Aging Rural Communities:

Population loss is a concern in some rural Mississippi communities. As the population falls in these communities, the median age is increasing. This is a potential concern if these communities lack the appropriate supportive services for an aging population and lack working-age adults who can drive economic growth in these areas.

Impact of Natural and Human-made Disasters

Natural and human-made disasters have had a substantial health and economic impact on Mississippi in recent years. Hurricane Katrina in 2005 and the BP Oil Spill in 2010 caused significant economic loss and severe environmental damage in addition to grave impact on public health, from which the state is still recovering.

Participants noted that the state's economic climate makes Mississippi particularly vulnerable in disasters because it cannot adequately prevent or repair damages when disasters occur. They also noted that high poverty and unemployment rates result in many Mississippi families being more vulnerable to disaster as well, and less able to protect themselves or recover from the economic and health impact of disasters.

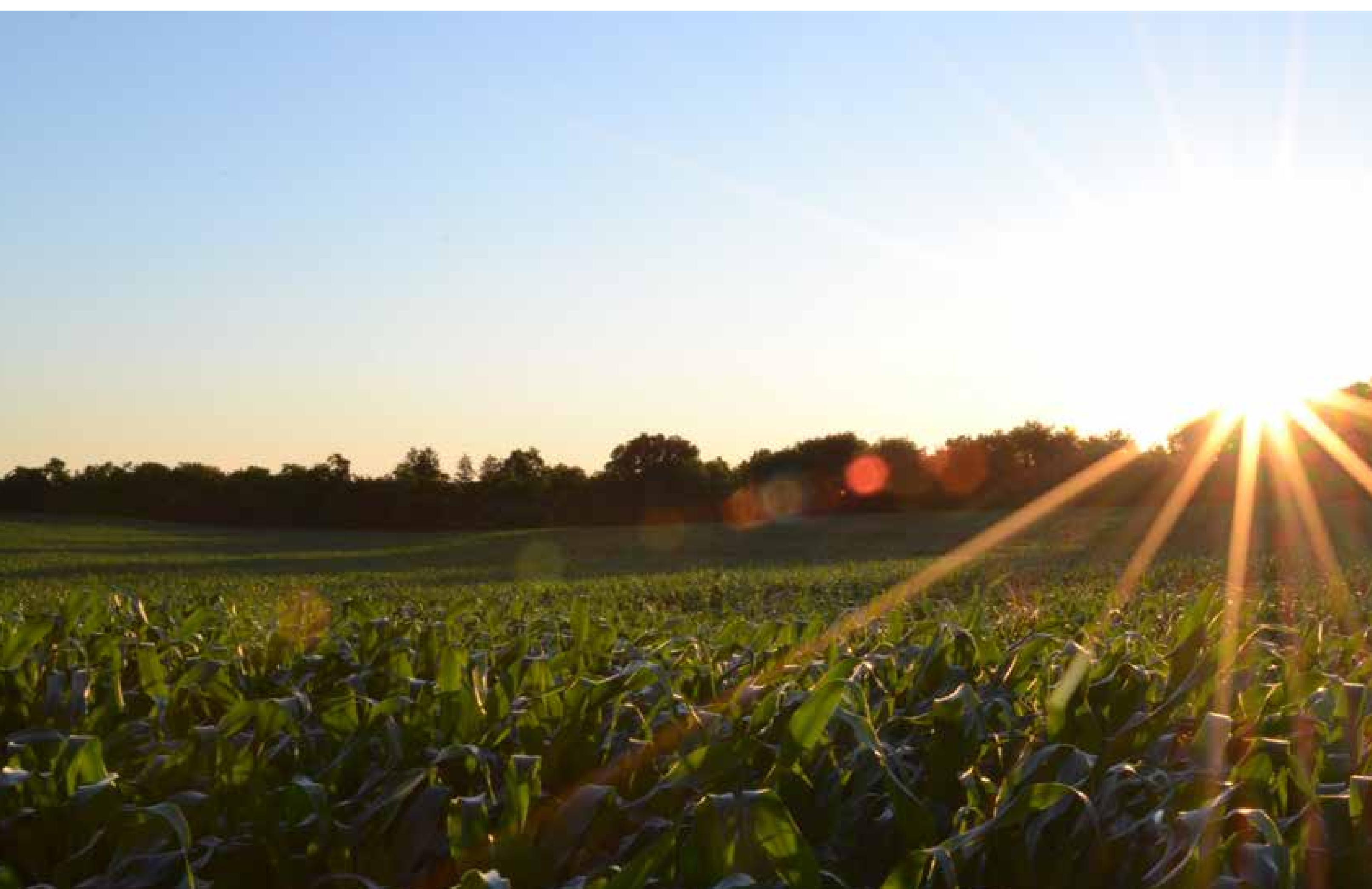
Because natural and human-made disasters certainly pose substantial threats to Mississippi, FOCA participants identified the need to invest in emergency preparedness infrastructure to minimize damage, injury, and loss of lives when disasters occur. They also noted that one opportunity presented by disasters is the chance to build communities back better and stronger. Rebuilding communities after disasters offers the opportunities for the community to think about how to structure the built environment in a manner that promotes good health and fosters economic growth.

An additional threat discussed by participants is the potential impact of climate change, which has contributed to droughts across the country, leading to increasing food prices. Rising food prices make it harder for families to afford healthy food, such as fresh fruits and vegetables. This threat underscores the need to promote sustainable agricultural practices and regulations to protect the environment.

Urban/Rural Disparities

A final theme that surfaced throughout the Forces of Change Assessment was concern related to disparities among urban and rural communities. In the context of diminishing economic resources at the state level, rural communities are at a disadvantage for receiving the funding they need to build and maintain critical infrastructure and services.

Rural areas are also challenged by reduced access to health care. Shortcomings in the health care payment structure, increasing gaps in coverage and inadequate reimbursements are an increasing burden to rural hospitals, threatening closure of needed healthcare facilities. Many rural areas also face physician shortages, particularly among specialists. To address this shortage, FOCA participants suggested increasing recruitment incentives to encourage doctors to practice in rural communities, including scholarships and debt forgiveness. Another potential solution to increasing access to care in the context of provider shortages is the use of telemedicine, though some participants expressed concerns regarding effectiveness and care quality of telemedicine.



Conclusion: Cross-Cutting Themes throughout the Forces of Change Assessment

The forces of change identified by the members of the Mississippi State Health Improvement Committee represent key issues that will have important implications for the state public health system and the health and quality of life of Mississippians.

The core issues that emerged as priorities in this assessment include:

- **Health Care System Infrastructure and Access to Care**
- **Poverty**
- **Environmental, Structural, and Behavioral Barriers to Health**
- **Health Literacy and Health Education**
- **Lack of Political and Financial Support of Public Health**
- **Cultural Competence**
- **Impact of Chronic Disease**
- **Changing Demographics**
- **Impact of Natural and Human-made Disasters**
- **Urban/Rural Disparities**

Throughout the assessment dialogue, several key cross-cutting themes emerged as issues driving the forces of change. Poverty and lack of access to the resources people need to thrive are root causes of many of the challenges Mississippi faces, including the growing prevalence and cost of chronic disease, rising incarceration rates, diminished economic mobility, and low literacy. These issues point to the critical role of the social determinants of health in shaping health and life outcomes.[45] The health challenges Mississippi faces are compounded by a lack of public and political support for public health, depriving the state's public health system of the funding necessary to create improvements to the health status of Mississippians. Gaps in health care system infrastructure further contribute to poor health outcomes, particularly in rural areas, where access to care is exacerbated by provider shortages. The current economic climate and limited government infrastructure make Mississippi particularly vulnerable when natural and human-made disasters occur, as in the case of Hurricane Katrina and the BP Oil Spill.

Ensuring that all Mississippians have access to clean water, nutritious food, health care, and education are critical first steps to improving health and social outcomes for the state. Articulating the critical role of the social determinants of health and the value of public health must be priorities for the Mississippi state public health system moving forward.

45 The Centers for Disease Control and Prevention defines social determinants of health as the circumstances in which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics.

Appendix 1: FOCA Worksheet

What are Forces of Change?

Forces are trends, factors, or events that are or may be influencing the health and quality of life of the community and the work of the local public health system assessment.

Trends are patterns over time, such as migration in and out of a community or a growing disillusionment with government.

Factors are discrete elements, such as a community's large ethnic population, an urban setting, or a jurisdiction's proximity to a major waterway.

Events are one-time occurrences, such as a hospital closure, a natural disaster, or the passage of new legislation.

How to Identify Forces of Change

1. Use the questions below to help spur ideas of specific factors, trends, or events that are or may likely affect the local public health system or community.
2. What has occurred recently or may occur in the future that will likely affect our public health system or state?
3. Are there any trends occurring that will have an impact? Describe the trends.
4. What forces are occurring locally? Statewide? Regionally? Nationally? Globally?
5. What characteristics of our state may pose an opportunity or threat?
6. What may occur or has occurred that may pose a barrier to achieving the shared vision?
7. During other MAPP activities or discussions, what potential threats or opportunities were discussed that should be considered?

What Kind of Areas or Categories Are Included?

Forces of change typically emerge in the following categories:

- social
- economic
- political
- technological
- environmental
- scientific
- legal
- ethical

Forces of Change Brainstorming Worksheet

Forces of Change (Trend, Events, Factors)	Potential Threats Posed to the PHS or Community (State)	Potential Opportunities Created to the PHS or Community (State)	Questions/More Info Needed
Example: Rapidly growing Latino population in two health districts	Lack of culturally relevant health information; lack of Spanish speaking providers and limited forms in Spanish	Enriching the diversity of our community; partnership with other organizations to update materials	What language services are provided by hospital that may be able to be leveraged?

2014 Mississippi State Public Health System Assessment

Prepared by the Illinois Public Health Institute

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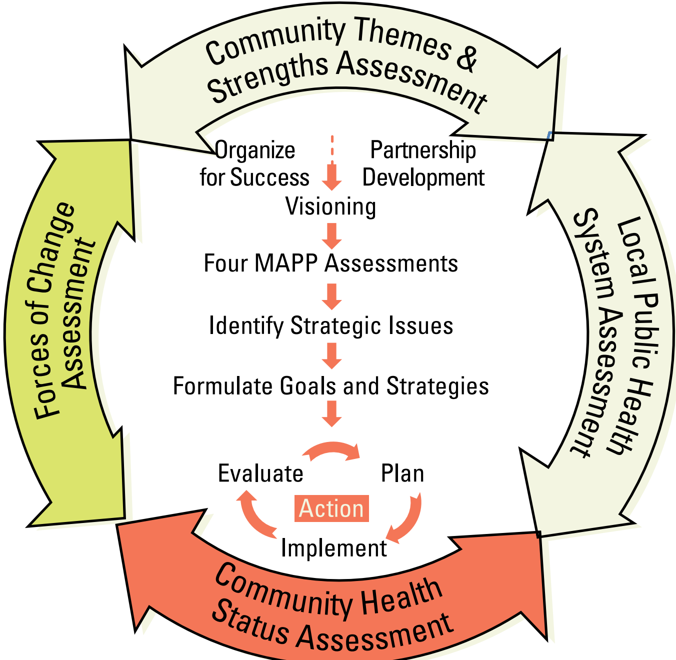
Introduction

In 2014, the Mississippi State Department of Health embarked on a journey to develop a State Health Assessment (SHA) by adapting the Mobilizing for Action through Planning and Partnerships (MAPP) process. MAPP is a community-driven[46] strategic planning framework that assists communities in developing and implementing efforts around the prioritization of public health issues and the identification of resources to address them as defined by the 10 Essential Public Health Services. The MAPP process includes four assessment tools, as shown in the graphic below.

The Mississippi State Public Health System Assessment (SPHSA) was conducted on October 2, 2014, as one of the four assessments in the Mississippi Mobilizing for Action through Planning and Partnerships (MAPP) Collaborative process. The SPHSA included 112 participants from across the state representing many different groups and organizations (see "Appendix A") assessing the system of public health in Mississippi, defined as the collective efforts of public, private and voluntary entities, as well as individuals and informal associations that contribute to the public's health within a state. This Assessment document reflects the comments made by the participants in the group discussions around each of the Essential Services.



The SPHSA, described in detail in the following sections, is used to understand the overall strengths and weaknesses of the public health system based on the 10 Essential Public Health Services. Results from the SPHSA will be analyzed with the reports from the other three assessments in the MAPP process, which include the Community Health Status Assessment (CHSA), Community Themes and Strengths Assessment (CTSA), and the Forces of Change Assessment (FOCA). Strategic analysis of these assessment results will inform the identification of prevailing strategic issues, which will be prioritized. Goals and action plans will be developed for each of these priority issues. These action plans will be implemented and aligned to improve the state public health system and ultimately the health and wellbeing of Mississippi residents.

46 For the purposes of the MAPP process, the Mississippi State Department of Health defines community broadly as the residents of the state of Mississippi and the state's partners through the state's public health system, including state and local government agencies, businesses, non-profits, academia, and other entities that influence the health and well-being of Mississippians.

Executive Summary: Cross-Cutting Themes from the Mississippi State Public Health System Assessment

Mississippi's first State Public Health System Assessment revealed a number of cross-cutting themes that arose in dialogue across each breakout group:

Workforce

Participants in every essential service discussion identified workforce capacity as a critical area for improvement. Participants described the current public health workforce as dedicated and highly skilled, and also reported system-wide staffing shortages that impede optimal performance in delivering the 10 Essential Services. Lack of funding is a driving factor in workforce shortages, contributing to the prevalence of unfilled vacancies as well as low salaries and minimal advancement opportunities that make it challenging for the public health system to recruit and retain highly skilled workers. Participants recommended greater investment in workforce development efforts, citing the need for a collective public health workforce plan to address gaps in personnel and skills across the Mississippi public health system. Epidemiology, biostatistics, evaluation, and cultural competency skills were identified as areas to prioritize for training and skill development. Professional licensure and certification was also cited as an area where improvement can be made. Participants referred to the licensure process for nurses as a best practice example to potentially replicate for other health professionals.

Short term opportunities for improving Mississippi's public health workforce include conducting a system-wide workforce assessment based on core public health competencies and increasing training opportunities for the population-based health workforce. Over the long term, participants recommended using workforce assessment data to inform the creation of a collective public health workforce development plan.

School of Public Health

Participants reported that although there are existing public health degree programs in the state, the absence of an accredited school of public health in Mississippi is a significant gap in the state public health system. Participants perceived that a school of public health could serve an important coordinating function within the public health system, leading workforce development efforts and the development of a coordinated public health research agenda for the state. Participants identified the establishment of a school of public health as an important long term goal for the state public health system.

Emergency Preparedness and Response

Emergency preparedness was highlighted throughout essential service discussions as one of the state public health system's greatest strengths. Recent disasters like Hurricane Katrina and the BP Oil Spill have provided the system with substantial experience in planning for and mitigating health emergencies, and the state has received national recognition for its performance in disaster response.

Mississippi excels in crisis response because the system has robust emergency preparedness plans in place and because partners maintain strong relationships that allow them to quickly mobilize resources and manpower. The system has also been effective in assuring resources go to the local level, providing technical assistance to communities to develop their own emergency response plans that align with state-level plans. When a disaster occurs, the state public health system works in concert with the local community to mobilize resources and surge capacity to target areas and vulnerable populations with the highest needs.

Mississippi's emergency response activities are also a leading example of quality improvement for the public health system. Partners regularly convene to review emergency plans and to conduct drills and exercises which inform the allocation of training and other resources to further strengthen the system's planning and response capacity.

One key asset that Mississippi can leverage in the event of a disaster or eminent threat is the state's great culture of generosity and volunteerism. Participants reported that Mississippians are willing to give of their time and money to help community members in times of trouble, which helps communities recover from crises more quickly.

One area of emergency response that can be improved upon is allocating adequate resources to long-term recovery after disasters occur. Participants report that while the system does a good job of helping communities immediately following a disaster, communities affected by disasters also face long-term economic and social impacts, which are more difficult and resource-intensive to address. These communities need access to safe and secure housing and stable jobs to facilitate true recovery. Coastal communities, which have been disproportionally affected by disasters in recent years, are particularly in need of sustained investment to help rebuild the economy and community infrastructure to foster long-term health and wellbeing.

Culture of Health

Across essential service dialogues, participants noted that health messaging and programming in Mississippi have traditionally emphasized management or prevention of specific diseases, rather than promoting good health in general to prevent the onset of disease. However, participants called for a shift in the public health system's approach to health promotion toward building a culture of health that fosters holistic wellness for the whole population.

In the context of limited resources for health promotion and disease prevention, the most effective way to improve the health of the state is to work together as a system to build healthy communities that foster wellbeing for all, and where everyone has the opportunity and resources to make healthy choices. Policy, systems, and environmental change strategies are critical to build healthy communities.

Smoking Cessation

Another area of great strength for Mississippi's public health system is the success of tobacco prevention and control efforts across the state. Participants throughout the essential service discussions referred to the state's tobacco control program as a best practice example for health communication and messaging, use of evidence-based strategies including policy and environmental change, and use of evaluation to measure impact.

One of the great keys to success for tobacco control efforts has been sustained funding over 15 years, which has allowed the public health system to create a lasting impact in reducing tobacco use rates among adolescents and thereby improve health outcomes for Mississippians. Tobacco control efforts are an example of the impact that is possible when public health programs have adequate funding over the long term.

Chronic Disease

A critical area of weakness for Mississippi's public health system is the prevalence and severity of obesity and chronic disease. Participants described that while these conditions have reached a crisis level, constituting a substantial financial burden to the state and having a serious detrimental effect on quality of life and life

expectancy for Mississippi residents, Mississippi has failed to respond in accordance with the level of severity. Participants attributed the lack of action to address chronic disease as partially the result of a culture of complacency, in which Mississippi residents may acknowledge that these health problems are important, but they may not view them as urgent or changeable. An even larger problem beyond cultural attitudes is the lack of funding available to the public health system to appropriately address and prevent chronic disease. Chronic disease is best prevented through changing environments and policies to facilitate good health, including building safe, walkable communities, ensuring access to preventative health care, and ensuring access to affordable healthy food options. These changes cannot be accomplished without substantial financial resources and public support. Participants reported that these methods have proven effective in addressing childhood obesity, an area where improvement is being made in Mississippi. Participants called for continued focus fostering good health among Mississippi youth to prevent chronic diseases before they develop in this population.

Social Determinants of Health

Throughout the assessment, participants referred to the important role of the social determinants of health in shaping health outcomes and quality of life for Mississippians. Educational attainment, housing safety and stability, income, and job security are all critical forces in determining people's health. Mississippians who live in poverty and lack access to good jobs, education, and safe housing are less likely to be healthy. Participants stressed that addressing the social determinants of health is critical to effecting change in the population's health status.

Funding

Participants continually referred to funding shortage as a critical barrier to optimal performance in all of the essential public health services. They reported that system partners are highly reliant on grants to fund their work, but the time-bound and highly specific nature of grant funding streams can be an impediment to building a sustainable, high-performing public health system, encouraging the creation of silos and initiating programs that end before they can make a sustainable long-term impact. Participants acknowledged that while grants have traditionally hindered rather than rewarded collaboration and partnership, funders are increasingly recognizing the importance of partnerships to create sustainable change and are beginning to require that grantees have strong partnerships in place as well as sustainability plans to carry on work after the grant period has ended. Participants reported that sustainability planning should become common practice whenever a new grant is secured, and recommended that the public health system should start treating grant funding as seed money, and look to other forms of funding to sustain work when a grant has ended. Participants suggested that the system should leverage the state's culture of generosity to encourage charitable giving to support community-based health improvement work.

Data Sharing

Participants throughout the assessment noted that while partner organizations individually collect a lot of data, they lack the technological capacity to share this data effectively through information management systems. As a result, many individual organizations and agencies are trending and studying their own data rather than pooling all available data across the system together to get a fuller, more accurate picture of health status. Another issue is that while some organizations do a good job of trying to share their data, the system is not always aware that this data is available. For example, state agencies in Mississippi collect a lot of data that is available through their websites, but participants frequently reported either lack of awareness about the availability of this data or lack of understanding regarding how to access and interpret this data.

Health Literacy and Cultural Competency

Health literacy was frequently referenced throughout the assessment discussions as an area where improvement is needed. Participants perceived low levels of health literacy among Mississippi residents, and expressed concern that health promotion messaging cannot effectively reach people if it is not tailored appropriately. Participants emphasized that health information should not only be presented at an appropriate reading level, but should also be translated for communities with limited understanding of English and modified to be culturally sensitive when necessary.

Beyond fostering an understanding of how to prevent disease and stay healthy, another critical area where health literacy must be increased is in accessing the healthcare system. As many communities are now gaining access to insurance for the first time through the Affordable Care Act, many people may not understand how to properly navigate the health care system, particularly when accessing preventive or urgent care. The public health system must help these newly covered populations to appropriately use their health insurance.

Mental Health

Mental health is an area in need of substantial improvement for both the state and national public health systems. Participants reported that mental health is often siloed and separated from both public health and healthcare rather than being treated as one part of a person's overall wellbeing. Participants attributed this to policies separating mental health care from primary care, and to the separation of mental health and public health at the agency level in Mississippi's state government. This separation prevents proper treatment and continuity of care at the personal healthcare level, and data-sharing and proper alignment at the population health level. Participants called for a broad definition of health encompassing physical, social, and mental wellbeing at the population level, and integrated primary care and mental health services at the personal healthcare level.

Coordination and Alignment

The need for greater coordination and alignment of efforts was a recurring theme throughout the State Public Health System Assessment. While there are a lot of good relationships in place among organizations throughout the public health system, many of these relationships have not been formalized into partnerships. Many silos, gaps, and redundancies exist throughout the system as a result of the targeted nature and limited scope of many funding streams. Participants emphasized the need to come together to increase action as a collective system to maximize impact on advancing health for Mississippians.

The Assessment Instrument

The National Public Health Performance Standards (NPHPS) Assessment measures the performance of the state public health system -- defined as the collective efforts of public, private, and voluntary entities, as well as individuals and informal associations that contribute to the public's health within a state. This may include organizations and entities such as the state health department, other governmental agencies, healthcare providers, human service organizations, schools and universities, faith institutions, youth development organizations, economic and philanthropic organizations, and many others. Any organization or entity that contributes to the health or wellbeing of the state is considered part of the public health system. Ideally, a group that is broadly representative of these public health system partners will participate in the assessment process. By sharing their diverse perspectives, all participants will gain a better understanding of each organization's contributions, the interconnectedness of activities, and how the public health system can be strengthened. The NPHPS does not focus specifically on the capacity or performance of any single agency or organization.

The instrument is framed around the **10 Essential Public Health Services (EPHS)** that are utilized in the field to describe the scope of public health. For each essential service in the state instrument, there are four model standards: Planning and Implementation, State-Local Relationships, Performance Management and Quality Improvement, and Public Health Capacity and Resources. For each model standard, there are a series of questions, or performance standards, to explore and score overall public health system performance in the state.

Performance standards are scored by participants to assess system performance on the following scale:

Optimal Activity (76-100%)	The public health system is doing absolutely everything possible for this activity and there is no room for improvement.
Significant Activity (51-75%)	The public health system participates a great deal in this activity and there is opportunity for minor improvement.
Moderate Activity (26-50%)	The public health system somewhat participates in this activity and there is opportunity for greater improvement.
Minimal Activity (1-25%)	The public health system provides limited activity and there is opportunity for substantial improvement.
No Activity (0%)	The public health system does not participate in this activity at all.

NPHPS results are intended to be used for quality improvement purposes for the public health system and to guide the development of the overall public health infrastructure. Analysis and interpretation of data should also take into account variation in knowledge about the public health system among assessment participants; this variation may introduce a degree of random non-sampling error.

The Assessment Methodology

The assessment retreat was held on October 2 and began with a plenary presentation to welcome participants, provide an overview of the process, introduce the staff, and answer questions. Following the presentation, participants moved to break-out groups for discussion and scoring work for two assigned essential services areas. (Prior to the retreat, participants chose which group they would like to contribute to, or if they did not choose, were assigned to one of five groups based on the diagram below.)

State Public Health System Assessment Breakout Groups	
Group	**Group Responsibilities**
A	EPHS 1 – Monitor health status to identify community health problems EPHS 2 – Diagnose and investigate health problems and health hazards in the community
B	EPHS 3 – Inform, educate, and empower people about health issues EPHS 4 – Mobilize community partnerships to identify and solve health problems
C	EPHS 5 – Develop policies and plans that support individual and community health efforts EPHS 6 – Enforce laws and regulations that protect health and ensure safety
D	EPHS 7 – Link people to needed personal health services and assure the provision of health services EPHS 9 – Evaluate effectiveness, accessibility and quality of personal/population-based health services
E	EPHS 8 – Assure a competent public and personal health care workforce EPHS 10 – Research for new insights and innovative solutions to health problems

Each group was professionally facilitated, recorded, and staffed by note takers. The program ended with a plenary session where highlights were reported by members of each group. Event organizers facilitated the end-of-day dialogue, outlined next steps, and analyzed and reported assessment findings to the Mississippi State Health Assessment and Improvement Committee (SHAIC) and retreat participants.

Assessment Participants

What is occurring or might occur that affects the health of our state or the public health system?

What specific threats or opportunities are generated by these occurrences?

The Mississippi SHAIC developed a list of agencies to be invited to participate in the full day assessment retreat. The event organizers carefully considered how to balance participation across sectors and agencies and how to ensure that diverse perspectives as well as adequate expertise were represented in each breakout group.

The event drew 112 public health system partners that included public, private and voluntary sectors. The composition of attendees reflected a diverse representation of partners that was apportioned as follows:

Constituency Represented	Total Attended
Businesses	2
Coalitions	2
Colleges and Universities	5
Community-Based Organizations	5
Federal Government	1
Hospitals/Health Systems	12
Insurance Providers	1
Local Government	2
Non-profit & Advocacy	40
State Government	11
State Health Department	30
Tribal Government	1

Results of the Mississippi State Public Health System Assessment

The table and graph below together provide an overview of the state public health system's performance in each of the 10 Essential Public Health Services.

Summary of Essential Public Health Service Scores

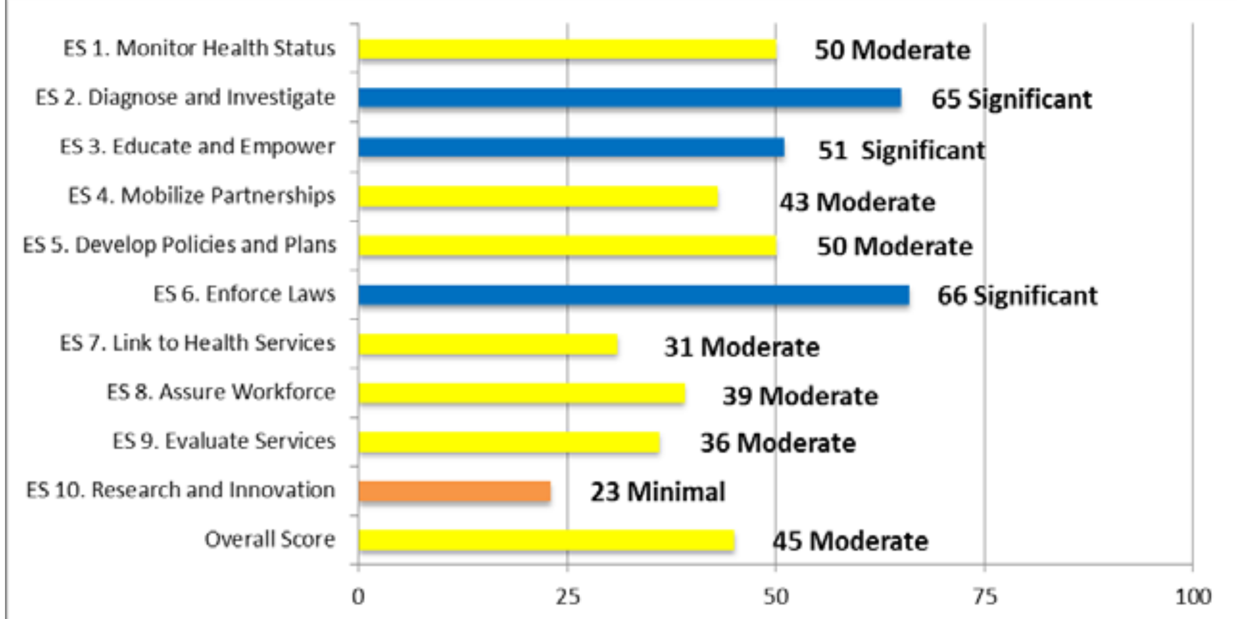
EPHS	EPHS Description	2014 Score	Overall Ranking
1	Monitor health status to identify community health problems.	50 (Moderate)	4th (tie)
2	Diagnose and investigate health problems and health hazards in the community.	65 (Significant)	2nd
3	Inform, educate, and empower people about health issues.	51 (Significant)	3rd
4	Mobilize community partnerships to identify and solve health problems.	43 (Moderate)	6th
5	Develop policies and plans that support individual and community health efforts.	50 (Moderate)	4th (tie)
6	Enforce laws and regulations that protect health and ensure safety.	66 (Significant)	1st
7	Link people to needed personal health services and assure the provision of health services.	31 (Moderate)	9th
8	Assure a competent public and personal health care workforce.	39 (Moderate)	7th
9	Evaluate effectiveness, accessibility, and quality of personal/population-based health services.	36 (Moderate)	8th
10	Research for new insights and innovative solutions to health problems.	23 (Minimal)	10th

Overall State Public Health System Performance Score ....45 Moderate

The table above provides a quick overview of the system's performance in each of the 10 Essential Public Health Services. Each EPHS score is a composite value determined by the scores given by participants to those activities that contribute to each essential service. The scores range from a minimum value of 0% (no activity is performed pursuant to the standards) to maximum of 100% (all activities associated with the standards are performed at optimal levels).

The chart below provides a graphic representation of Essential Public Health Service scores based on the scoring options:

Optimal Activity (76-100%)	The public health system is doing absolutely everything possible for this activity and there is no room for improvement.
Significant Activity (51-75%)	The public health system participates a great deal in this activity and there is opportunity for minor improvement.
Moderate Activity (26-50%)	The public health system somewhat participates in this activity and there is opportunity for greater improvement.
Minimal Activity (1-25%)	The public health system provides limited activity and there is opportunity for substantial improvement.
No Activity (0%)	The public health system does not participate in this activity at all.



Highest Ranked: Essential Public Health Service 6, Enforce Laws and Regulations that Protect Health and Ensure Safety, received a cumulative score of significant activity (66).

Lowest Ranked: Essential Public Health Service 10, Research for New Insights and Innovative Solutions to Health Problems, received a cumulative score of minimal activity (23).

Overall Performance: The average of all Essential Public Health Service scores resulted in a cumulative score of moderate activity (45).

Scores and Common Themes for each Essential Public Health Service

The following graphs and scores are intended to help the Mississippi State Public Health System gain a better understanding of its collective performance and work toward strengthening areas for improvement. For each Essential Service and Model Standard there is a bar graph depicting each Model Standard average and a cumulative rating score, discussion themes, and a summary of strengths, weaknesses, and opportunities for immediate and long-term improvement.

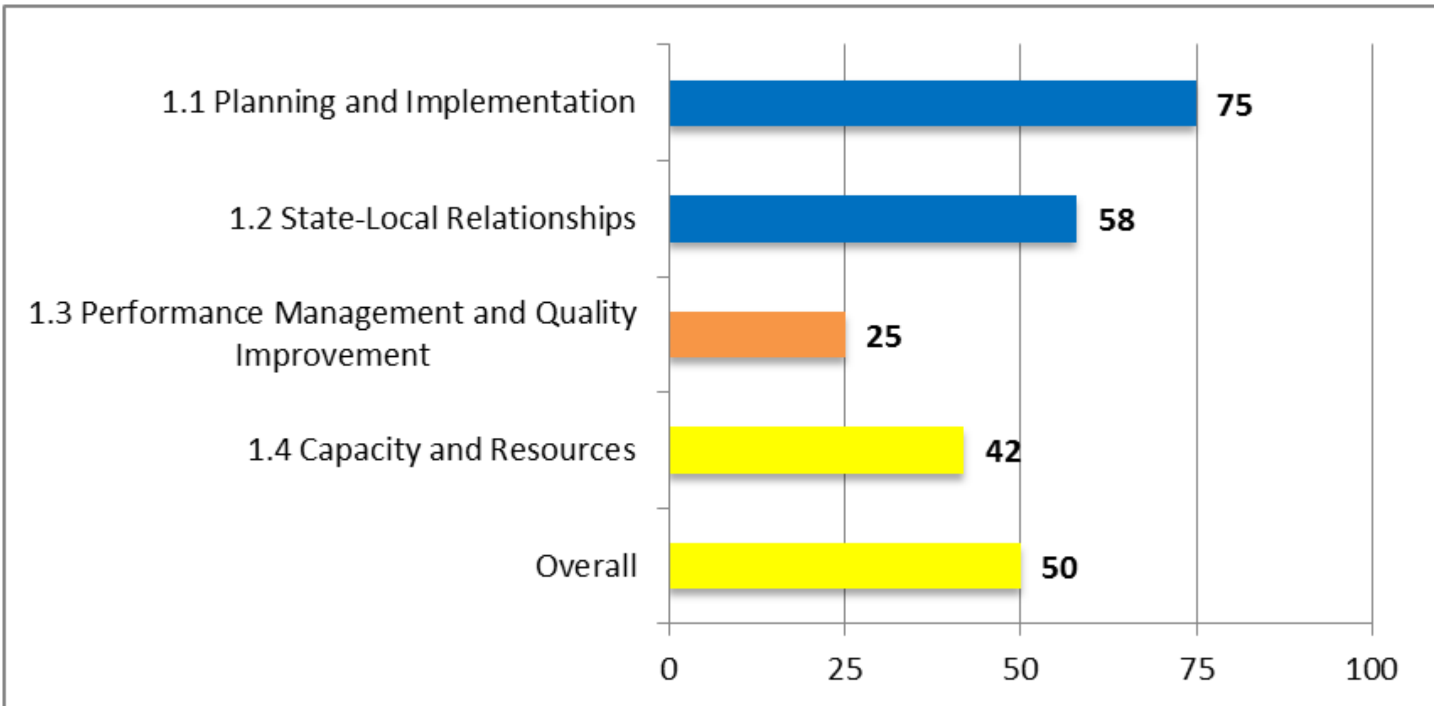
Essential Service 1: Monitor Health Status to Identify Community Health Problems

Participant dialogue to assess performance for Essential Public Health Service 1 explored the following key questions:

- **What's going on in our state?**
- **Do we know how healthy we are?**

Monitoring health status to identify community health problems encompasses the following:

- Assessment of statewide health status and its determinants, including the identification of health threats and the determination of health service needs
- Analysis of the health of specific groups that are at higher risk for health threats than the general population
- Identification of community assets and resources that support partner organizations in the state public health system in promoting health and improving quality of life
- Interpretation and communication of health information to diverse audiences in different sectors
- Collaboration in integrating and managing public health related information systems



Overall performance for Essential Service 1 was scored as significant. Model Standards 1.1 (Planning and Implementation) and 1.2 (State-Local Relationships) scored in the significant range, Model Standard 1.3 (Performance Management and Quality Improvement) scored as a high minimal, and Model Standard 1.4 (Capacity and Resources) scored in the moderate range. Performance for Essential Service 1 was tied with Essential Service 5 for fourth and fifth out of the 10 Essential Services.

Essential Service 1 Summary

Planning and Implementation

In the dialogue around the public health system's performance in monitoring health status to identify community health problems, participants described a relatively robust data collection system, with good tracking systems in place for vital statistics, infectious diseases, and behavioral risk factors. Participants also reported a recent collaborative effort between the Mississippi Department of Health and the Mississippi Hospital Association to begin collecting inpatient and outpatient hospital discharge data. Participants discussed some limitations of data collection and monitoring in the state, including the lack of mental health, crime, and domestic violence surveillance data, the lag time in data reporting, and challenges with getting accurate ground level data at the local level in rural counties due to small population size. Another concern expressed by participants is the accessibility of the health data that the state collects. While the state makes this data available online, it is rarely actively communicated or disseminated to partners, so partners may not be aware of these data resources. Participants reported that increasing timeliness of data reporting should be a priority moving forward, as the lack of timely data has compromised partners' ability to apply for grants. Other suggestions for improvement included increasing user-friendliness of databases so accurate data is easier to find and navigate for both public health professionals and laypeople, and creating a centralized data repository that different state agencies and partners could contribute to, which would help draw connections to the social determinants of health.

State-Local Relationships

Participants discussed the mechanisms in place for state level partners to assist local public health systems in accessing and interpreting health data. Participants reported a number of state-level partners that do an excellent job of making data accessible and useful for local communities, including medical partners, the American Heart Association, and the state's tobacco prevention project. These partners engage communities on a grassroots level by presenting and translating data to the local context, turning health data into information that can be used to mobilize for community health improvement. Participants reported that after many years of effort in this area, Mississippi's public health system appears to be gaining momentum and reaching a tipping point where grassroots efforts are becoming successful. Participants cited the example of the state's efforts to mobilize community partners across Mississippi to reduce early elective deliveries, which resulted in changes to insurance and Medicaid policies, leading to better birth outcomes and substantial cost savings for the state.

Participants cautioned, however, that there are still many partners missing in this work that fall beyond the traditional scope of health but have data that would be very relevant in helping local partners understand social determinants of health in their communities. As previously mentioned, data sharing among many partners occurs on a passive basis rather than through active and intentional dissemination. Health department partners noted that districts are addressing the challenge of gaps in local data by conducting community health assessments, which will help jurisdictions to drill data down to a more granular level that they can use to inform local public health interventions. Local district representatives reported a cultural shift toward greater emphasis on health assessment and community health improvement, which has expanded their scope of work beyond provision of clinical services. Participants defined important next steps as bringing partners across local public health systems together to facilitate relationship building and alignment of health improvement efforts based on the findings of the community health assessments.

Performance Management and Quality Improvement

Performance management and quality improvement was the lowest scored model standard for Essential Service 1. Participants reported lack of awareness of collective activity among partners to review the effectiveness of efforts to monitor health status, noting that any activity that may occur in this area would likely be siloed and ad hoc, and would not be shared with partners. Some internal quality improvement takes place in this area among the health department and health care organizations, but there is very little sharing of this information and there is no substantive collaborative effort in this area. Participants suggested that a system-wide survey could gather information on which partners collect data in particular areas that could be fed into a system-wide health status database. Doing so would make data more accessible and would facilitate more collaboration, but the major barrier to this is a lack of resources in funding and workforce.

Capacity and Resources

In the dialogue around the public health system's capacity and resources to monitor health status to identify community health problems, participants stated that there are grant opportunities in this area, but lack of financial resources is a barrier to higher performance. The state public health system can maximize collective assets by pooling resources and writing grants together, but participants cautioned that the competitive nature of grants and the scarcity of funding impedes data and resource sharing, because agencies are competing against one another for funding.

An additional challenge related to health status reporting in the area of mental health is that only programs funded by the Department of Mental Health can report data to the state, meaning that private and community-driven programs do not have a mechanism to share information to contribute to the state's overall picture of mental health.

A final challenge participants discussed within this model standard is the need to build workforce capacity in this area. Participants acknowledged that the state public health system has a small number of highly skilled statisticians and epidemiologists. However, overall, there is a lack of staffing and expertise across the system to appropriately monitor health status. This highlights an opportunity to partner with universities to attract and train the future public health workforce to enhance the system's capacity.

Strengths

Data Collection

- The system has a good data collection system in place.
- System partners collect a broad range of health status data.
- The Tobacco Prevention Project provides excellent data to grassroots community organizations.

Communication

- Written procedures are in place for communication from the state's laboratories on reportable public health threats.
- There are good processes for sharing information on emergent threats and hazards with partners and with the public.
- The system has great technical assistance to support establishment of electronic health records.

Weaknesses

Data Accessibility

- Partners lack awareness of how to access data.
- There is a lack of information systems infrastructure to facilitate data sharing.
- Low levels of health literacy and the complexity of data systems result in navigation challenges for the public.

Accuracy and Utility of Data

- It is challenging to get accurate data for small jurisdictions.
- The system has a lack of timely data.
- Sometimes data remains in raw form rather than being translated for application in the field.
- Many organizations release data episodically, making it challenging to track trends over time.
- There are challenges with data extraction and extrapolation from electronic health records.
- Mental health falls outside the domain of the Mississippi State Department of Health, making it more challenging for MSDH to address mental health as a critical public health issue.

Collaboration and Alignment

- There is a lack of alignment in data collection and dissemination efforts across public health system.
- Many agencies across local public health systems do not know each other, preventing partnership and alignment of community health improvement efforts.
- The competitive nature of grants is a barrier to collaboration and data sharing.
- There is a lack of collaborative system-level quality improvement of health status monitoring.
- Bureaucracy and the slow pace of government agencies make it difficult to maintain partnerships in the context of rapidly changing technology.

Workforce

- There is a lack of training available to build public health informatics competencies for organizational leaders.
- The systems lacks of staffing and expertise in statistics, epidemiology, and information management systems to meet level of need.
- Salary rates for state employees can inhibit agencies from being competitive in the hiring process.

Short Term Opportunities for Improvement

Collaboration and Alignment

- Create forums for local public health system partners to convene to build relationships and trust to facilitate aligned collective effort.
- Build partnerships with police departments and FBI to access crime and domestic violence data.
- Convene system partners involved in monitoring health status on a semi-annual basis to share information and engage in system-wide quality improvement in this area.
- Develop and disseminate a survey among public health system partners to determine available data that can contribute to collective monitoring of health status to develop a data resource list so partners know who to contact for specific data topics.
- Create a data reporting mechanism that allows mental health service providers to report data to the Department of Mental Health.

Long Term Opportunities for Improvement

Collaboration and Alignment

- State agencies must become more nimble and faster to stay current with rapidly advancing technology in order to facilitate data sharing with external partners.
- Begin to make a conscious shift toward partnering together on a consistent and sustained basis to function as a collective system.
- Align strategic plans and coordinate technological resources to improve system performance in monitoring health status.

Data Accessibility

- Create a centralized database that all state agencies and partners can contribute to and access.

Accuracy and Utility of Data

- Create a systematic approach to tracking specific health outcomes to allow for use of health data to track health outcomes and health status and determine effectiveness of interventions.
- Use health status data to articulate the cost of not addressing health problems to legislators.

Workforce

- Partner with universities to build epidemiology and biostatistics capacity among the future public health workforce.

System Capacity

- Enhance public health funding and resources statewide and system-wide.

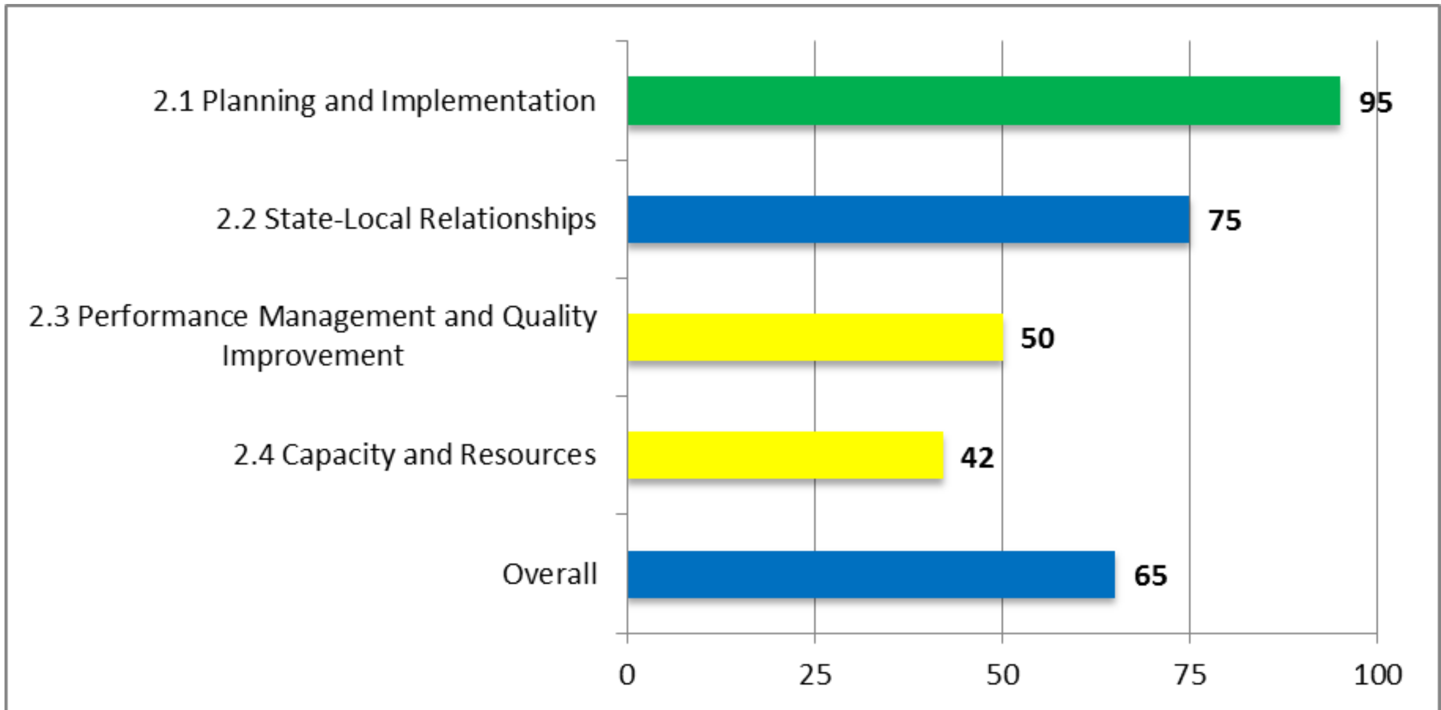
Essential Service 2: Diagnose and Investigate Health Problems and Health Hazards

Participant dialogue to assess performance for Essential Public Health Service 2 explored the following key questions:

- **What's going on in our state?**
- **Are we prepared for outbreaks?**

Diagnosing and investigating health problems and health hazards in the community encompasses the following:

- Epidemiologic surveillance and investigation of disease outbreaks and patterns of infectious and chronic diseases, injuries, and other adverse health conditions
- Population-based screening, case finding, investigation, and the scientific analysis of health problems
- Rapid screening, high volume testing, and active infectious disease epidemiologic investigations



Overall performance for Essential Service 2 was scored as a high moderate. Model Standards 2.1 (Planning and Implementation) were scored in the optimal range, Model Standard 2.2 (State-Local Relationships) scored in the significant range, Model Standard 2.3 (Performance Management and Quality Improvement) scored as high minimal, and Model Standard 2.4 (Capacity and Resources) scored in the moderate range. Performance for Essential Service 2 was ranked second out of the 10 Essential Services.

Essential Service 2 Summary

Planning and Implementation

Performance of the state public health system's surveillance and epidemiology services to identify health problems and threats received an optimal score. Participants reported that the system does an excellent job with surveillance, with many partners across the state engaged in this work. However, participants suggested pooling data collectively into a centralized repository rather than having databases dispersed throughout the system to strengthen performance in this area. Participants noted there is room for improvement with chronic disease data, but emphasized that more important than surveillance of chronic disease is investment in efforts to prevent and treat chronic disease. Participants stressed that chronic disease treatment and control can only be properly addressed if residents have insurance coverage so they can interface with the health care system. Funding prevention and treatment is the only way to move the needle on chronic disease outcomes. In the area of health hazard and threat surveillance, participants reported that the system responds swiftly and effectively. Participants noted the caveat that while the state performs very well in a crisis, the system does not excel in addressing issues proactively before they reach the point of crisis. Also, although conditions like obesity, chronic disease and infant mortality have reached a crisis level in Mississippi, the system has not responded accordingly. Participants attributed this weakness to Mississippi's culture, which seems comfortable with the status quo. Participants perceived that there is a tendency in the state to view conditions like obesity and chronic disease as problems that will always exist, rather than as urgent threats requiring resources and action to address. This highlights the need for a cultural shift in thinking about serious chronic conditions, so the state can apply lessons learned from disaster response where the system excels.

State-Local Relationships

In the dialogue around State-Local Relationships, participants reiterated that excellent mechanisms are in place for effectively communicating about and responding to emergent health hazards and disasters, but further resources need to be allocated to chronic conditions. Participants highlighted the need for a paradigm shift in the medical field away from treating and curing acute conditions quickly toward preventing and managing chronic disease over the lifespan. Accomplishing this requires that medical students are educated in this new paradigm and that doctors are aware of disease management resources and can connect their patients accordingly.

Participants described that response to health problems like chronic disease and mental illness is lacking because the system is designed to respond to emergent, acute threats like infectious diseases, for which there is ready treatment or cure. Because the system incentivized curing illness rather than fostering wellness, participants underscored the importance of transforming and modernizing the public health system to better address current needs.

Performance Management and Quality Improvement

In discussions around the extent to which the system reviews the effectiveness of surveillance, emergency preparedness, investigation and response activities, participants reported that the system does an excellent job reviewing surveillance, investigation, and response plans for emergent issues like infectious disease. Response plans are reviewed to ensure that they meet national standards, and the system periodically reviews its surge capacity and has plans in place to employ staff from partner organizations across the system.

While activity is strong for emergent threats, participants emphasized that review of the effectiveness of surveillance, diagnosis, investigation, and response is very poor for chronic diseases and other complex, long-term crises like infant mortality. Participants attributed this gap to an inadequate funding structure and a lack of regard for the importance of addressing long-term crises. They discussed that the state is strong in emergency response because the federal government responds to these disasters with an infusion of money to create capacity for rapid response. These funding mechanisms are not in place for problems like chronic disease and infant mortality. Addressing these long-term crises requires the allocation of a lot of money sustained over time, and both clinical and social strategies are needed to address the driving forces of poverty and educational inequity. While emergency response yields immediate results, moving the needle on issues like obesity and diabetes is expensive and complex. Participants felt that the lack of response to these long-term crises is also a cultural problem, in which people perceive these problems as important, but not urgent. They called for a culture shift to change the state mindset toward viewing these issues as unacceptable problems meriting rapid response and concentration of resources to address.

Capacity and Resources

Participants reported that while the system has the capacity and resources to do an excellent job in diagnosing and investigating emergent health hazards like infectious disease, capacity for chronic disease and other long-term problems is insufficient. The system lacks adequate funding and staffing levels to appropriately address these problems. Partners try to maximize limited resources through alignment and coordination of efforts. Participants referred to the success of the 39 Week Initiative, noting that this was made possible through collective coordinated effort, driven by alignment of strategic plans between the March of Dimes and the Association of State and Territorial Health Officials (ASTHO). This example can be a model for the system moving forward, but ultimately, the system will require greater allocation of funding and staffing resources to be successful in addressing root causes of these problems.

In addition to the need for greater funding and staffing, participants also identified the need for more staff with specific expertise in statistics, evaluation, and qualitative analysis, emphasizing that statistical analysis of problems, while important, is insufficient to build an understand driving forces of health problems and to determine strategies to address them. Qualitative analysis is critical to successfully addressing complex health problems like obesity and infant mortality.

Strengths

Emergency Response

- The state public health system performs very well in crisis and emergency situations- great emergency plans in place, and system can mobilize quickly to respond to a disaster and deploy resources where they are needed most.
- The state has conducted many disaster response drills to ensure that the system can respond appropriately in a crisis.
- Good mechanisms are in place to ensure communication throughout the system during a disaster.

Laboratory System

- The system maintains a well-functioning laboratory system.
- The state has recently standardized codes for lab testing, facilitating the state lab report extraction process.

Weaknesses

Chronic Disease and Long-Term Crises

- The system does not perform well in recognizing or addressing long term crises (e.g., obesity and diabetes). Few plans are in place, and if there are plans in place, they are not funded and resourced well enough to be effective in making a change.
- There is a lag in chronic disease data reporting.

Coordination and Alignment

- There is no central repository for chronic disease data, so many entities throughout the system are collecting and trending their own data rather than collectively sharing and analyzing it.

Funding

- There are many unfunded or partially funded mandates that cannot be met without adequate resources to support these efforts.

Communication

- There is room for improvement in ensuring that the right person at each agency is contacted when alerting partners throughout the system about possible health threats.
- The public health workforce lacks the capacity to appropriately filter communication about health threats done to non-English speaking communities.

Short Term Opportunities for Improvement

Performance Improvement

- Apply best practices from emergency preparedness throughout the public health system by engaging in after action reporting after responding to a health threat or hazard. Build in time to reflect on what has been done well and what could be done better in the future.

Communication

- Build awareness among physicians about community resources for chronic disease prevention and management so they can appropriately refer and connect patients.

Long Term Opportunities for Improvement

Chronic Disease

- While the system does a good job of chronic disease surveillance, further emphasis must be placed on implementing solutions to address chronic disease.
- Shift toward greater emphasis on prevention and management of chronic disease over the curative medical model that does well in addressing infectious disease but does not do well in addressing chronic conditions.

Coordination and Alignment

- Mississippi's public health system has demonstrated excellence when it rises up with a lot of support from partners to achieve something great. In every case where this has occurred, it was the result of multiple stakeholders joining together and all moving in the same direction with a very clear plan. The state should look to these examples of excellence as models for addressing long-term public health crises facing Mississippi residents.

Funding

- Work to enhance funding and staffing across the public health system.

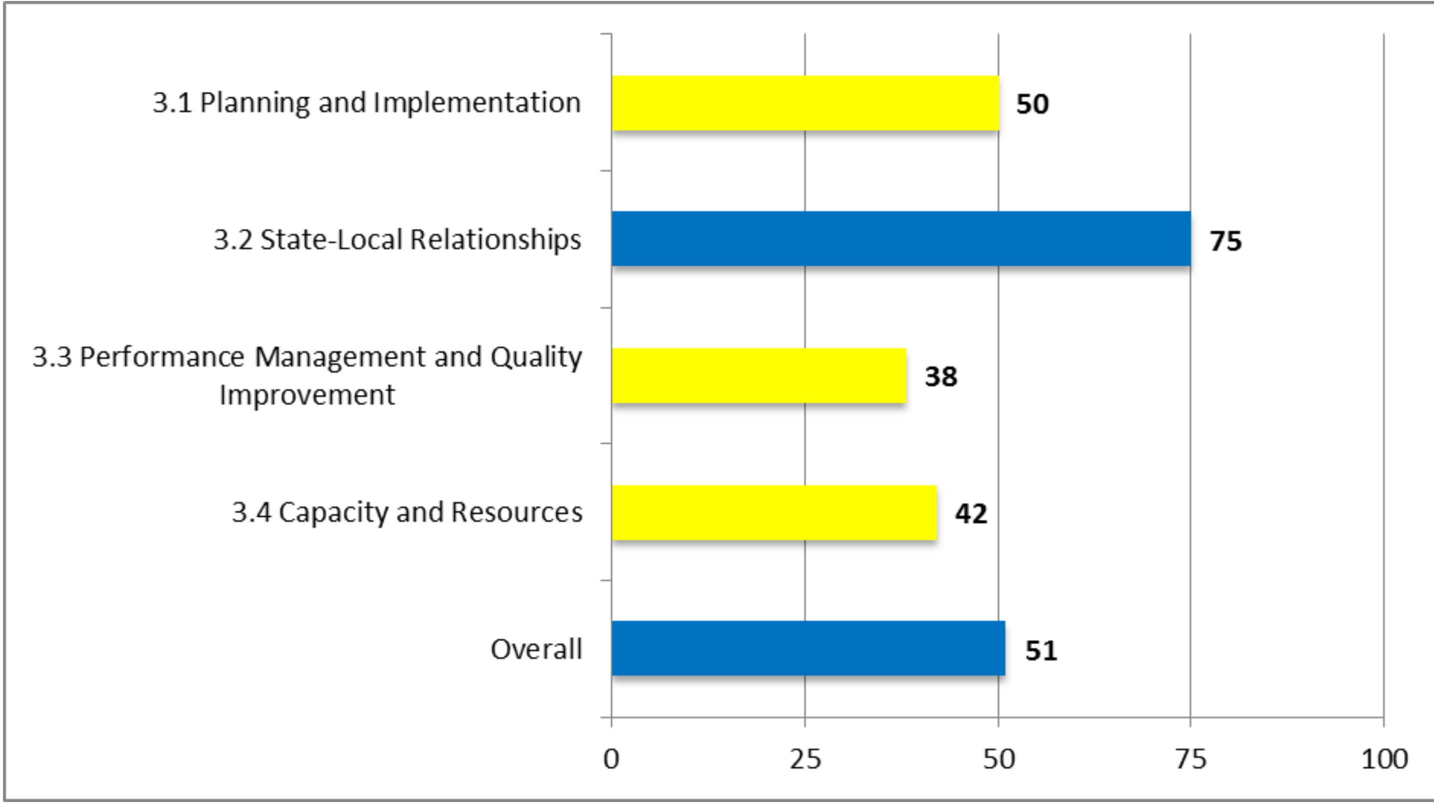
Essential Service 3:
Inform, Educate, and Empower People about Health Issues

Participant dialogue to assess performance for Essential Public Health Service 3 explored the following key questions:

- **What's going on in our state?**
- **Do we know our health status?**

Informing, educating, and empowering people about health issues encompasses the following:

- Health information, health education, and health promotion activities designed to reduce health risk and promote better health
- Health communication plans and activities such as media advocacy, social marketing, and risk communication
- Accessible health information and educational resources
- Partnerships with schools, faith communities, work sites, personal care providers, and others to implement and reinforce health education and health promotion programs and messages



Overall performance for Essential Service 3 was scored in the low significant range. Planning and Implementation, Performance Management and Quality Improvement, and Capacity and Resources received moderate scores and State-Local Relationships scored as a high significant. Performance for Essential Service 3 was ranked third out of the 10 Essential Services.

Essential Service 3 Summary

Planning and Implementation

In describing the system's implementation of public health programs and communication with the public, participants reported that individual organizations throughout the public health system engage in a lot of health education and health promotion work. Participants were concerned that health education and health promotion activities are not well coordinated across the system. While organizations partner together when funding is available to do so, the very specific parameters and time-limited nature of many funding streams hinder the ability to sustain work and function as a coordinated system. Participants cited the example of the system's great success in tobacco cessation education as an exception, which they said was made possible only through the substantial funding sustained over the past 15 years to support this work. If this level of funding were available to more efforts throughout the public health system, a greater level of coordination and effectiveness could be achieved. Another lesson learned from the success of tobacco cessation efforts is the need to ensure that health promotion practices are theory and evidence-based. While many programs throughout the system are grounded in evidence-based practice, this is an area the system must continue to emphasize to ensure that resources are being used as effectively as possible. Participants discussed that the system also needs far more funding to be able to effectively address messaging about health problems like HIV/AIDS and chronic disease, which are growing problems for Mississippi residents.

While much of the health education efforts occurring throughout the system are targeted to residents with chronic diseases and focus on proper disease management, participants also called for the system to disseminate more messaging promoting a culture of health, emphasizing education on how to prevent chronic diseases before they start. A critical component of this strategy would require outreach to youth, which highlights the need for a comprehensive and coordinated school-based primary prevention system. One opportunity that can help to achieve this is the Healthy Students Act, a state law passed in 2007 that mandates a minimum number of hours spent on health education to school children and the establishment of school health councils. The system should leverage this law to coordinate youth health promotion and education efforts throughout the state.

Participants discussed the increased recognition of the importance of the social determinants of health as a sign of progress for Mississippi. This growing recognition will help the public health system to more effectively promote health in Mississippi by encouraging the consideration of social, economic, and environmental factors that drive health status.

One area in need of improvement in the way the system informs and educates Mississippi residents about health issues is appropriate tailoring of messages to increasingly diverse communities. Participants discussed that simply translating messaging to another language is not sufficient because messages also need to be culturally appropriate to be well received and effective. The state public health system's workforce needs to develop and enhance skills in this area and continue to recruit staff across the system that reflect the changing demographics of the state.

State-Local Relationships

Participants described a strong presence of technical assistance from state public health system partner organizations to local public health systems to develop skills and strategies to conduct health education, communication, and promotion. The Mississippi State Department of Health has a lot of technical assistance resources, which are drilled down to the local level through the district offices. The American Heart Association

is also among the biggest technical assistance providers in the system, working with health care providers throughout Mississippi to develop statewide systems of care, resulting in Mississippi leading the nation in this area. Other states are looking to Mississippi as a best practice example, providing the opportunity for national impact in this domain.

Crisis communication is an area of great strength for Mississippi's public health system. State partners have strong local relationships in place for emergency planning and disaster response, and have a strong system of support and technical assistance to develop local emergency communications capacity. The public health system has policies and procedures in place to link local and state emergency communications plans, and local public health systems are trained in the use of the state's Health Alert Network.

Performance Management and Quality Improvement

Performance management and quality improvement was the lowest scoring model standard for Essential Service 3. Participants reported that while a lot of partners review and evaluate the effectiveness of their organization's or group's health communication, education, and promotion services and report this information to their funders, evaluation results are not widely shared throughout the system. Participants suggested that partners may be hesitant to share unsatisfactory findings, but stressed that this is necessary to accurately benchmark progress and share lessons learned. Participants discussed that assessment alone is not sufficient for performance management—there must be feedback loops in place to advance progress.

There are several areas where the system excels in gathering health communication evaluation data to inform quality improvement, including tobacco and diabetes education. Participants reported a lot of work going on in these areas, with the Mississippi State Department of Health being the driving force of this work. In addition, the American Heart Association has a robust performance management system in place for its statewide systems of care, which includes regular reporting of data, benchmarking, and ongoing quality improvement activities.

The system's health education and promotion related to mental health was defined as needing increased performance management and quality improvement activity to ensure efforts are data-driven or grounded in best practices. Given the growing prevalence of mental health concerns across the state, it will be particularly important for the public health system to improve this work.

A final concern raised was the need to examine the way the system assesses effectiveness in reaching diverse and vulnerable populations. Participants expressed concern that the people who could answer questions about whether messages are effectively targeted to diverse and vulnerable populations rarely have a seat at the table. This lack of representation is a substantial gap for the public health system. Further, participants cautioned that the people who are the target audience for policies and programs are not part of the conversation in determining the metrics that can truly assess whether a program is effective. The public health system has a great opportunity to engage service recipients and target audiences in assessment and evaluation activities to drive quality improvement.

Capacity and Resources

In the dialogue around the system's capacity and resources for health education and promotion, participants reported high levels of partnership for grant funded programs, as partnerships are often a grant requirement. Again, participants reiterated that the challenge of sustaining partnerships over the long term is the highly targeted and time-limited nature of grants. The system does well in partnering where funding exists to support

collaboration, but there is very little funding available for this, given the low level of state general funds available, the lack of flexible Federal funds, and general limitations of grant funding.

Participants reported that while the system has some strong communication workforce representatives, more are needed to build capacity to effectively respond to the needs of vulnerable and diverse populations. The workforce has many vacancies, but no ability to fill them due to lack of financial resources. As the public health system moves forward in its efforts to grow the public health workforce across the state, special attention should be placed on recruiting staff that are skilled in culturally and linguistically appropriate communications to serve the changing demographics of the state.

Strengths

Health Education and Promotion

- The system has a strong focus on education and prevention.
- The system has the ability to effectively promote messaging about how to improve health and has many great resources in place to get these messages out to the public.
- Tobacco cessation efforts have been very successful due to adequate and sustained funding, enabling the development of coordinated action across the system.
- The Healthy Students Act is a statewide mandate around health education and physical activity and requires establishment of school health councils, which provides a mechanism to coordinate a statewide health and wellness promotion strategy for Mississippi youth.

Crisis Communication

- Mississippi does a great job handling emergency situations, including keeping the public informed prior to and during emergencies and disasters.
- A strong Health Alert Network exists between the health department and hospitals.

Weaknesses

Coordination and Alignment

- There is a lack of coordination of health education and health promotion activities, with work occurring in silos across the system.
- The time-limited nature and highly specific parameters of grant funding streams are highly restrictive, encouraging creation of silos and hindering collaboration.

Workforce

- The system lacks sufficient staffing to meet the level of need across the state.

Communication and Messaging

- There is a lack of effective strategies to communicate the scope and importance of public health, making it difficult to garner public and legislative support.

- There is not enough health education messaging about chronic disease, and existing messaging is too focused on disease management rather than disease prevention.
- There has been very little public education about HIV/AIDS prevention despite having the fourth highest HIV/AIDS infection rate in the country.

Evaluation

- Statistical evaluation of health promotion activities is often not translated into a format that is accessible and widely understood.
- Individuals affected by policies and programs are not part of the conversation in designing metrics to determine whether these are effective.

Short Term Opportunities for Improvement

Health Promotion Strategies

- Continue to emphasize building a culture of health.
- Health counseling is an area of excellence in some schools, but the next step is to coordinate those efforts across the whole state.
- Increase chronic disease and HIV/AIDS prevention messaging.
- Increase emphasis on primary prevention and habit formation.
- Leverage mandate of school health councils under the Healthy Students Act to effectively promote health among Mississippi youth.
- Increase health messaging through social media like Twitter and Facebook.
- Improve targeting of health messaging to different community groups to increase relevance and effectiveness.
- Increase use of culturally appropriate bilingual and pictorial communication for those with limited English or low literacy.

Evaluation

- Increase engagement of service recipients in development and evaluation of health promotion messages.

Long Term Opportunities for Improvement

Coordination and Alignment

- Improve coordination of efforts and create alignment to affect a greater impact.
- Devote resources to database development and management and think about how we manage and share information to facilitate better alignment of resources and efforts.
- Advocate for the development of a school of public health in Mississippi, which could help to strengthen coordination across public health system partners.

- Shift messaging and health promotion activities toward promotion of a holistic culture of health rather than educating on prevention of specific diseases.
- Leverage Healthy Student Act education requirements to achieve consistency in health promotion messaging to youth across the state.

Funding

- Work to enhance funding and staffing across the public health system.

Public Health Marketing

- Create a public health promotion campaign to increase public awareness and understanding of the importance of public health.
- Improve the way public health is marketed to policymakers to assure funding to sustain and strengthen state public health infrastructure.

Workforce

- Build workforce diversity and workforce capacity in cultural sensitivity.
- Develop workforce capacity in cultural sensitivity and ensure that staff reflects the growing diversity of the state.

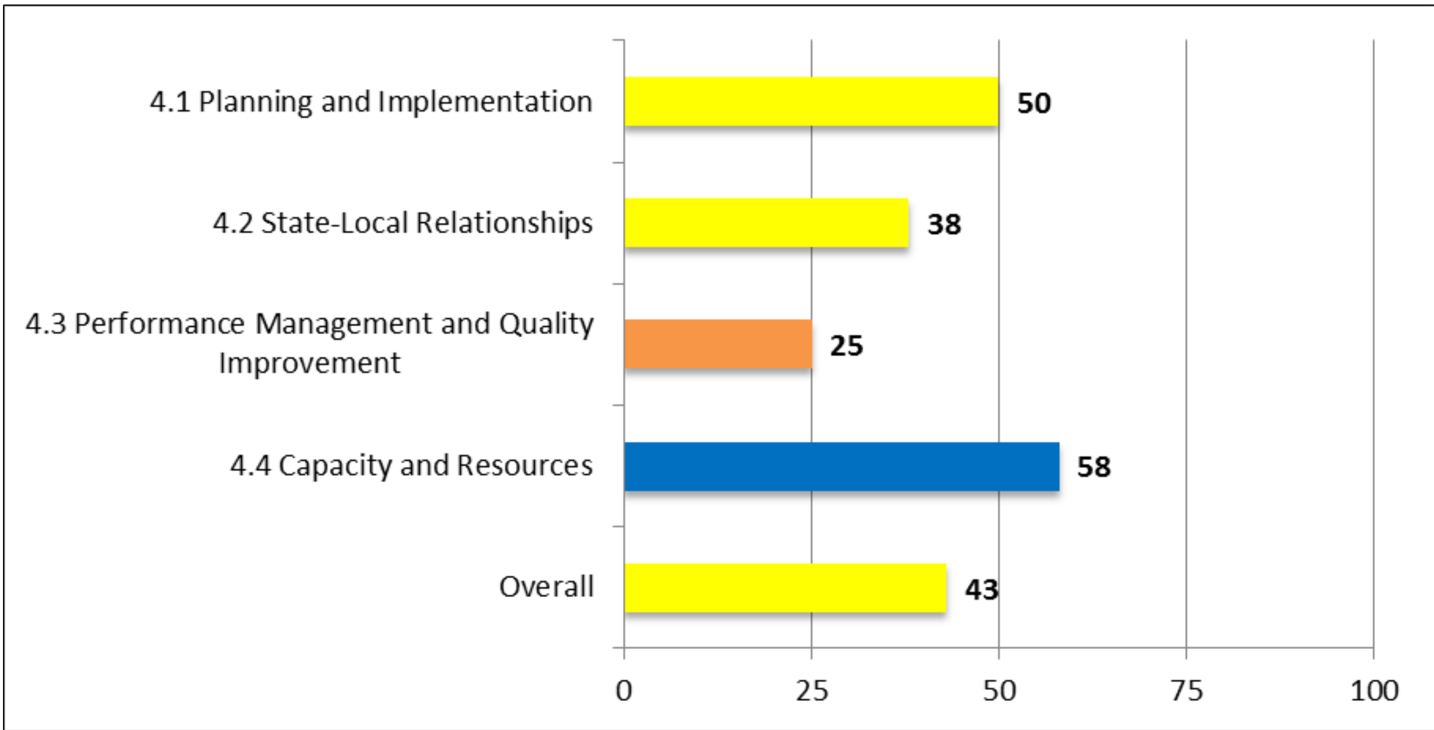
Essential Service 4: Mobilize Partnerships to Identify and Solve Health Problems

Participant dialogue to assess performance for Essential Public Health Service 4 explored the following key questions:

- **What's going on in our state?**
- **Are we engaging all possible partners?**

Mobilizing partnerships to identify and solve health problems encompasses the following:

- The building of a statewide partnership to collaborate in the performance of public health functions and essential services in an effort to utilize the full range of available human and material resources to improve the state's health status
- The leadership and organizational skills to convene statewide partners (including those not typically considered to be health-related) to identify public health priorities and create effective solutions to solve state and local health problems
- Assistance to partners and communities to organize and undertake actions to improve the health of the state's communities



Overall performance for Essential Service 4 was scored as moderate. Planning and Implementation and State-Local Relationships received scores in the moderate range, Performance Management and Quality Improvement scored as a high minimal, and Capacity and Resource was scored in the significant range. Performance for Essential Service 4 was ranked sixth out of the 10 Essential Services.

Essential Service 4 Summary

Planning and Implementation

In dialogue around the extent to which the system organizes, sustains, and mobilizes partnerships to address public health problems, participants reported that coalitions and task forces are present throughout the state, thus the partnerships and structure are in place to mobilize for action. However, while partners frequently convene to discuss health issues and may identify goals and objectives to work toward, groups rarely reach the stage of implementation and collective alignment of strategies to meet goals. This may be due to funding structures and parameters. Nonetheless, greater emphasis must be placed on collaborative implementation and shared accountability.

Another challenge that coalitions face in their work is that they often allocate substantial effort toward advocacy for a particular policy to address a health issue without success Coalitions must continue to build relationships with elected officials and find areas of common interest to effectively communicate the need for strong public health policies.

However, Mississippi does have examples of successful partnerships and advocacy resulting in policy development. Specifically, Mississippi's concussion law required the convening of partners across a range of agencies in order to establish required standards of care for athletes with concussions and resulted in the successful passage of a data-driven law informed by public health experts.

Participants discussed that in the past, partnerships have been very minimal; but there has been tremendous progress in the area of sustaining formal partnerships in recent years, which is continuing to gain momentum. Participants reported that agencies are now beginning to think of themselves as part of a public health system, and stated that the State Public Health System Assessment is a wonderful opportunity to come together as a system to learn about the collective work occurring throughout the state and to strengthen collective understanding of system standards and best practices.

State-Local Relationships

In the dialogue around state-local relationships, participants discussed the need to start thinking broadly about how to build coalitions to empower community members to mobilize for community health improvement at the local level. Empowering community members to take grassroots action will help to address the lack of public health workforce capacity and will also help to foster a culture of health in local communities. One way the system is currently doing this is through working with mayors and community members in small towns to develop health plans to increase access to physical activity and fresh produce, and providing technical assistance to help implement these plans.

Participants identified the need for more collaborative training opportunities to increase capacity in community health improvement initiatives. One example where this has worked well is among employers who have pooled resources to engage in collaborative training on worksite wellness. Participants also called for greater technical assistance for local health departments, who need to increase their capacity in partnership building as they shift away from direct provision of clinical care toward a focus on community health and wellness.

Participants reiterated that the system does not do well with incentivizing broad-based local public health system partnerships, noting again that grants contribute to siloing by placing strict limitations and parameters on partnering. There is also a lack of financial incentives from the state government to form and sustain broad-based partnerships. This highlights the need to restructure the way public health is funded over the long term. In the short term, participants suggested that increasing collaboration with corporate entities could address financial barriers to maintain partnerships.

Performance Management and Quality Improvement

Performance management and quality improvement was the lowest scored model standard of Essential Service 4. Participants explained that because partners have been functioning in silos for so long, there has been very little measurement and evaluation of the system's collective performance. The idea of a public health "system" has recently started to gain momentum, which is promising. The State Public Health System Assessment demonstrates willingness to engage collectively in performance improvement and will provide a good opportunity to build a foundation for this work moving forward.

Capacity and Resources

While participants reported a need for increased funding and workforce to develop capacity in partnership building overall, participants also described many other ways Mississippi residents contribute to community improvement. The state's culture of generosity and volunteerism is a tremendous asset. While financial resources are less available in Mississippi than in many other states, participants emphasized that Mississippi is at the top of the scale in giving of time and talents, and communities are working to engrain this spirit of giving in children early on by building community service requirements into school curriculums. Another opportunity that the system can use to address the lack of grant and state funding is by working to engage nontraditional partners like businesses to increase public health capacity across the state.

Strengths

Coordination and Alignment

- Mississippi's public health system is experiencing the beginning of some very promising partnerships. There is a lot of good work going on and some good partnerships in place that do great things, but the system can expand on this moving forward.

Community Engagement

- Culturally, Mississippi has a strong spirit of giving of time, talents, and treasures.
- Healthy Hometown Initiatives empower community members to drive decision-making at the local level to improve health.

Health Promotion

- There are good resources in place to promote worksite wellness among employers.

Weaknesses

Coordination and Alignment

- The highly specific scope and time limited nature of grants encourages development of silos.
- Partnerships and coalitions convene to discuss health issues, but rarely reach the stage of implementing strategies to address these problems.

- There is a lack of funding mechanisms to support and sustain long term partnerships.
- Shortages in staffing across the system limit organizations' abilities to participate in partnerships.

Advancing Best Practices and Evidence-Based Public Health

- Policies are often advanced without appropriate regard for evidence-based or best practices.
- Quality improvement is lacking. System partners are good at getting work going, but often lack the resources and support to take the next step and evaluate and improve performance based on evaluation data.

Short Term Opportunities for Improvement

Coordination and Alignment

- Improve training for coalitions to build capacity in working toward collaborative action.
- Create collaborative training opportunities, and make them available to staff from hospitals, nonprofits, workplaces, and the health department.
- Increase outreach efforts to nontraditional partners, and work to build understanding of how to engage these partners (e.g., employers may have staff that would like to volunteer time toward community health efforts). Foster relationships with businesses to increase funding and capacity for public health improvement.

Long Term Opportunities for Improvement

Funding

- Shift to a mindset of viewing grants as seed money to start work that can then be supported long term through other types of giving. Think about how to leverage Mississippi's culture of generosity to support sustainability of public health efforts.
- Plan for sustainability of efforts rather than relying on funding from original grant source.
- Increase staffing and funding public health workforce.

Coordination and Alignment

- Create a statewide database of partner resources to increase resource sharing and partnerships across the public health system.

Advancing Best Practices and Evidence-Based Public Health

- Work to ensure that future laws are more data-driven.

Community Engagement

- Empower community members to mobilize grassroots action to improve health at the local level.

Essential Service 5:

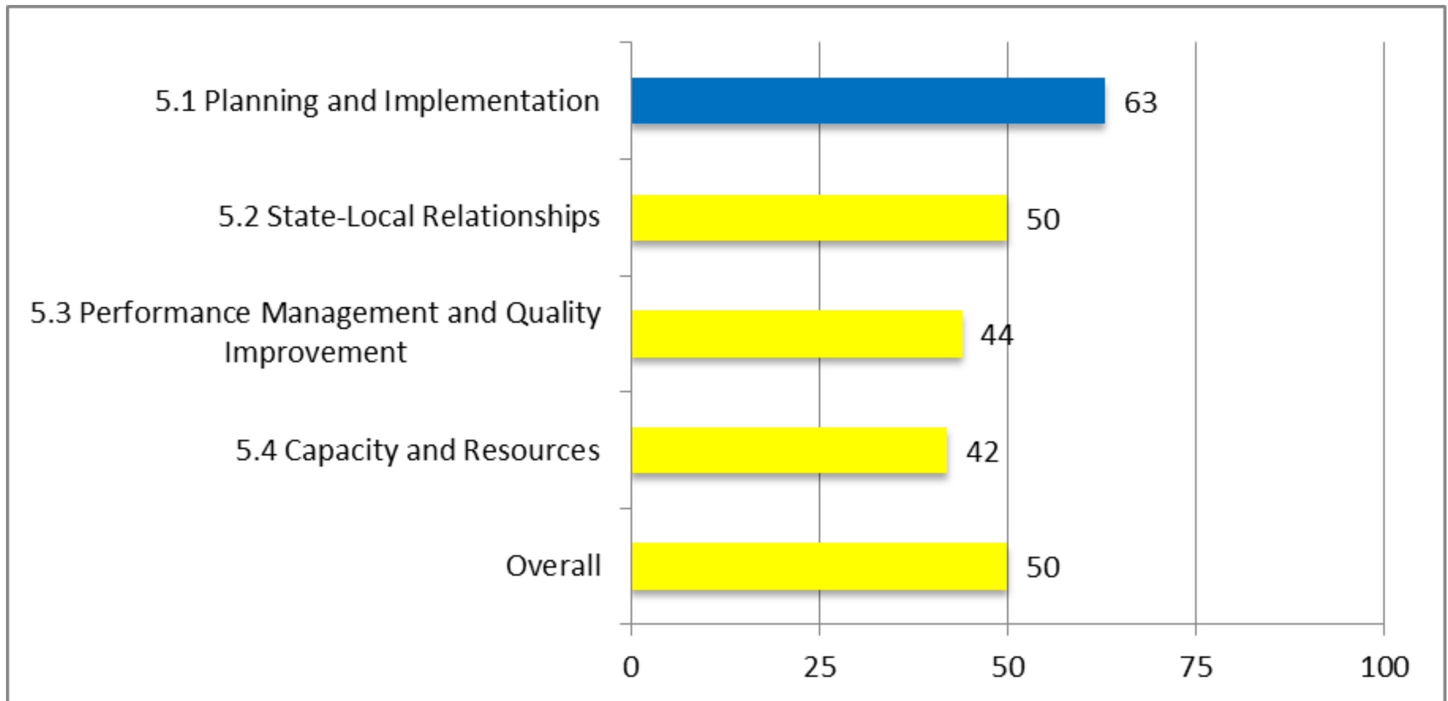
Develop Policies and Plans that Support Individual and Statewide Health Efforts

Participant dialogue to assess performance for Essential Public Health Service 5 explored the following key questions:

- **What's going on in our state?**
- **Do we support all health efforts?**

Developing policies and plans that support individual and statewide health efforts encompasses the following:

- Systematic health planning that relies on appropriate data, develops and tracks measurable health objectives, and establishes strategies and actions to guide health improvement at the state and local levels
- Development of legislation, codes, rules, regulations, ordinances, and other policies to enable performance of the EPHS, supporting individual, community, and state health efforts
- The process of dialogue, advocacy, and debate among groups affected by the proposed health plans and policies prior to adoption of such plans or policies



Overall performance for Essential Service 5 was scored as a high moderate. Planning and Implementation scored as significant and State-Local Relationships, Performance Management and Quality Improvement, and Capacity and Resources were each scored in the moderate range. Performance for Essential Service 5 was tied with Essential Service 1 for fourth and fifth place out of the 10 Essential Services.

Essential Service 5 Summary

Planning and Implementation

Participants reported that statewide, public health partner organizations create a number of health improvement plans, but plans are often siloed rather than shared collectively by multiple partners. Public health agencies engage state and community–level leaders in planning efforts, but rarely successfully engage the target populations affected by health improvement efforts. Plans are evidence-based and data-driven when possible, but participants expressed concern that it is very difficult to get good, consistent data because the state lacks the information systems necessary to effectively collect and communicate data. State agencies in Mississippi lack an interoperable network that allows for transfer of data, and there is no system in place for Medicaid, the Mississippi Department of Health, and the Mississippi Department of Mental Health to share data. Agencies have significant challenges sharing data both internally and externally, making health data largely inaccessible. Even when data can be accessed, the lack of funding available for data collection has resulted in serious gaps. This is a substantial barrier to advancing health improvement plans, because the absence of state data means that the system cannot demonstrate the need for policies and programs and cannot use data to demonstrate whether policies and plans are working.

Participants did point to a number of success stories in which the system effectively used evidence-based practices to advance health improvement initiatives, including the creation of the concussion law, which mandated standards of care for athletes with head injuries and the 39 week initiative, which engaged providers and payers in reducing elective deliveries before 39 weeks. In both of these examples, engagement and convening of multiple stakeholders were critical components to ensure their success. The 39 week initiative, which was adopted voluntarily by partners across the health system, was pointed to as a good process model for policy change for Mississippi, because stakeholders from across the system came together and voluntarily committed to changing institutional policies based on the current public health evidence base, rather than having these changes legislated by state lawmakers. This voluntary process allows a mechanism for policy change that is more nimble than the legislative process, as the policy is driven by stakeholders and can be adjusted if best practices or the evidence base changes.

Participants reported that while many health improvement plans are created, implementation of these plans is largely absent, as plans lack measureable objectives and collaborative approaches to accomplish them. Participants discussed the importance of coming together as a system to create the State Health Improvement Plan, which will identify priorities for the state and will create a clear road map toward improving health status in Mississippi.

Participants reported that one area of planning and implementation where Mississippi excels is emergency preparedness and response. Due in part to the state's experience in responding to crises like Hurricane Katrina, Mississippi leads the nation in all-hazards preparedness planning.

State-Local Relationships

In dialogue around state public health organizations' provision of technical assistance and training to local public health systems in developing community health improvement plans, participants reported that this has traditionally been lacking, but it is now increasing as the state is undergoing the State Health Assessment and State Health Improvement Process. In addition to conducting a state level assessment and improvement plan, the Mississippi Department of Health is also providing technical assistance and capacity building to district offices for regional assessment and planning.

Participants reported strong technical assistance to communities across the state in developing local all-hazards preparedness plans for responding to emergency situations.

Performance Management and Quality Improvement

In the area of performance management and quality improvement, participants reported that state public health system partners regularly review the progress of their respective programs, but there is no collective review process, and there is very little formal quality improvement in place. Again, emergency preparedness planning serves as an exception to the relatively low activity within this area. Participants stated that the system regularly conducts formal exercises and drills of the procedures and protocols linked to all-hazards preparedness plans and makes adjustments to plans based on the results of these drills.

Participants also reported that while state public health system organizations may review new policies to determine their public health impacts and to inform policymakers and the public about these impacts, this currently occurs on an ad hoc basis. Improvement can be made by adopting a Health in All Policies Approach and by conducting Health Impact Assessments to determine the public health impact of potential new policies being considered by state legislators. Participants further identified the need to create a system for reviewing existing policies to determine whether they are aligned with the current public health evidence base.

Capacity and Resources

In regard to capacity and resources, participants reported that the great scarcity of funding for public health makes it challenging for partner organizations to share financial resources to support health planning and policy development efforts, though organizations may collaborate when seeking new financial resources like grant funding.

Participants also said that traditionally there has been little alignment and coordination of efforts in implementation of health plans and policy development. Partner organizations have not aligned their strategic plans or coordinated technological resources and do not have information systems in place that allow for the sharing of data that could inform planning and policy development. However, participants expect progress to be made in these areas through Mississippi's State Health Assessment and State Health Improvement Plan processes.

In the dialogue around workforce capacity, participants agreed that while state public health system partner organizations have the professional expertise to conduct planning and policy development activities, the system is not sufficiently staffed to achieve optimal performance in this area.

Strengths

Coordination and Alignment

- Mississippi is in the process of conducting its first State Health Assessment (SHA), which will then inform the development of a State Health Improvement Plan (SHIP) to create shared health priorities for the state public health system to collectively address to improve Mississippi's health status.

Advancing Best Practices and Evidence-Based Public Health

- The public health system is good at working towards evidence-based practice to ensure that partners are devoting resources to efforts that will work.
- Mississippi has a law that data used for performance improvement by the Mississippi State Department of Health is kept confidential from lawyers, which enables the health department to privately reach out to hospitals that aren't performing well to help them improve their outcomes.

Weaknesses

Coordination and Alignment

- Mississippi has never conducted a State Health Improvement Plan (SHIP) process, so there has been a lack of strategic coordinated alignment in health improvement activities for the state.
- Past community health improvement planning efforts have been siloed and rarely have reached the implementation and evaluation stages.

Policy Development

- Public health does not appear to be a priority of the state legislature, making policy change difficult.

Data

- Health data is often collected inconsistently.
- There is no interoperability or formal data transferring mechanisms in place among state agencies, making data sharing very challenging from agency to agency.
- The public health system has had limited success in engaging community members in community health improvement planning.

Short Term Opportunities for Improvement

Partnership Development

- Develop strategies to attract and maintain new partners.

Policy Development

- Ensure there is an evidence base for future regulation and policy proposals.
- Improve health planning efforts by reaching out to populations affected by proposed programs and policies for their input and support.
- Use best practice example from the 39 Week Initiative to convene system partners to collectively design and adopt voluntary policy and institutional changes when legislative change is slow or unlikely to be successful.

Long Term Opportunities for Improvement

Coordination and Alignment

- Develop a clearinghouse of data so it is easy for all partners to contribute and share information.
- Work to break down siloed and territorial state agencies.

Policy Development

- Shift policy priorities to emphasize prevention and health promotion, and specifically toward promoting a holistic culture of health rather than addressing specific health issues through legislation.
- Promote policies to create environmental change to foster healthy behaviors.

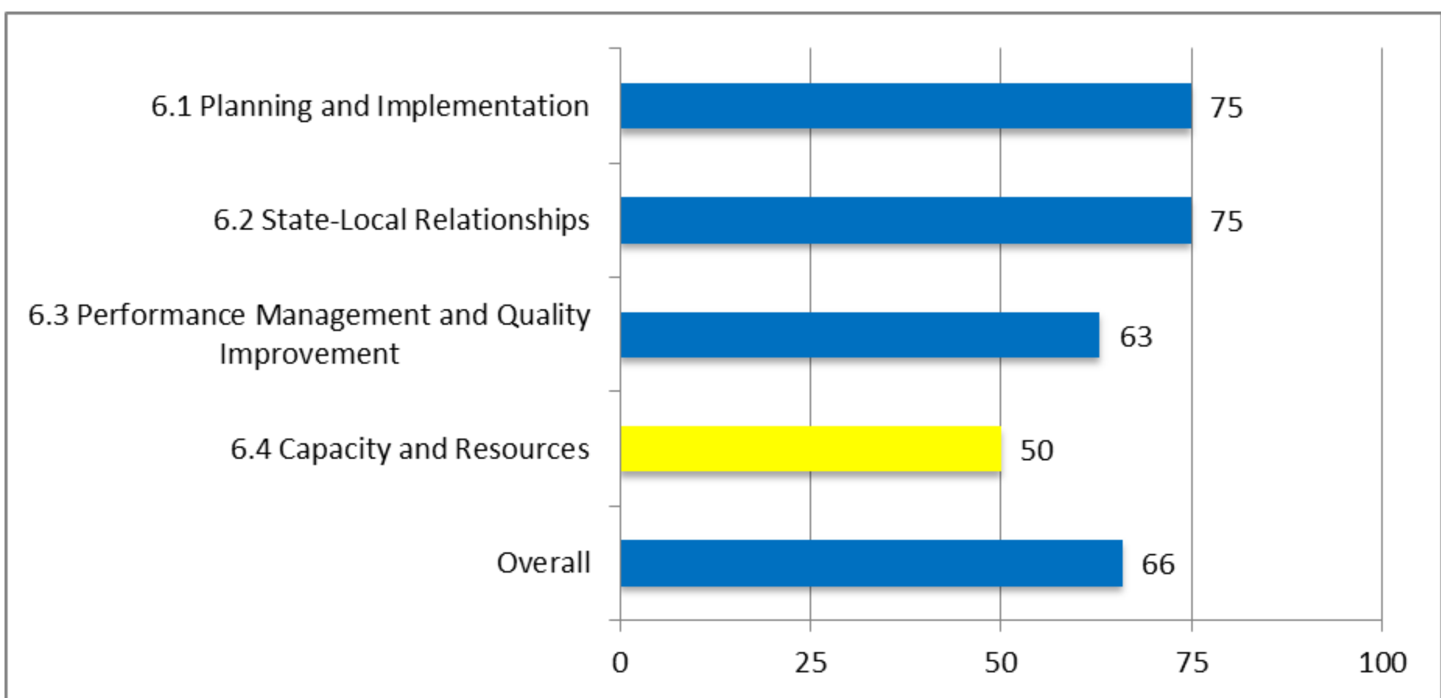
Essential Service 6:
Enforce Laws and Regulations that Protect Health and Ensure Safety

Participant dialogue to assess performance for Essential Public Health Service 6 explored the following key questions:

- **What's going on in our state?**
- **Do our laws keep us safe and healthy?**

Enforcing laws and regulations that protect health and ensure safety encompasses the following:

- The review, evaluation, and revision of laws (laws refers to all laws, regulations, statutes, ordinances, and codes) designed to protect health and ensure safety to assure that they reflect current scientific knowledge and best practices for achieving compliance
- Education of persons and entities in the regulated environment to encourage compliance with laws designed to protect health and ensure safety
- Enforcement activities of public health concern, including, but not limited to, enforcement of clean air and potable water standards; regulation of healthcare facilities; safety inspections of workplaces; review of new drug, biological, and medical device applications; enforcement activities occurring during emergency situations; and enforcement of laws governing the sale of alcohol and tobacco to minors, seat belt and child safety seat usage, and childhood immunizations



Overall performance for Essential Service 6 was scored as significant. Planning and Implementation, State-Local Relationships, and Performance Management and Quality Improvement received significant scores and Capacity and Resources scored as a high moderate. Performance for Essential Service 6 was ranked first out of the 10 Essential Services.

Essential Service 6 Summary

Planning and Implementation

Participants described a strong system in place for assuring that existing and proposed state laws are designed to protect the public. Participants reported that there are established cooperative relationships between regulatory bodies and regulated entities. For example, a representative from the National Restaurant Association participates on Mississippi State Department of Health's food inspection advisory board, which occurs in very few states. Maintaining good partnerships between the Department of Health and regulated entities is critical to the success of enforcement, encouraging compliance and establishing open lines of communication to foster dialogue about how regulatory activities can be improved to assure that laws are accomplishing their purpose of protecting the public.

Participants identified the need to make administrative processes more customer-centered and user-friendly for certification and licensure. They described cumbersome licensure processes requiring too much paperwork, outdated forms that are difficult to complete, and little assistance from licensure boards in achieving compliance. A notable exception is the licensure process for nurses, which participants described as very user-friendly and efficient. They suggested that an opportunity for improvement is to create one central office of professional licensure modeled after the nursing licensure board. They reported that many states have a single professional licensure board, and noted that this would not only result in better customer service, but would likely also increase compliance and reduce costs.

State-Local Relationships

Mississippi public health system partner organizations work with local public health systems throughout the state to provide training, technical assistance, and other resources to support local enforcement of laws to protect the public's health. In the realm of environmental health, participants reported that the Mississippi State Department of Health has a great mechanism in place to work with local water associations to certify drinking and wastewater. Many courses and trainings are offered throughout the state to filter assistance down to the local level. The Mississippi State Department of Health also works with fire departments and law enforcement across the state to train on child safety restraint laws and how to properly install car seats so the fire department can educate the community and police can ticket individuals when they do not have their children properly restrained in their vehicles. Within the areas of construction and food protection, technical assistance and training on compliance with safety laws and regulations is primarily delivered by private sector entities, but trainings are high quality and available across the state to meet local needs.

Participants emphasized that the state public health system's regulatory strategy lies in providing good technical assistance and support to regulated entities to assure compliance before enforcement and punitive measures are needed.

Performance Management and Quality Improvement

In the dialogue around performance management, participants discussed the process for reviewing the effectiveness of public health and safety laws and compliance and enforcement activities. They stated that this activity is a required component of any activities that receive funding from a federal agency, such as the EPA.

Participants identified the need for better performance management of enforcement activities, and described a lack of quality assurance and inter-rater reliability among inspectors across the state. Participants described

that the central office of the Mississippi State Department of Health has a process in place for standardizing regulatory inspections, in which a representative from the central office accompanies district inspectors on site inspection to try to ensure consistency across the state. However, follow up when problems arise is weak, and representatives from the food safety sector reported that the inspection process is still very inconsistent from district to district.

Capacity and Resources

System capacity and resources was assessed as the lowest performing model standard of Essential Service 6, with lack of funding being the primary driver of this low score. Participants reported that federal agencies like the EPA require that enforcement activities are carried out, but do not supply any funding to support enforcement. Instead, funding is allocated to technical assistance to help regulated entities comply with laws to avoid enforcement. Very little funding is allocated from the state to support enforcement activities, and funding that does exist is not allocated appropriately according to the level of need. For example, participants reported that funding for enforcement of drinking and driving far exceeds most other enforcement activities where need is great, including enforcement of seatbelt use.

A particularly disconcerting trend in enforcement in Mississippi is the rise in unfunded mandates from the state Legislature, making it very difficult for the Mississippi State Department of Health to assure compliance. Participants reported that in some cases charging fees for noncompliance can offset enforcement costs, but these fees are generally too low to generate sufficient funding to support costs, and the state often prohibits regulating entities from raising fees due to lobbying from regulated parties.

Further, participants cited examples of activities that are necessary to protect the health and safety of citizens, but are completely unfunded and cause a loss in revenue. Tuberculosis was one example cited, with participants noting that action from the Mississippi State Department of Health is vital to protecting the health of the public, and there is no other entity in the system to fill this role. In examples like this, the Health Department's role of assuring public health and safety requires the department to take a financial loss in providing these services. Despite the financial challenges the system faces in carrying out this essential service, participants reported that performance is high because good relationships are in place between regulators and regulated entities and because the state has strong mechanisms for technical assistance to assure compliance. Though regulatory activities are significantly understaffed, the workforce the system has is highly skilled in administration of legal and regulatory programs.

Strengths

Support for Regulated Entities

- Mississippi is a model for the nation in driving change through collaboration rather than regulation.
- The Mississippi State Department of Health maintains great relationships with regulated entities.
- There is good technical assistance from both the public and private sector is provided to regulated entities across the state.

Emergency Planning

- Mississippi is nationally recognized for excellence in emergency preparedness planning.

Advancing Best Practices and Evidence-Based Public Health

- Nonprofit organizations like the American Heart Association do a great job of providing evidence-based data to inform the development of laws, regulations, and ordinances.

Weaknesses

Quality and Customer Service

- There is a cumbersome certification and licensure processes for physicians, EMTs, and other health professionals.
- Inspection processes are not consistent across districts.

Funding

- Very little state and federal funding is allocated to enforcement activities.
- Funding for regulatory activity is not allocated according to the level of need.
- The state Legislature is increasingly creating unfunded mandates.

Short Term Opportunities for Improvement

Coordination and Alignment

- Conduct strategic planning to align efforts and strengthen partnerships.
- There are good inter-agency partnerships across the state, but these should be leveraged and expanded to better align efforts statewide.

Advancing Best Practices

- Use nursing board licensure process as a model to make licensure processes more customer-centered and user friendly across the system.

Long Term Opportunities for Improvement

Quality Improvement

- Standardize health inspection process and procedures statewide to create consistency across districts.
- Bring all health professional licensure boards under one umbrella.

Funding

- Analyze budget for regulatory and enforcement activities to determine if restructuring can be done to shift allocation of funds to better align with needs.

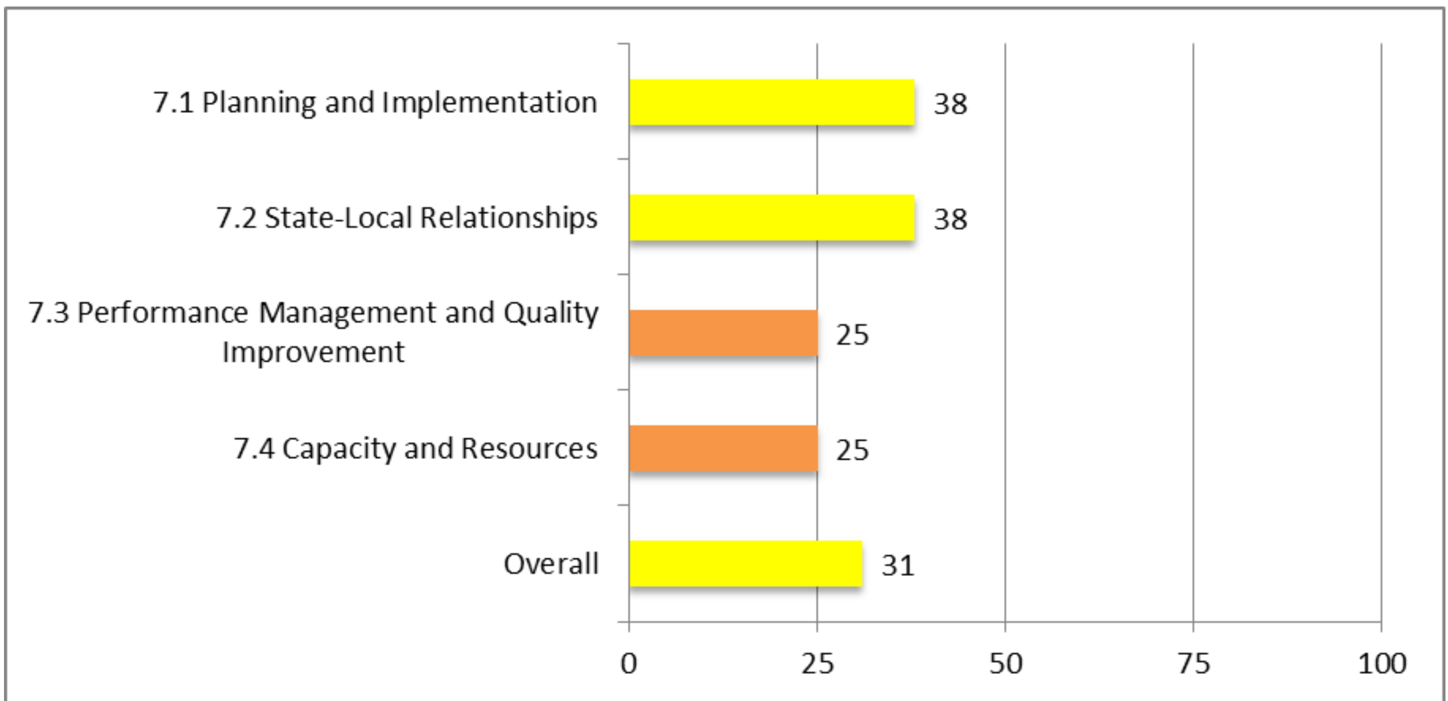
Essential Service 7:
Link People to Needed Personal Health Services and Assure the Provision of Healthcare When Otherwise Unavailable

Participant dialogue to assess performance for Essential Public Health Service 7 explored the following key questions:

- **What's going on in our state?**
- **Do the residents of our state have access to the health services they need?**

Linking people to needed personal health services and ensuring the provision of health care when otherwise unavailable encompasses the following:

- Assessment of access to and availability of quality personal health services for the state's population
- Assurances that access is available in a coordinated system of quality care which includes outreach services to link populations to preventive and curative care, medical services, case management, enabling social and mental health services, culturally and linguistically appropriate services, and healthcare quality review programs
- Partnership with public, private, and voluntary sectors to provide populations with a coordinated system of healthcare
- Development of a continuous improvement process to assure the equitable distribution of resources for those in greatest need



Overall performance for Essential Service 7 was scored as a low moderate. Planning and Implementation and State-Local Relationships scored in the moderate range and Performance Management and Quality Improvement and Capacity and Resources received high minimal scores. Performance for Essential Service 7 was ranked ninth out of the 10 Essential Services.

Essential Service 7 Summary

Planning and Implementation

In dialogue around system performance in linking people to personal health services and assuring provision of healthcare when otherwise unavailable, participants described a good system in place for assessment of availability of and access to services. Federally Qualified Health Centers (FQHCs), Rural Health Clinics, and tribal health centers each do assessments of their communities to determine needs of underserved populations to understand and address barriers to accessing care.

Participants identified several vulnerable populations that experience substantial barriers in accessing health care, including individuals with mental health issues, the LGBT community, racial and ethnic minorities, residents of rural communities, non-English speakers, low-income populations, and seniors.

Participants described a number of efforts to address barriers to care for vulnerable communities. The first clinic in Mississippi specifically designed to address the specific health care needs of LGBT populations recently opened. The clinic is staffed with providers who are culturally competent in meeting the unique needs of this community. Federally Qualified Health Centers offer sliding scale health services according to a patient's ability to pay, and assist individuals in enrolling in insurance when they are eligible.

Participants also described many barriers that the system has not been able to address successfully. For example, Mississippi's health care system is structured in a manner that separates mental health care from primary health care, and services that would meet the true needs of individuals with mental health issues are often not provided because they are not reimbursable. Additionally, many self-employed individuals in the Vietnamese fishing communities in the coastal region are eligible for insurance for the first time through the Affordable Care Act. However, as many individuals in this community are first-time users of health insurance, they do not know how to navigate the healthcare system and lack access to culturally competent health services.

Participants also described root causes that they perceived as driving forces of health inequities in Mississippi. Educational and income inequity contribute to disparate health outcomes among vulnerable communities. Ensuring access to safe housing, quality education, and good jobs is as critical as ensuring access to health care in improving population health outcomes.

One strategy that would address some of the barriers to care that vulnerable Mississippi residents experience is the establishment of a statewide health insurance exchange to assure access to insurance coverage. Participants reported that while the public health system has advocated for the creation of such an exchange, this is a politically sensitive issue that does not have strong support across the state.

In dialogue around collaborative action to reduce health disparities, participants reported that efforts are often very siloed, and described that addressing disparities effectively requires a big picture approach and coordinated mobilization of resources. Participants noted that system partners do collaborate to address health disparities, but these collaborations have focused heavily on educating communities, which they described as low hanging fruit yielding marginal results. They stated that what is truly needed to reduce disparities is mobilization of resources to change the conditions that drive inequity by fostering economic development and creating safe, healthy environments by building sidewalks, parks, and safe housing. They acknowledged, however, that while system partners understand that policy and environmental change strategies are far more effective than education in creating health improvement, substantial political and systemic barriers exist that prevent partners

from successfully advancing these strategies. Participants reported that a task force was recently formed to create a state health disparities plan, which will seek to address these barriers and leverage resources to drive community change to increase health equity.

State-Local Relationships

Participants reported that Mississippi public health system partner organizations are engaged in provision of technical assistance to local public health systems on methods for assessing and meeting the needs of underserved populations, but the barrier to success in many cases is gathering local public health system representatives together to participate in assessment and improvement processes. Participants explained that this is due in part to the shortage in the public health workforce at the local level, making it hard for staff to attend trainings and participate in assessment and improvement processes.

Staffing shortages were also perceived as a key factor in limiting effectiveness of providing technical assistance to providers delivering personal healthcare services to vulnerable and underserved populations. While participants described a wide availability of trainings on many topics, including implementing culturally and linguistically accessible services and understanding the needs of special populations, they reported that many providers may be interested in building their knowledge and capacity in these areas but are unable to attend trainings because doing so would require shutting down clinic services if they are the sole providers at their clinics. One strategy to address this barrier is taking training and technical assistance resources directly to providers through site visits, though participants acknowledged that this is very costly.

Performance Management and Quality Improvement

In the dialogue around performance management, participants identified that the principle barrier to improving the quality of healthcare services is the lack of communication and data sharing among system partners. Individual partners are conducting reviews of healthcare quality by comparing their services against national standards and benchmarks and are assessing barriers to healthcare access, but there is very little coordination or collective effort in this area. Participants identified the need for an entity to lead this activity by bringing system partners together to connect the dots and examine collective performance, and suggested that the Mississippi State Department of Health is well suited to take on this role.

Capacity and Resources

Participants discussed that grant funding is insufficient in addressing barriers to health and access to care, because gaps are only filled on a short-term basis for the duration of the grant. Grants have also traditionally contributed to creation of silos, but participants described that funders are increasingly requiring partnerships between organizations to increase long-term sustainability. Participants suggested that sustainability planning should become a standard practice across the system whenever a new grant is received. Planning for sustainability up front can help foster long-term partnerships and ensure continuity of services when grant funding has expired.

In assessing how well partner organizations align and coordinate their efforts across the system, participants reiterated that there is a lack of communication among partners, so organizations are not well-informed about services that exist throughout the system, preventing proper alignment of activities. Participants stated that system partners must do a better job of marketing their services, and suggested that a statewide database summarizing services throughout the system may be needed.

A final capacity issue identified by participants was the lack of sufficient staffing throughout the public health system to carry out the functions of linking people to health care services. Health department representatives reported that it is difficult for the state to recruit personnel that have the skill set required based on what the state can afford to pay them. While workforce capacity needs to be increased throughout the system, participants highlighted a particular need for additional IT expertise to carry out healthcare monitoring and analysis activities as well as linguistic and cultural expertise to carry out service delivery effectively.

Strengths

Quality Health Care

- There is a strong desire among health care providers to provide the best care they can to the public.
- FQHCs do a great job of outreach to vulnerable populations and linking them to care.
- The first clinic in Mississippi specially designed to meet the special healthcare needs of the LGBT community recently opened.

Weaknesses

Coordination and Alignment

- Siloing of mental health and primary health care in the state results in disjointed and inadequate care for individuals with mental illnesses.

Vulnerable Populations

- Outreach and access to appropriate services for vulnerable populations is very low, particularly for individuals with mental illnesses, LGBT, and non-English speaking populations.
- Unmet demand for language interpreters and culturally sensitive health care
- While technical assistance services are being offered to providers on how to adequately serve vulnerable populations, providers face barriers in accessing these services because they cannot leave their clinics to attend training.
- Because the state has experienced so many disasters, communities exist in a disaster mindset, in which people have to focus efforts on immediate needs rather than investing in long-term improvements.
- Vulnerable residents living in rural communities are particularly underserved by a lack of services and providers.
- There has been a lack of action to address the social determinants of health.

Funding

- The system is not adequately funded to properly provide health care services to meet the level of need in the state.

- The system is too reliant on grant funding, so the system does a great job providing services for two or three years during a grant period, but cannot create sustainable services due to the short-term nature of grant funding.
- There are severe gaps in mental health care, and funding streams are incapable of meeting the rising level of need.
- State agencies lack adequate funding to be competitive in attracting and retaining staff with appropriate expertise.
- There is a high rate of uninsured individuals (about 25% of non-elderly adults are uninsured) in the state, decreasing access to care, (especially ongoing chronic disease care).

State Health Insurance Exchange

- Political barriers have prevented the development of a state individual health insurance exchange.

Short Term Opportunities for Improvement

Community Engagement

- Increase outreach and engagement to vulnerable populations to involve them in planning and program development efforts to ensure that these efforts are effective.
- Improve community participation in local community health assessments.

Healthcare Quality

- Ensure that we give providers opportunities to leave work to get the training they need to provide the best health care possible.

Health Literacy

- Begin healthcare literacy efforts among high school age youth.
- Increase education efforts to newly covered populations on how to use their insurance.
- Increase usage of peer to peer learning models to provide health education and support navigation of the health care system among vulnerable populations.

Sustainability Planning

- When new grants are secured, convene partners to engage in sustainability planning to ensure that work is carried on after funding ends.

Coordination and Alignment

- Create a resource database to document services throughout the state.

Long Term Opportunities for Improvement

Barriers to Care

- Develop capacity in telehealth services to increase access to care for rural populations.
- Share assessment data to inform strategies to address barriers to care.

Coordination and Alignment

- Break down silos and share resources to collectively improve performance across the system.
- Integrate mental health services into primary care to meet the needs of Mississippi residents.

Health Inequities

- Address health disparities through policy, systems, and environmental change strategies to tackle the root causes of poor health.

Workforce

- Ensure that providers have the training and tools to appropriately provide care for people living in poverty.
- Develop a network of community health workers that can help address gaps in underserved communities.
- Invest in workforce capacity to help vulnerable populations navigate the health care system so they can access services.
- Invest in growing IT expertise among the public health workforce.
- Build system capacity to provide culturally and linguistically appropriate care to diverse and vulnerable populations.

Advancing Best Practices

- Use best practice models to address the needs of vulnerable populations and standardize performance system-wide.

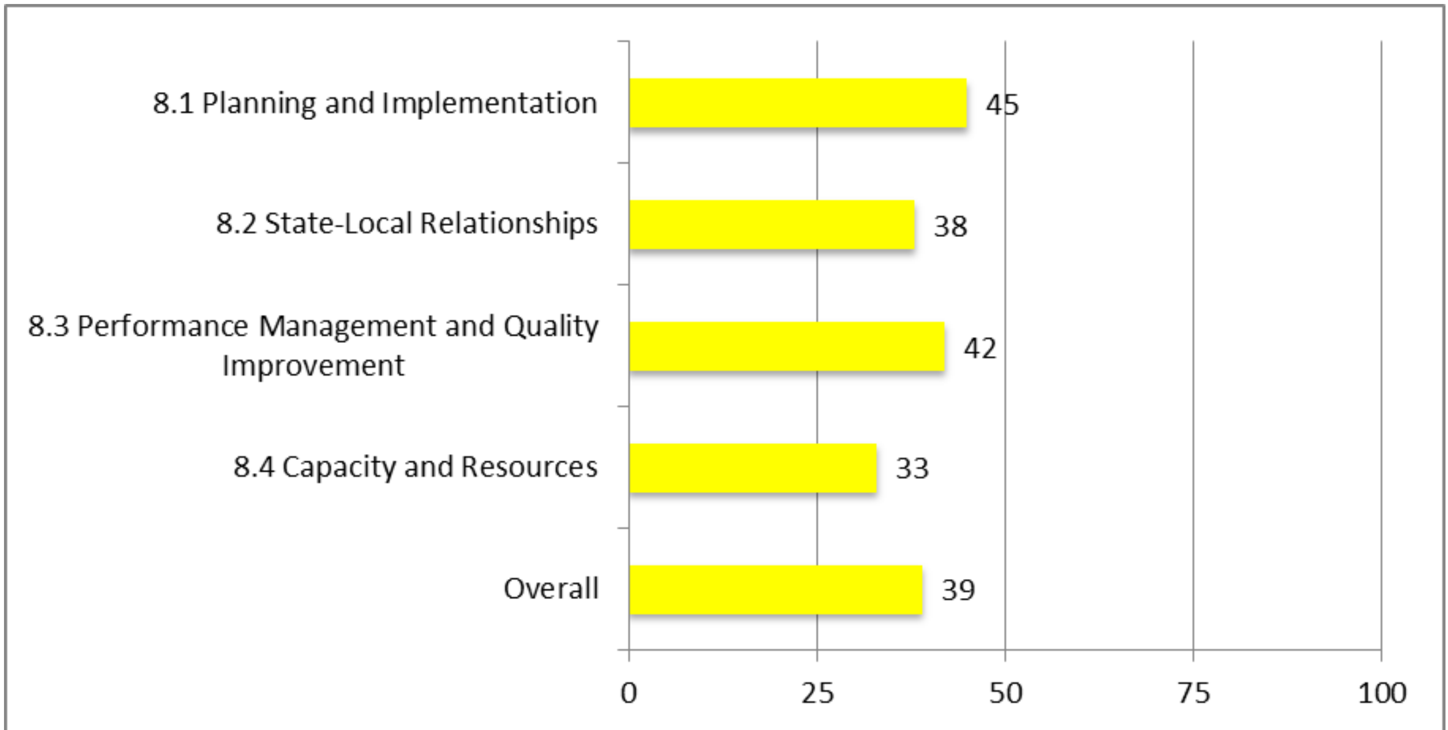
Essential Service 8: Assure a Competent Public Health and Personal Healthcare Workforce

Participant dialogue to assess performance for Essential Public Health Service 8 explored the following key questions:

- **What's going on in our state?**
- **Is our workforce informed and up to date?**

Ensuring a competent public and personal health care workforce encompasses the following:

- Education, training, development, and assessment of health professionals—including partners, volunteers, and community health workers—to meet statewide needs for public and personal health services
- Efficient processes for credentialing technical and professional health personnel
- Adoption of continuous quality improvement and life-long learning programs
- Partnerships among professional workforce development programs to assure relevant learning experiences for all participants
- Continuing education in management, cultural competence, and leadership development programs



Overall performance for Essential Service 8 was scored as moderate, and all model standards scored in the moderate range. Performance for Essential Service 8 was ranked seventh out of the 10 Essential Services.

Essential Service 8 Summary

Planning and Implementation

In dialogue around the extent to which the public health system has developed a statewide workforce plan establishing strategies and actions to train, recruit, and maintain a competent public health workforce, participants noted that while some individual organizations are conducting workforce assessments to identify gaps and to determine future training priorities, there is no centralized collective plan to develop and sustain the public health workforce in Mississippi. Representatives of organizations advancing the personal healthcare workforce, such as the Mississippi Hospital Association and the Office of Nursing Workforce, described good assessment processes in place that drive their sector-specific workforce development strategies, but participants reported very little corresponding activity for the population-based health workforce.

Participants were aware of a few isolated efforts to develop the population-based workforce, but perceived that activity has been very disconnected due to disjointed funding and competing priorities. Participants noted that university partners often play a central role in driving workforce development planning, and the lack of an accredited school of public health in the state contributes to the lack of workforce planning for population-based public health. In the absence of an accredited school of public health, participants suggested that the Mississippi State Department of Health would be well-suited to coordinate the development of a workforce development plan, though they cautioned that the many silos across the health department would create barriers to coordinating efforts for an integrative plan.

Participants agreed that both the population-based and personal healthcare workforce would benefit from a formalized statewide workforce development plan to coordinate resources and efforts across the system to strategically address gaps and needs in the public health workforce. The public health system can benefit from the progress and lessons learned from the personal healthcare sectors' workforce development efforts to inform the creation of a system-wide workforce plan.

One component that will be critical to include in the development of a system-wide public health workforce plan beyond assuring adequate recruitment and appropriate technical and professional competencies is the inclusion of strategies to ensure retention of a highly skilled workforce. Participants reported that funding shortages, particularly among state agencies, make it difficult to attract and retain qualified workers because salaries are low and there is a lack of career advancement opportunities.

State-Local Relationships

In dialogue around the system's provision of support and technical assistance for local public health system workforce assessment and development, participants reported minimal support for local workforce assessment and development, as there are few resources at the state level to dedicate to building local capacity. Participants reported that the system is doing a better job of providing training to build and maintain public health workforce capacity and skills, and identified several partners that offer training opportunities across the state, including the Mississippi Hospital Association, the Mississippi State Department of Health, and universities. They cautioned, however, that training opportunities are less and less frequent due to increasing budget shortages. Other barriers preventing staff from taking advantage of the training opportunities that do still exist include inadequate marketing to inform staff and insufficient staffing levels that make it hard for an employee to miss work to attend training.

Performance Management and Quality Improvement

Discussions around system performance in reviewing and evaluating workforce development activity indicated that this activity takes place on an informal basis, but there is no collective systematic review of performance in this area. This underscores the need for the development of a formal system-level workforce development plan, which could include an evaluation component to ensure that this activity takes place. Participants reported that discussions have taken place among partners across the system regarding inadequate numbers of students graduating in public health, nursing, and medicine to meet the needs of the state, which again emphasizes the importance of convening partners together to create a shared plan to address these gaps.

One example where review of workforce development activities informed a subsequent change in the public health workforce development strategy is in the area of nursing. A representative from the nursing workforce reported that reviews of workforce development strategies revealed that nursing schools were overemphasizing acute care and were not adequately preparing students to deliver population-based health, so curriculum changes were made to address this gap in training.

Capacity and Resources

Participants also discussed allocation of resources and coordination of efforts, alignment of plans, and investment in resources to make sure the workforce is competent and up to date. The greatest gap is insufficient and diminishing financial resources, which makes it challenging to support workforce development efforts. Each agency allocates what it can, but resources are substantially lower than the level of need, and budget cuts across the system continue to decrease capacity to address workforce development, even as the need increases.

Participants reported very little alignment and coordination of efforts to conduct workforce development activities, stating that collaboration was more frequent when resources were greater. While pooling collective resources and efforts to develop a system-level workforce development plan is more efficient than siloed activity, participants cautioned that many organizations are too financially strained to send staff to meetings that would bring system partners together to create a shared plan. Improving capacity to address the growing need for systematic, coordinated action to develop the public health workforce will require additional allocation of financial resources to be successful.

There is no school of public health in the state.

Strengths

Workforce Development

- Many individual partner agencies have workforce development plans, particularly in the personal healthcare sector.
- There are good training opportunities for the licensed personal health care workforce.

Weaknesses

Coordination and Alignment

- While individual agencies have workforce development plans, there is a lack of coordinated effort across the system.

Investment in the Public Health Workforce

- The state lacks training for population-based health workforce, and there is no school of public health in Mississippi.
- There is a lack of funding for salaries and career advancement makes it hard to attract and retain public health professionals with appropriate expertise, particularly in state agencies.
- As need for workforce development activities rises, budgets to fund this work are diminishing.
- Many public health partner organizations lack career ladders, making it difficult to retain employees.

Short Term Opportunities for Improvement

Workforce Assessment and Training

- Use the new core public health competencies developed by the Council on Linkages to assess what is needed to develop Mississippi's public health workforce, and develop a training curriculum based on these competencies. Reference core competencies when advertising training opportunities.
- Create a crosswalk between public health core competencies and core competencies for other professionals to identify and leverage training opportunities in other sectors.
- Conduct a population-based health workforce assessment to inform the creation of a workforce development plan.
- Increase training opportunities for the population-based health workforce.
- Create a certification and training process for community health workers.

Long Term Opportunities for Improvement

Workforce Development

- Work with partners to develop a plan for the creation of a school of public health.
- Create a statewide public health workforce development plan.
- Prepare the workforce to better serve vulnerable populations, including individuals with disabilities and foster children.
- Establish an accredited school of public health in Mississippi to drive and coordinate public health workforce development.
- Work with the community college system to develop a training program on water system management.

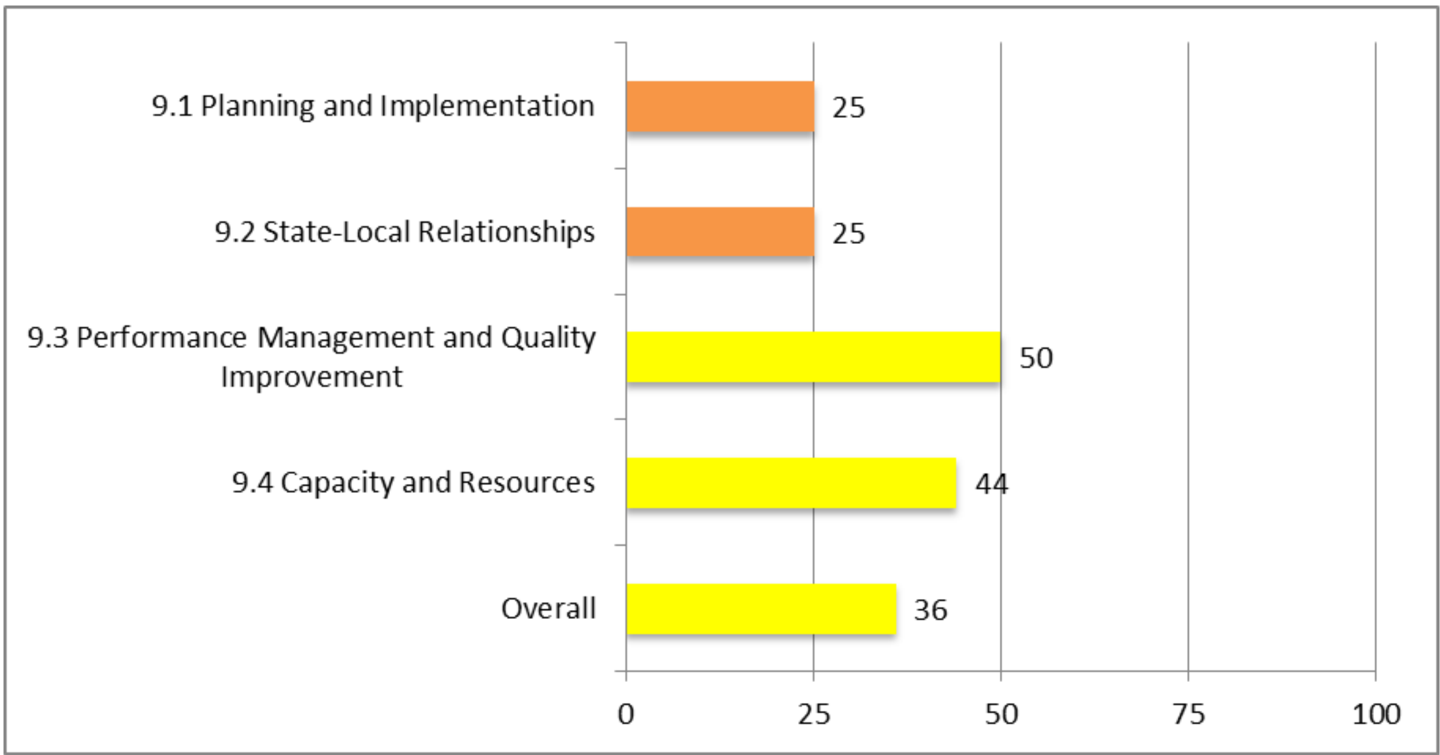
Essential Service 9:
Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Health Services

Participant dialogue to assess performance for Essential Public Health Service 9 explored the following key questions:

- **What's going on in our state?**
- **How are our services performing?**

Evaluating effectiveness, accessibility, and quality of personal and population-based health services encompasses the following:

- Evaluation and critical review of health programs, services, and systems to determine program effectiveness and to provide information necessary for allocating resources and reshaping programs for improved efficiency, effectiveness, and quality
- Assessment of and quality improvement in the state public health system's performance and capacity



Overall performance for Essential Service 9 was scored as moderate. Planning and Implementation and State-Local Relationships received high minimal scores and Performance Management and Quality Improvement and Capacity and Resources received high moderate scores. Performance for Essential Service 9 was ranked eighth out of the 10 Essential Services.

Essential Service 9 Summary

Planning and Implementation

In dialogue around system performance in evaluation of public health services, participants reported that individual organizations throughout the public health system are beginning to evaluate effectiveness of their services more and more, noting that funders are increasingly requiring grantees to evaluate their programs to demonstrate the impact of their activities.

Evaluation is frequently done within the realm of personal health care services, but more resources must be allocated to evaluation of population-based health services. Participants identified tobacco cessation efforts as the only example they could think of doing a great job of evaluating a population-based service because they are sufficiently funded to be able to carry out evaluations to demonstrate their impact.

While many individual organizations are evaluating their services, partners are not aware of what other organizations are doing, highlighting the need for greater communication and sharing of evaluation results to improve collective system performance improvement. Participants acknowledged that there is an understandable reluctance among organizations to share unflattering evaluation results with partners. They called for a culture shift toward increasing system-wide transparency, in which partners across the system can collectively commit to sharing evaluation results for joint learning. This also requires a shift in our mindset toward treating areas of weakness as opportunities for growth instead of perceiving them as failures. Participants acknowledged that there are barriers to achieving this shift toward transparency, noting that it may be politically risky to share information about areas where we are performing poorly. Again, this underscores the need for a system-wide culture shift grounded in the goal of improving our performance as a collective public health system.

One area where work is in its very beginning stages is evaluation of the performance and collective capacity of the state public health system. Participants reported that the State Public Health System Assessment is one of the first attempts they are aware of to bring state partners together to discuss performance as a public health system. The first step to increasing activity in this area is for partners to break out of organizational silos and start thinking of themselves as players within a larger system that is collectively working toward the common goal of improving the health of the public.

One strength highlighted within this essential service is that organizations across the state public health system do well in seeking and securing certification, accreditation, licensure, and other designations of high-performing organizations. Participants cited many examples of entities that routinely engage in this activity to assure that high quality standards are maintained.

State-Local Relationships

Participants identified that an area where growth is needed is in increasing evaluation competencies as a system. Greater resources should be allocated to provision of technical assistance to local public health systems in their evaluation activities. Many organizations currently lack evaluation expertise, which they will need to develop to stay competitive for grants as funders are increasingly requiring reporting of evaluation data to demonstrate program impact.

Discussions also revealed that while staff from the Mississippi State Department of Health collect a great deal of evaluation data from partners across the system, these partners lack understanding of what this data is used

for and how to access it. Health Department staff in charge of collecting and managing this data were not aware of the challenges partners face in accessing data, and discussed the need for improved dissemination of the information and training on how to navigate the Health Department's website and data systems. Building system capacity to navigate this data will inform system performance and will allow organizations to be more data-driven in program planning.

Performance Management and Quality Improvement

Dialogue around system performance management and quality improvement revealed that while individual organizations evaluate and measure their progress and implement plans to address areas where they are falling short, these activities are very siloed. Partners were not aware of each other's evaluation activities, and as previously discussed, results of these evaluations are not shared to inform collective improvement.

Participants highlighted several good examples where system partners are using shared measures to evaluate collective performance to advance system improvement, including the state's Community Health Centers and Systems of Care. The public health system is currently working toward the development of statewide priorities and shared measures to monitor collective progress in addressing these priorities through the State Health Improvement Plan (SHIP) process.

Capacity and Resources

In discussions of the system's capacity and resources for evaluating public health services, participants reported that there are very few financial resources available for evaluation, which limits activity in this area. However, as funders are building evaluation requirements into grants, partner organizations must increase their capacity to measure and assess the impact of their funding and to create quality improvement plans when measures fall short. State organizations can increase local public health system capacity through provision of training and technical assistance, but participants cautioned that few individuals in the public health workforce are skilled in both analysis of evaluation data and translation of this data to individuals without this expertise.

Strengths

Best Practice Examples

- The state's tobacco prevention programs have robust evaluation processes.
- Systems of Care and Community Health Centers offer best practice examples for creating shared evaluation measures.

Weaknesses

Coordination and Alignment

- Partners individually collect a lot of evaluation data, but do not disseminate and share data to leverage for collective, system-wide quality improvement.

Technical Assistance

- The public health system is in need of additional technical assistance to build capacity in evaluation and quality improvement.

Funding

- There is very little funding available for evaluation activities.

Short Term Opportunities for Improvement

Health Literacy

- The system should work toward disseminating data in simple, lay terms so the average Mississippi citizen can read, analyze, and understand it.

Coordination and Alignment

- Develop shared measures to monitor success across the health system through the State Health Improvement Plan (SHIP) process.

Vulnerable Populations

- When designing evaluation plans, ensure special consideration is being paid to programmatic impact on vulnerable populations like seniors and children.

Long Term Opportunities for Improvement

Coordination and Alignment

- Enhance collaboration and engagement among partners to increase evaluation and quality improvement efforts system-wide.
- Create a statewide evaluation tool that all public health system partners can measure themselves against.
- Because funders are increasingly requiring programs to demonstrate their impact, build system-wide evaluation capacity so organizations can be competitive for grants.
- Build on momentum created through the State Public Health System Assessment to create a process for evaluation of systems capacity.
- Foster a culture of transparency in sharing evaluation results to drive system-wide quality improvement.

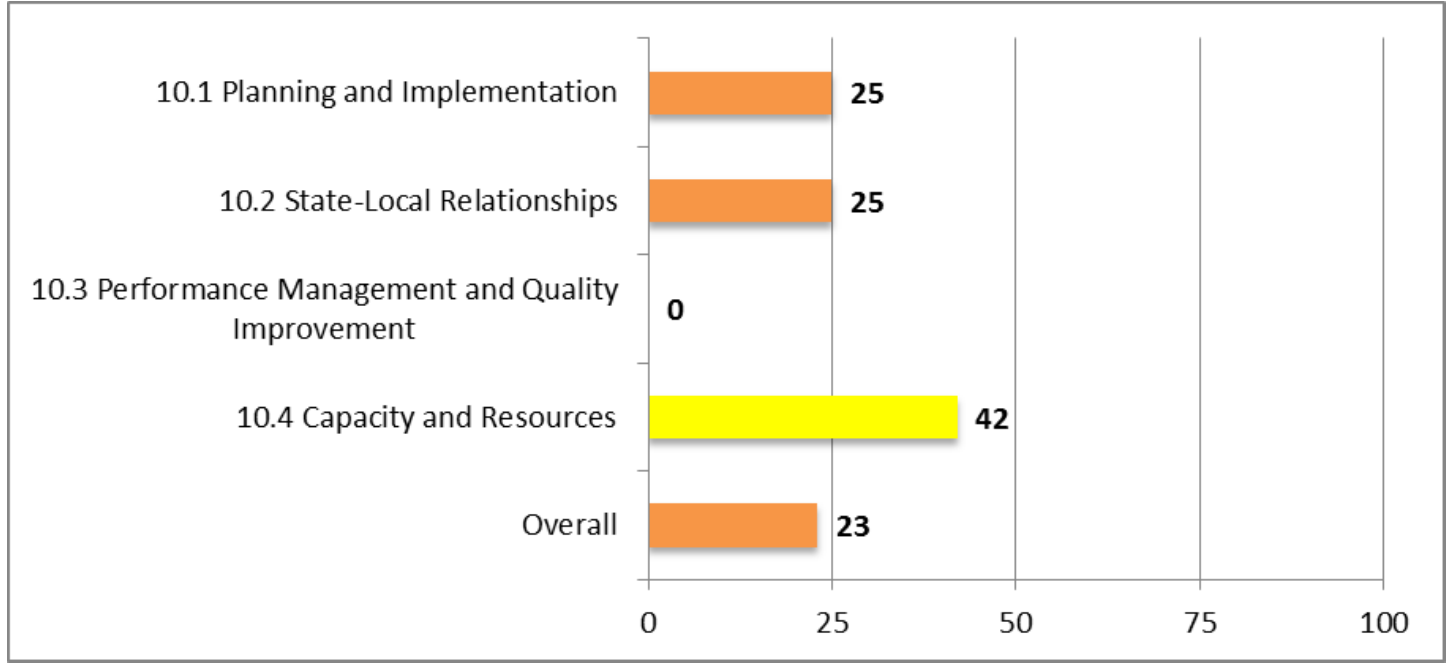
Essential Service 10:
Research for New Insights and Innovative Solutions to Health Problems

Participant dialogue to assess performance for Essential Public Health Service 10 explored the following key questions:

- **What's going on in our state?**
- **Do we participate in research activities?**

Researching for new insights and innovative solutions to health problems encompasses the following:

- A full continuum of research ranging from field-based efforts to foster improvements in public health practice to formal scientific research
- Linkage with research institutions and other institutions of higher learning to identify and apply innovative solutions and cutting-edge research to improve public health performance
- Internal capacity to mount timely epidemiologic and economic analyses and conduct needed health services research



Overall performance for Essential Service 10 was scored as minimal. Planning and Implementation and State-Local Relationships received high minimal scores, and Capacity and Resources scored in the moderate range. Performance Management and Quality Improvement was the only model standard of the assessment to receive a score of no activity. Performance for Essential Service 10 was ranked the lowest out of the 10 Essential Services.

Essential Service 10 Summary

Planning and Implementation

In discussing the extent to which the state public health system engages in research, participants reported that state universities are conducting research to contribute to the health science evidence base, particularly among doctoral students in nursing. They perceived that universities have some experience in publishing research, but the big gap where further activity is needed is in filtering research results down to public health practitioners by translating and disseminating research findings. A university representative stated that academic institutions in the state are increasingly recognizing the importance of shifting from bench research to translational research to increase applicability to the practice field.

Another gap participants identified within this essential service is that the state lacks a coordinated public health research agenda, due in part to the absence of an accredited school of public health that can establish such an agenda. Instead, research activities in the state are driven by availability of funding rather than by the level of priority or applicability to the Mississippi public health system. Participants suggested that partners should come together to collectively prioritize important research topics for the public health system and then seek funding to study them. This would facilitate the expansion of the evidence base for the issues that have the greatest health impact in Mississippi, like chronic diseases and drug abuse. Participants suggested that the establishment of an accredited school of public health in the state is an important opportunity, which they believe would drive the creation of a public health research agenda for Mississippi, as well as disseminate health research findings and help to translate these findings for application in public health practice.

State-Local Relationships

In dialogue around the extent to which the system provides technical assistance to local public health systems to conduct and participate in research, participants perceived that local public health systems are so stretched for resources that they do not have the capacity for research and innovation as they have to concentrate all their efforts on delivering basic public health services.

While local public health systems likely lack the capacity to conduct their own research, participants reported growing interest in community-based participatory research. Traditionally when researchers at academic institutions conduct community-level research, they come into the community to study it without any involvement from community members in the research process. Community-based participatory research is a collaborative methodology that engages community members as equal partners in driving the research process. While participants were not aware of any community based participatory research in the state thus far, they reported that this would be a good opportunity to build local capacity for engaging in research and would give local communities a voice in determining research priorities that matter to them.

Participants reported that system partners assist local public health systems in their use of research findings by helping in the interpretation, dissemination and application of research studies and findings to support the adoption of evidence-based public health practice. However, this only takes place at a minimal level and these efforts should be increased. One way that the Mississippi State Department of Health is working to build local capacity in this area is through offering a course to community based organizations to improve their knowledge of research and evidence based public health so they can integrate research findings and evidence-based practices to their work. This course is currently being offered in Jackson, but MSDH has plans to offer this training across the state if this pilot training is successful.

Performance Management and Quality Improvement

Participants were not aware of any collective activity taking place among state public health system partner organizations to review research activities to continually improve performance to ensure innovation and high quality research. Participants said that this may be happening on a very small scale among individual universities and research institutions, but they were unaware of any examples of partner organizations working together to review research activities in the state. This is an area for growth moving forward.

Capacity and Resources

In dialogue around research capacity and resources throughout the state, participants agreed that minimal financial resources are available to conduct research relevant to health improvement in the state, and reported very little coordinated alignment of efforts to conduct research. However, capacity and resources were assessed as the highest performing component of Essential Service 10 because participants reported that the public health system has the professional expertise to carry out public health research, including skills in public health systems research, epidemiology, biostatistics, applying research findings to practice, and writing research proposals to pursue findings. They noted the caveat that the missing element in the public health research workforce is a sufficient cadre of researchers, particularly epidemiologists and biostatisticians. Essentially, although the existing research workforce is skilled, it's size is too small to reach the desired level of research activity.

Strengths

Advancing Best Practices and Evidence-Based Health

- Universities are conducting research and are publishing findings to contribute to the health science evidence base.
- System partners try to disseminate research findings to the practice field to increase the use of evidence based practices.

Workforce Capacity

- The public health system has staff with the relevant subject matter expertise to conduct public health research.

Weaknesses

Funding

- The state public health system does not have adequate funding to conduct research.
- Grant restrictions reduce the system's capacity to conduct research.

Coordination and Alignment

- Mississippi currently lacks a school of public health and a statewide public health research agenda.

Short Term Opportunities for Improvement

Workforce Capacity

- Work to increase public health workforce in epidemiology and biostatistics.
- Improve capacity to conduct community-based participatory research at the local level.

Long Term Opportunities for Improvement

Coordination and Alignment

- Create a coordinated research agenda for the state.
- Establish an accredited school of public health that could create an infrastructure to connect the dots of siloed research efforts across the state and maintain a research agenda.

Conclusion: Key Findings from the Mississippi State Public Health System Assessment

Mississippi's first State Public Health System Assessment revealed a number of key areas of excellence for the public health system, including robust health hazard surveillance, national recognition for excellence in emergency preparedness, and strong relationships among system partners. Areas for improvement identified include strengthening funding and public support for public health, investing in workforce development, advancing chronic disease prevention and fostering a culture of health across the state, and increasing strategic alignment and coordination of public health efforts throughout the system.

Assessment participants described a strong health surveillance and monitoring system, particularly for emergent health threats like infectious diseases. The system does an excellent job of responding when new threats emerge, and has robust communication systems in place to inform health providers and the public about disease prevention and mitigation. However, while the system excels in surveillance of acute conditions, participants identified the need to strengthen the system's capacity in surveillance and response to long-term problems like chronic disease and infant mortality.

Mississippi leads the nation in emergency preparedness and rapid response expertise. The public health system has robust emergency plans in place at the state and local levels, and can quickly target areas where need is greatest and mobilize to deliver assistance and resources efficiently and effectively. Participants identified that strong partnerships among multiple stakeholders working in alignment with a very clear plan have been key to the system's success in this area. While participants reported that the Mississippi Public Health System excels in acute crises, they cautioned that the system is not as effective in mobilizing and responding to chronic problems that have reached a crisis level, like obesity. Participants recommended that the system should look to its best practice examples in emergency planning and response to inform strategies to address long-term crises, including developing coordinated strategic plans to align health improvement activities.

Chronic disease emerged as a key area of concern for assessment participants. Mississippi has some of the poorest rates of chronic disease risk factors and health outcomes in the country. Participants identified that social determinants of health play an important role in the state's high obesity and chronic disease rates, and reported that while the public health system's response has mostly entailed addressing low-hanging fruit like health education, achieving substantial and sustained improvement will require environmental and policy change strategies. Participants emphasized the importance of fostering a culture of health in Mississippi that focuses on building communities that facilitate good health.

A recurring theme that emerged throughout all the discussions in the assessment was that low funding, lack of public support for public health, and workforce shortages limit the capacity of the public health system in achieving health improvements for the people of Mississippi. Participants reported that the system has many assets in place, including strong partnerships and documented successes in tobacco cessation, emergency preparedness and response, and childhood obesity prevention. However, the public health system will require greater funding and support to function at its highest potential capacity and effectively address the state's most pressing health crises.

Appendices

Appendix 1. List of Participating Organizations

Constituency Represented	Organization
Businesses	Dependable Source Corporation Mississippi Restaurant Association
Coalitions	Mississippi Business Group on Health Mississippi Coalition for Vietnamese-American Fisher Folks and Families
Colleges and Universities	Jackson State University Mississippi Institutes of Higher Learning University of Alabama at Birmingham School of Public Health University of Southern Mississippi William Care University College of Osteopathic Medicine
Community-Based Organizations	Catholic Charities Jackson Innovative Behavioral Services, Inc. Jackson Roadmap to Health Equity Project My Brother's Keeper United Way of the Capital Area
Hospitals/Health Systems	Jackson-Hinds Comprehensive Health Center Mississippi Hospital Association University of Mississippi Medical Center
Insurance Providers	Blue Cross Blue Shield of Mississippi
State Health Department	Mississippi State Department of Health
Federal Government	Housing and Urban Development
State Government	Mississippi Board of Nursing Mississippi Department of Agriculture Mississippi Department of Environmental Quality Mississippi Department of Human Services Mississippi Department of Mental Health Mississippi Department of Rehabilitation Services Mississippi Division of Medicaid

State Government	Mississippi Joint Legislative Committee on Performance Evaluation and Expenditure Review Mississippi State Board of Health
Local Government	City of Jackson Madison County Citizens Services Agency
Tribal Government	Choctaw Health Center
Non-profit & Advocacy	American Cancer Society Cancer Action Network American Heart Association American Lung Association Arts Klassical, Inc. Bower Foundation Center for Mississippi Health Policy Central Mississippi Area Health Education Center Common Health Action Eliza Pillars Registered Nurses of Mississippi Families as Allies Foundation for the Mid South I-HELP Inc. Information & Quality Healthcare March of Dimes Mississippi Center for Justice Mississippi Farm Bureau Federation Mississippi Medical and Surgical Association Mississippi Migrant Education Service center Mississippi Office of Nursing Workforce Mississippi Primary Healthcare Association Mississippi Public Health Association Mississippi Public Health Institute Mississippi Rural Health Association Mississippi Rural Water Association Mississippi Society for Disabilities National Coalition of 100 Black Women-Central Mississippi Chapter NMHS Unlimited/The Good Life

Appendix 2: Essential Service Scores

EPHS 1. Monitor Health Status To Identify Community Health Problems

1.1 Planning and Implementation

The partner organizations in the SPHS work collaboratively to measure, analyze, and communicate about the health status of the state's population. The state's health status is monitored through the collection, analysis, reporting, and use of data describing critical indicators of health, illness, and health resources. Data on the health of the state's population includes:

- Vital statistics, including births and deaths.
- Use of personal healthcare services.
- Environmental and socioeconomic conditions that impact health.
- Infectious diseases.
- Chronic diseases.
- Injuries.
- Behavioral risk factors.
- Mental health.
- Substance abuse.

These data are analyzed, disseminated, and widely used by systems partners to better understand health needs, focus program and service activities, and assess progress in achieving desired health outcomes. Monitoring health is a collaborative effort involving many state public health partners and local public health systems, including physicians, hospitals, and other healthcare facilities, state and local governmental public health agencies, and other reporters and managers of health information.

The effective communication of health data and information is a primary goal of all systems partners that participate in this effort to generate new knowledge about health in the state. End-users of health data utilize this knowledge about the state's health results in more effective improvement plans, resource development, and services to meet population health needs.

To accomplish these results, the partner organizations in the SPHS:

- Develop and maintain programs that collect health-related data to measure the state's health status.
- Produce useful data and information products that are accessible to a variety of data users, including a state health need assessment (comprehensive, every few years) and state health profiles (shorter, more focused, more frequent) that routinely report on the prevailing health of the people of the state.
- Operate a data reporting system for receiving and transmitting information regarding reportable diseases and other potential public health threats.

1.1.1 Maintenance of data collections and monitoring programs 75
1.1.2 Accessibility of health data 50
1.1.3 Collective work to maintain a data reporting system 100

1.2 State-Local Relationships

The partner organizations in the SPHS work with local public health systems to provide assistance, capacity building, and resources for local efforts to monitor health status and identify health problems. Many partner organizations within the SPHS support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members or counterparts, who are themselves partners in local public health systems. Results of good state-local relationships are increased cooperation locally to collect and use health data for planning and improved service delivery.

To accomplish these results, the partner organizations in the SPHS:

- Assist in the interpretation, use, and dissemination of local health data.
- Provide a standard set of health-related data to local public health systems and assist them in accessing, interpreting, and applying these data in policy, planning, and program and service development activities.
- Assist in the development of information systems needed to monitor health status at the local level.

1.2.1 Assistance to local public health systems in interpretation, use, and dissemination of data 50
1.2.2 Collaboration to provide local public health systems with data 50
1.2.3 Assistance to local public health systems in development of information systems 75

1.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in monitoring health status. SPHS partner organizations actively use the information from these reviews to continuously improve the quality of monitoring efforts. System-wide collaborative approaches for review, evaluation, and performance management are essential to improve health status monitoring. In their efforts to measure and improve performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance. Active improvement processes based on rigorous reviews of SPHS performance produce more efficient and user-friendly methods of data collection and more effective and relevant data products.

To accomplish these results, the partner organizations in the SPHS:

- Review the effectiveness of their efforts to monitor health status to determine the relevance of existing health data and its effectiveness in meeting user needs.
- Manage the overall performance of health status monitoring activities in the state for the purpose of quality improvement.

1.3.1 Review of effectiveness of efforts to monitor health status 25
1.3.2 Active management and improvement of collective performance 25

1.4 Capacity and Resources

SPHS partner organizations effectively invest in and utilize human, information, technology, organizational, and financial resources to monitor health status and to identify health problems in the state. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts in health status monitoring. The state public health agency enhances the capacity of the SPHS by its leadership in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments by all SPHS partner organizations are essential to support a well-functioning system capable of carrying out and improving health status monitoring activities. To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources to monitoring health status.
- Align organizational relationships to focus statewide assets on monitoring health status.
- Use a workforce skilled in collecting, analyzing, disseminating, and communicating health status data and maintaining data management systems.

1.4.1 Commitment of financial resources to health status monitoring efforts 50

1.4.2 Alignment and coordination of efforts to monitor health status 50

1.4.3 Collective professional expertise to carry out health status monitoring activities 25

EPHS 2. Diagnose and Investigate Health Problems and Health Hazards

2.1 Planning and Implementation

The partner organizations in the SPHS work collaboratively to identify and respond to public health threats, including infectious disease outbreaks, chronic disease prevalence, the incidence of serious injuries, environmental contaminations, the occurrence of natural disasters, the risk of exposure to chemical and biological hazards, and other threats. The collection of data through surveillance, the examination of threats and hazards in a laboratory setting, and the analysis of disease patterns by epidemiologists together form a core diagnostic function in the state public health system. Mounting an appropriate response to disease outbreaks, unacceptable chronic disease prevalence, or a bioterrorism threat requires solid and credible information and analysis to understand the scope and causes of the problem.

Active participation of many SPHS partner organizations is needed for effective diagnosis and investigation of health problems. In addition to the leadership of the state public health agency, the contributions of other entities are essential, including hospitals, physicians, nurses, emergency management agencies, public and private clinical and environmental laboratories, local health departments, first responders, epidemiologists, and experts in chronic diseases, infectious diseases, injuries, and environmental toxicology.

The maintenance of a well-functioning diagnosis and investigation system within the SPHS produces critically important outputs. Credible information gathering and analysis of health problems increases the understanding of the public and the decision makers about appropriate responses. SPHS partner organization responses to health problems can be better targeted to affected populations and designed to address the causes of the problem. The evidence base for collective public health actions begins with a solid diagnosis and investigation function within the SPHS.

To accomplish these results, the partner organizations in the SPHS:

- Operate a broad scope of surveillance and epidemiology services to identify and analyze health problems and threats to the health of the state's population.
- Establish and maintain the capability to initiate enhanced surveillance in the event of an emergency
- Organize public and private laboratories in the state into an effectively functioning laboratory system.
- Use public and private laboratories that have the capacity to analyze clinical and environmental specimens in the event of suspected exposures and disease outbreaks.
- Respond to public health problems and hazards.

2.1.1 Surveillance and epidemiology activities that identify and analyze health problems and threats......100
2.1.2 Capability to rapidly initiate enhance surveillance when needed......100
2.1.3 Organization of a well-functioning laboratory system......100
2.1.4 In-state laboratory capacity to analyze clinical and environmental specimens......75
2.1.5 Coordinated response to identified public health threats......100

2.2 State-Local Relationships

The partner organizations in the SPHS work with local public health systems to provide assistance, capacity building, and resources for local efforts to identify, analyze, and respond to public health problems and threats. Many organizations within the SPHS support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members or counterparts, who are themselves partners in local public health systems. Results of good state-local relationships are increased cooperation in the collection and use of disease-specific data. Organizations in the local public health system are more prepared to use data and evidence in the design of program interventions to mitigate health problems.

To accomplish these results, the partner organizations in the SPHS:

- Provide information and guidance about possible public health threats and appropriate responses to these threats by local public health systems.
- Assist local public health systems in the interpretation of epidemiologic analyses and laboratory findings.

2.2.1 Assistance to local public health systems in interpretation of epidemiologic and laboratory findings 75
2.2.2 Guidance to local public health system on public health problems and threats......75

2.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in diagnosing and investigating health problems. SPHS partner organizations actively use the information from these reviews to continuously improve the quality and responsiveness of their efforts. System-wide collaborative approaches for review, evaluation, and performance management are essential to improve diagnosis and investigation services.

In their efforts to measure and improve performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance. Active improvement processes based on rigorous reviews of SPHS performance produce more efficient, relevant, and timely analytic products. These products, in turn, enable more effective SPHS investigation and responses to improve population health.

To accomplish these results, the partner organizations in the SPHS:

- Review the effectiveness of their state surveillance and investigation procedures, using published guidelines, including CDC's Updated Guidelines for Evaluating Public Health Surveillance Systems and CDC's measures and benchmarks for emergency preparedness.
- Manage the overall performance of diagnosis and investigation activities in the state for the purpose of quality improvement.

2.3.1 Periodic review of effectiveness of state surveillance and investigation system 50
2.3.2 Active management and improvement of collective performance 50

2.4 Capacity and Resources

SPHS partner organizations effectively invest in and utilize human, information, technology, organizational, and financial resources to diagnose and investigate health problems and hazards that affect the state's population. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts in diagnosing and investigating health problems. The state public health agency enhances the capacity of the SPHS by its leadership in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments in diagnosis and investigation services by all SPHS partner organizations are essential for a well-functioning system capable of understanding health problems, responding to them quickly and appropriately, and preventing them in the future.

To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources for diagnosing and investigating health problems and hazards.
- Align organizational relationships to focus statewide assets on diagnosis and investigation of health problems.
- Use a workforce skilled in epidemiology and laboratory science to identify and analyze public health problems and hazards and to conduct investigations of adverse public health events.

2.4.1 Commitment of financial resources to support diagnosis and investigation 50
2.4.2 Alignment and coordination of efforts to diagnose and investigation health hazards and health problems 50
2.4.3 Collective professional expertise to identify and analyze public health threats and hazards 25

EPHS 3. Monitor Health Status To Identify Community Health Problems

3.1 Planning and Implementation

The partner organizations in the SPHS actively create, communicate, and deliver health information and preventive health programs and services using customer-centered and science-based strategies to protect and promote the health of diverse populations.

Partner organizations support SPHS health improvement objectives and respond to public health issues with health communication and health education and promotion interventions that are based on the best available evidence of effectiveness in helping people make healthy choices throughout their lives. The National Prevention Strategy is used by partner organizations as a blueprint for a comprehensive approach to prevention within the state. SPHS partner organizations are committed to working collaboratively to prevent chronic disease in the state's population now and, by doing so, reduce the pain, suffering, and costs associated with the treatment of chronic diseases later. SPHS partner organization activities recognize the social determinants of health and use prevention programs to focus on reducing and eliminating health disparities in at-risk populations.

Health education is extensively used to convey information to individuals and groups about steps that they can take to improve their health (e.g., information to motivate smokers to enter smoking cessation programs). Health promotion is conducted by SPHS partner organizations as a concerted effort to influence political, regulatory, educational, and civic processes to create living conditions conducive to better health (e.g., an approach that combines clean air laws, smoke-free workplaces, enforcement of laws prohibiting tobacco sales to minors, smoking cessation programs, etc.).

The state's population understands and uses timely health information to protect and promote their personal health and the health of their families and communities. Health communications are culturally and linguistically appropriate and are delivered through multiple media channels to enhance their effectiveness and reach into high risk populations.

Many partner organizations within the state public health system conduct activities designed to inform and educate people about health issues. To maximize effectiveness of health messages and health promotion, organizational work is coordinated among governmental, private, and voluntary sector organizations, including state and local health departments, state agencies with public health functions, educational organizations, healthcare providers, insurers, foundations, associations working to reduce risks for certain diseases, and consumer groups targeted to receive health messages.

Effective health education, promotion, and communication results in a knowledgeable population that can act to reduce health risks associated with chronic disease, infectious disease, and injuries.

To accomplish these results, the partner organizations in the SPHS:

- Implement health education programs and services to help meet the state's health improvement objectives and promote healthy behaviors.
- Implement health promotion initiatives and programs to help meet the state's health improvement objectives, reduce risks, and promote better health.
- Design and implement health communications to reach wide and diverse audiences with information that enables people to make healthy choices.
- Maintain an effective emergency communications capacity to ensure rapid communications response in the event of a crisis.

3.1.1 Health education programs and services designed to promote healthy behaviors........50

3.1.2 Health promotion initiatives and programs designed to reduce health risk and promote better health........50

3.1.3 Health communications designed to enable people to make healthy choices........25

3.1.4 Maintenance of crisis communications plan........75

3.2 State-Local Relationships

The partner organizations in the SPHS work with local public health systems to provide assistance, capacity building, and resources for local efforts to inform, educate, and empower people about health issues. Many SPHS partner organizations support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members or counterparts, who are themselves partners in local public health systems. Results of good state-local relationships are increased cooperation with local public health systems to plan and implement effective health education, health promotion, and health communication activities.

To accomplish these results, the partner organizations in the SPHS:

- Provide technical assistance to develop skills and strategies for effective local health communication, health education, and health promotion interventions.
- Support and assist local public health systems in developing effective emergency communication capabilities.

3.2.1 Assistance to local public health systems to develop health communication, education and promotion skills 75

3.2.2 Support and assistance to local public health systems to develop effective emergency communications 75

3.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in informing, educating, and empowering people about health issues. SPHS partner organizations actively use the information from these reviews to continuously improve the quality of their efforts. System-wide collaborative approaches for review, evaluation, and performance management are essential to improve health education, health promotion, and health communications activities. In their efforts to measure and improve performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance. Active improvement processes based on rigorous reviews of SPHS performance produce more effective efforts to create an environment in which people can live healthy lives.

To accomplish these results, the partner organizations in the SPHS:

- Review the effectiveness and appropriateness of their health communication, health education, and health promotion services.
- Manage the overall performance of SPHS activities to inform, educate, and empower people about health issues for the purpose of quality improvement.

3.3.1 Periodic review of effectiveness of health communication, education, and promotion services 50

3.3.2 Active management of performance improvement to inform, education, and empower people about health 25

3.4 Capacity and Resources

SPHS partner organizations effectively invest in and utilize human, technology, information, organizational, and financial resources to inform, educate, and empower people about health issues. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts in health education, promotion, and communication. The state public health agency enhances the capacity of the SPHS by its leadership activities in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments in informing and educating people by all SPHS partner organizations are essential for a well-functioning system capable of empowering people to gain knowledge and act to reduce their health risks.

To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources to informing, educating, and empowering people about health issues.
- Align organizational relationships to focus statewide assets on health communication and health education and promotion services.
- Use a competent workforce skilled in developing and implementing health communication and health education and promotion interventions.

3.4.1 Commitment of financial resources to health communication, education, and promotion efforts 50
3.4.2 Alignment and coordination of efforts for health communication, education and promotion 25
3.4.3 Collective professional expertise to carry out health communication, health education, and promotion 50

EPHS 4. Mobilize Partnerships to Identify and Solve Health Problems

4.1 Planning and Implementation

The partner organizations in the SPHS conduct a variety of community engagement practices to build and expand statewide partnership alliances. Partnership relationships are built and sustained by mutual interest in improving the health of the state's population and in increasing the effectiveness of collective actions designed to improve health. Leaders in the sponsoring organizations recognize the value in collaborative efforts and carry out a vision of inclusion of stakeholders from public, private, and voluntary sectors in the state. Collaborative relationships take tangible forms in task forces, problem-specific coalitions, and ongoing sustained partnerships. The active presence of a formal state public health system partnership that identifies and solves health problems is potentially the most far-reaching of these practices.

A wide variety of SPHS partner organizations are actively engaged in task forces, coalitions, and partnerships, including state governmental agencies, local governmental agencies, private sector organizations, and not-for profit organizations. All of these multi-sector groups come together around issues of importance to their organizations and the well-being of the state's population.

Mobilizing effective multi-sector partnerships can produce a number of important results. Greater awareness and understanding of health and public health system problems can help to build a constituency for public health and shared ownership of statewide solutions to those problems. Collective action by many organizations is often necessary to solve difficult problems, and partnership activities can be a powerful driving force for joint assessment, planning, advocacy, and implementation.

To accomplish these results, the partner organizations in the SPHS:

- Engage and convene organizations into task forces and coalitions to address health problems in the state and build statewide support for solutions.
- Organize partnerships for public health to foster the development of state health needs assessments and improvement plans, the sharing of resources and responsibilities, collaborative decision-making, and accountability for delivering EPHS at the state and local levels.

4.1.1 Mobilization of task forces **50**
4.1.2 Formalization of sustained partnerships **25**

4.2 State-Local Relationships

The partner organizations in the SPHS engage in robust partnerships with local public health systems to provide technical assistance, capacity building, and resources for local community partnership development. Many SPHS partner organizations support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members, who are themselves partners in local public health systems. Results of good state-local relationships are increasingly effective local collaborations and partnerships focused on improved community health.

To accomplish these results, the partner organizations in the SPHS:

- Assist local public health systems to build competencies in community development, advocacy, collaborative leadership, and partnership management.
- Provide incentives for local partnership development.

4.2.1 Assistance to local public health systems to build partnerships **50**
4.2.2 Incentives for local public health system partnerships **25**

4.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in mobilizing partnerships. Members of the SPHS actively use the information from these reviews to continuously improve the quality of their partnership efforts. System-wide collaborative approaches for review, evaluation, and performance management are essential to improve partnership development. In their efforts to measure and improve performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance.

Active improvement processes based on rigorous reviews of SPHS performance produce more active and effective engagement of organizations within the SPHS and a better collective effort to improve health and the public health system.

To accomplish these results, the partner organizations in the SPHS:

- Review the effectiveness of their partnership efforts.
- Manage the overall performance of their partnership activities for the purpose of quality improvement.

4.3.1 Review of partnership development activities **25**
4.3.2 Active management and performance improvement in partnership activities **25**

4.4 Capacity and Resources

The partner organizations in the SPHS effectively invest in and utilize human, information, technology, organizational, and financial resources to assure that their partnership mobilization efforts meet the needs of the state's population. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts in working within partnerships. The state public health agency enhances the capacity of the SPHS by its leadership in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments by all SPHS partner organizations in statewide engagement and mobilization efforts are essential for a well-functioning system capable of carrying out and improving collective action to improve health through partnerships.

To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources to sustain partnerships and support their actions.
- Align organizational relationships to focus statewide assets on partnerships.
- Use a workforce skilled in assisting partners to organize and act on behalf of the health of the public.

4.4.1 Commitment of financial resources to sustain partnerships **50**
4.4.2 Alignment and coordination to mobilize partnerships **50**
4.4.3 Collective professional expertise to carry out partnership development activities **75**

EPHS 5. Develop Policies and Plans that Support Individual and Statewide Health Efforts

5.1 Planning and Implementation

The partner organizations in the SPHS work collaboratively to conduct comprehensive and strategic health improvement planning and policy development. Planning processes integrate health status information, public input and communication, analysis of policy options, and recommendations for action based on the best evidence. Planning and policy development activities are conducted by collaborative SPHS groups for disease-specific or issue-oriented problems, such as HIV prevention planning, planning for improvement of physical activity levels, and implementation of health reform programs in the state. SPHS partner organizations use the results of these statewide collaborative processes and develop a state health improvement plan that outlines broad overall health and public health system priorities of the SPHS. The state health improvement plan also uses the state health needs assessment and the results of systems assessments (such as this NPHPS assessment) to develop its overall blueprint for collective action to improve health and systems performance at the state level. All-hazards plans for statewide emergency preparedness are developed and implemented using similar collaborations with SPHS partner organizations. Policy development is prompted by issue-oriented collaborative groups or statewide improvement plans; policy development actively involves partner organizations in communication and advocacy for new laws or regulations that will improve population health.

All SPHS partner organizations participate in policy and planning activities in the state. Leadership to convene collaborative groups for planning and policy development is dispersed but coordinated across the system, enabling any SPHS partner organizations to convene planning and policy groups to consider important health system topics. Public, private, and voluntary agencies are included in planning and policy processes and their implementation.

Multi-sector approaches to planning and policy development result in greater acceptability of plans and policy proposals and broader collective responsibility for implementation. Strategic plans developed by SPHS partner organizations recognize and address their role in implementing broad strategies outlined in the state health improvement plan. This alignment of partners' organizational strategic plans and the SPHS state health improvement plan provides a powerful foundation for statewide implementation of policy and plan objectives to improve public health performance and the health of the state's population.

To accomplish these results, the partner organizations in the SPHS:

- Develop statewide health improvement processes that convene partners for collaborative planning and implementation of needed improvements in the public health system.
- Produce a state health improvement plan(s) that outlines strategic directions for statewide improvements in health promotion, disease prevention, and response to emerging public health problems.
- Establish and maintain system-wide emergency response capacity, plans, and protocols for all-hazards, addressing multiagency coordination and readiness.
- Engage in health policy development activities and take necessary actions to communicate and advocate for policies that affect the public's health.

5.1.1 Implementation of statewide health improvement processes....50
5.1.2 Development of statewide health improvement plan to guide collective effort....25
5.1.3 All hazards preparedness plan....100
5.1.4 Policy development activities....75

5.2 State-Local Relationships

SPHS partner organizations work with local public health systems to provide assistance, capacity building, and resources for their efforts to develop local policies and plans that support individual and statewide health efforts. Many SPHS partner organizations support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members, who are themselves partners in local public health systems. Results of good state-local relationships in planning and policy development are increased awareness of local and state health priorities and more coordination of state and local planning processes. This coordination produces more effective plan implementation based in collaborative state and local action.

To accomplish these results, the partner organizations in the SPHS:

- Provide technical assistance and training to local public health systems in the development of community health improvement plans, including assistance in the linking of local plans to the state health improvement plan.
- Provide assistance to local public health systems in the development of local all-hazards preparedness plans.
- Provide technical assistance and support for conducting local health policy development.

5.2.1 Technical assistance to local public health systems for community health improvement....25
5.2.2 Technical assistance in development of local all-hazards preparedness plans....100
5.2.3 Technical assistance e in local health policy development....25

5.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in policy development and planning. SPHS partner organizations actively use the information from these reviews to continuously improve the quality of policy and planning activities in supporting individual and statewide health efforts. System-wide collaborative approaches for review, evaluation, and performance management are essential to improve planning and policy development. In their efforts to measure and improve performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance. Active improvement processes based on rigorous reviews of SPHS performance produce more informed, relevant, and collaborative plans and policies that are the basis for collective action by SPHS partner organizations.

To accomplish these results, the partner organizations in the SPHS:

- Regularly monitor the state's progress toward accomplishing its health improvement objectives.
- Review new and existing policies to determine their public health impact.
- Conduct exercises and drills to test preparedness response capacity as outlined in the state's all-hazards preparedness plan.
- Manage the overall performance of its policy and planning activities for the purpose of quality improvement.

5.3.1 Progress review toward accomplishing health improvement **25**
5.3.2 Review of new and existing policies to determine their public health impacts **25**
5.3.3 Formal exercises of the procedures and protocols linked to its all-hazards preparedness plan **100**
5.3.4 Active management and performance improvement in planning and policy development **25**

5.4 Capacity and Resources

SPHS partner organizations effectively invest in and utilize their human, information, technology, organizational, and financial resources to assure that their health planning and policy practices meet the needs of the state's population. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts in developing and implementing the statewide improvement plans. The state public health agency enhances the capacity of the SPHS by its leadership in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments in effective and collaborative planning and policy development by all SPHS partner organizations are essential in a well-functioning system capable of setting priorities, designing strategies, and making improvements in their public health system collectively.

To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources to develop and implement health policies and plans.
- Align organizational relationships to focus statewide assets on health planning and policy development.
- Use the skills of the SPHS workforce in health improvement planning and in health policy development.

5.4.1 Commitment of financial resources to health planning and policy development **25**
5.4.2 Alignment and coordination of efforts to implement health planning and policy development **25**
5.4.3 Collective professional expertise to carry out planning and policy development **75**

EPHS 6. Enforce Laws and Regulations that Protect Health and Ensure Safety

6.1 Planning and Implementation

The partner organizations in the SPHS assure that laws and enforcement activities are based on current public health science and best practices for achieving compliance. Emergency powers are in place, providing state and local systems the ability to detect, manage, and contain emergency public health threats. SPHS partner organizations solicit input on reviewed laws from stakeholders, including legislators, legal advisors, and the general public, especially persons and entities in the relevant regulated environment. The SPHS partner organizations maintain cooperative relationships between those who enforce laws and those in the regulated environment. Education is provided to all those affected by public health laws to encourage compliance. Regulatory processes that carry out legal mandates are customer-centered and conducted openly and fairly.

Key participants in enforcing laws and regulations are government entities that are mandated to enforce laws that protect the public's health (state and local public health, police, etc.) and the regulated entities that must comply with laws. Regulated entities include many organizations within the SPHS, such as hospitals, businesses, food establishments, schools, and members of the public. All have a responsibility to comply with public health and safety laws.

Laws based on current scientific knowledge about the best ways to protect the health of the population form a strong legal basis for both routine and emergency public health activities carried out within the SPHS. Universal compliance with and effective enforcement of public health laws and regulations will result in a safer, healthier environment in the state and a healthier population.

To accomplish these results, the partner organizations in the SPHS:

- Review and update existing and proposed state laws to assure laws have a sound basis in science and best practice.
- Review and update laws to assure appropriate emergency powers are in place.
- Foster cooperation among persons and entities in the regulated environment and persons and entities that enforce laws for the purpose of supporting compliance and ensuring that laws and regulations accomplish their health and safety purposes.
- Ensure that administrative processes, such as those for permits and licenses, are customer-centered for convenience, cost, and quality of service and are administered according to written guidelines.

6.1.1 Assure existing and proposed laws are designed to protect public health 100
6.1.2 Assure laws give authorities ability to prevent, detect, and manage emergency health threats 100
6.1.3 Cooperative relationships between regulatory bodies and entities in the regulated environment 75
6.1.4 Ensure administrative processes are customer-centered 25

6.2 State-Local Relationships

SPHS partner organizations work with local public health systems to provide assistance, capacity building, and resources for local efforts to enforce laws that protect health and safety. Many SPHS partner organizations support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members, who are themselves partners in local public health systems.

Results of good state-local relationships are increased compliance with laws and better coordination of regulatory and enforcement efforts.

To accomplish these results, the partner organizations in the SPHS:

• Offer technical assistance to local public health systems based on current scientific knowledge and best practices for achieving compliance in both routine and complex enforcement operations.

• Assist local governing bodies to develop local laws that incorporate current scientific knowledge and best practices for achieving compliance.

6.2.1 Technical assistance and training to local public health systems on compliance and enforcement 75
6.2.2 Assist local governing bodies in incorporating science and best practices in local laws 75

6.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in complying with and enforcing laws that protect health and safety. SPHS partner organizations actively use the information from these reviews to continuously improve the quality of both compliance and enforcement efforts. System-wide collaborative approaches for review, evaluation, and performance management are essential to improve the legal basis for public health action and all the activities needed to assure compliance with laws and regulations. In their efforts to measure and improve system performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance. Active improvement processes based on rigorous reviews of SPHS performance produce more effective and efficient compliance and enforcement efforts and a healthier, safer population.
To accomplish these results, the partner organizations in the SPHS:

- Review the effectiveness of its laws and its compliance and enforcement activities, using resources such as the Model State Public Health Act and Model State Emergency Powers Act.
- Manage the overall performance of its compliance and enforcement activities for the purpose of quality improvement.

6.3.1 Review effectiveness of regulatory, compliance, and enforcement activities 100
6.3.2 Active management and performance improvement of compliance and enforcement activities 25

6.4 Capacity and Resources

SPHS partner organizations effectively invest in and utilize their human, information, technology, organizational, and financial resources to assure a sound legal basis for public health action and to enforce laws that protect health and safety in the state. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts in compliance and enforcement of laws. The state public health agency enhances the capacity of the SPHS by its leadership in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments by all SPHS partner organizations are essential to support a well-functioning system capable of carrying out and improving the development of, enforcement of, and compliance with laws designed to protect public health and safety.

- To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources for the enforcement of laws that protect health and ensure safety.
- Align organizational relationships to focus statewide assets on enforcement activities.
- Use workforce expertise to effectively carry out the review, development, and implementation of public health laws.

6.4.1 Commitment of financial resources to enforcement of laws that protect health **25**
6.4.2 Alignment and coordination of efforts to enforce laws and regulations **50**
6.4.3 Collective professional expertise to review, develop, and implement public health laws **75**

EPHS 7. Link People to Needed Personal Health Services and Assure the Provision of Healthcare When Otherwise Unavailable

7.1 Planning and Implementation

The partner organizations in the SPHS assess the availability of personal health services for the state's population and work collaboratively among state and local partners to assure that the entire state population has access to high quality personal healthcare. SPHS partner organizations work together to assure that all residents of the state have access to the healthcare services they need, ranging from primary prevention to rehabilitative care. Barriers to personal healthcare, the needs of underserved populations, and health disparities are continuously assessed so that appropriate action can be taken by SPHS partner organizations to improve health service access. SPHS partner organizations are active in responding to policy changes in the health insurance environment and other emerging issues that potentially alter the availability of and access to healthcare.
Coordination of SPHS partner organization activities to improve healthcare delivery reduces fragmentation of effort across the system and provides a clear and unified voice on issues of access, availability, and effectiveness of personal healthcare in the state. SPHS partner organizations maintain an active partnership in linking people to needed health services. Key players are state agencies (public health, insurance, and Medicaid), hospitals, physicians, dentists, and other health professionals, local health departments and other members of local public health systems, insurers, community organizations representing underserved populations, and organizations providing case management, outreach services, and coordination of care.

A robust SPHS partnership engaged in assessment and active policy and program initiatives improves healthcare delivery in the state. The state's population health improves over time as a result of the efforts of SPHS partner organizations. As healthcare and prevention become increasingly accessible to the population, health disparities are reduced.

To accomplish these results, the partner organizations in the SPHS:

- Assess the availability of and access to personal health services for all persons living in the state, including underserved populations.

7.1.1 Assessment of availability of and access to personal health services **50**
7.1.2 Collective policy and programmatic action to eliminate barriers to access to personal healthcare **25**
7.1.3 Establishment and maintenance of statewide health insurance exchange **25**
7.1.4 Mobilization of assets to reduce health disparities **50**

7.2 State-Local Relationships

The partner organizations in the SPHS work with local public health systems to provide assistance, capacity building, and resources for local efforts to identify underserved populations and develop innovative approaches for meeting their personal healthcare needs. Many SPHS partner organizations support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members, who are themselves partners in local public health systems. Results of good state-local relationships are increased effectiveness at the local level in assessing health disparities, in meeting the needs of underserved populations, and improved personal healthcare service delivery.

To accomplish these results, the partner organizations in the SPHS:

- Provide technical assistance in methods for identifying and meeting personal healthcare needs of underserved populations.
- Provide technical assistance to local personal healthcare providers serving underserved populations to improve personal healthcare service delivery.

7.2.1 Technical assistance to local public health systems to assess and meet needs of underserved 25
7.2.2 Technical assistance to providers who deliver healthcare to underserved 50

7.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in the provision of personal healthcare to the state's population. SPHS partner organizations actively use the information from these reviews to continuously improve the quality of their efforts to link people to needed personal health services. System-wide collaborative approaches for review, evaluation, and performance management are essential to improve the process of linking people to needed services. In their efforts to measure and improve performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance. Active improvement processes based on rigorous reviews of SPHS performance produce better quality of personal healthcare and more effective approaches to meeting the needs of underserved populations and reducing health disparities.

To accomplish these results, the partner organizations in the SPHS:

- Review healthcare quality (using such resources as Health Plan Employer Data and Information Set [HEDIS], the National Strategy for Quality Improvement in Health Care, and CDC's Guide to Clinical Preventive Services.
- Review changes in barriers to personal healthcare, focusing on the effects of SPHS actions to improve access to care.
- Manage the overall performance of its activities to link people to needed health services for the purpose of quality improvement.

7.3.1 Review of quality of personal healthcare services 25
7.3.2 Review of changes in barriers to personal healthcare 25
7.3.3. Active management and performance improvement in linking people to needed services 25

7.4 Capacity and Resources

The partner organizations in the SPHS effectively invest in and utilize their human, information, technology, organizational, and financial resources to assure the provision of personal healthcare to meet the needs of the state's population. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts to link people to the services they need. The state public health agency enhances the capacity of the SPHS by its leadership in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments by all SPHS partner organizations are essential to support a well-functioning system capable of carrying out and improving personal healthcare service delivery to better meet the needs of the entire population.

To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources for the provision of needed personal healthcare.
- Align organizational relationships to focus statewide assets on linking people to needed personal healthcare and ensuring the provision of healthcare.
- Use a workforce skilled in the evaluation, analysis, delivery, and management of personal health services.

7.4.1 Commitment of financial resources to assure provision of needed personal healthcare............................**25**
7.4.2 Alignment and coordination of efforts to provide personal healthcare **25**
7.4.3 Collective professional expertise to carry out function of linking people to personal health care..........**25**

EPHS 8. Assure a Competent Public and Personal Healthcare Workforce

8.1 Planning and Implementation

The partner organizations in the SPHS identify the public health workforce needs of the state and implement recruitment and retention policies to fill those needs. The public health workforce is defined broadly as the array of personnel providing population-based and personal (clinical) health services in public and private settings across the state, all working to improve the public's health through community and clinical prevention services. More specifically, the population-based workforce is made up of public health professionals involved in the provision of population-based health programs and services designed to prevent disease or injury and promote health among groups of persons. The personal healthcare workforce is made up of medical, nursing, and allied health professionals who are engaged in the delivery of clinic or hospital based primary, secondary, or tertiary services designed to protect or remediate the health of individuals. SPHS partner organizations provide a dynamic workforce development environment, featuring training to improve competencies, continuing education, and lifelong learning opportunities to assure that the workforce effectively delivers the Essential Public Health Services.

All SPHS partner organizations conduct workforce assessment, planning, and development activities. Key partners in these endeavors are educational programs at all levels that prepare the workforce, partner organizations that employ and develop the workforce, and key professional groups that have unique perspectives on workforce needs. Academic-practice collaborations are an important vehicle for SPHS partner organizations to meet their workforce needs.

A competent population-based and personal healthcare workforce works at the highest levels of proficiency in meeting the health needs of the state's population. The workforce is knowledgeable and committed to solving problems and achieving overall SPHS health improvement priorities.

To accomplish these results, the partner organizations in the SPHS:

- Based on assessments of workforce needs, develop a statewide workforce plan(s) that establishes strategies and actions needed to recruit, maintain, and sustain a competent and diverse personal healthcare workforce.
- Provide human resource development programs focused on enhancing the skills and competencies of the workforce.
- Assure that the state's population-based and personal healthcare workforce attain the highest level of knowledge and functioning in the practice of their professions.
- Support continuous professional development through programs focused on lifelong learning.

8.1.1 Development of a statewide population based workforce plan **25**
8.1.2 Development of a statewide personal healthcare workforce plan **50**
8.1.3 Provide training to enhance the technical and professional competencies of the workforce **50**
8.1.4 Assure that individuals in the public health workforce achieve highest level of professional practice 75
8.1.5 Support for initiatives that encourage lifelong learning **25**

8.2 State-Local Relationships

The partner organizations in the SPHS work with local public health systems to provide assistance, capacity building, and resources for local efforts to assure a competent population-based and personal healthcare workforce. Many SPHS partner organizations support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members, who are themselves partners in local public health systems. Results of good state-local relationships are increased workforce competency and knowledge and a sufficiently-staffed public health system better able to meet the health needs of the state's population.

To accomplish these results, the partner organizations in the SPHS:

- Assist local public health systems in planning for the future needs for population-based and personal healthcare workforces, based on workforce assessments.
- Provide assistance to local public health systems in recruitment, retention, and performance improvement strategies to improve the availability and competency of the local public health system workforce.

8.2.1 Assistance to local public health systems in public health workforce planning **25**
8.2.2 Assistance to local public health systems with workforce development **50**

8.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in ensuring a competent population-based and personal healthcare workforce. SPHS partner organizations actively use the information from these reviews to continuously improve the quality of workforce development efforts. System-wide collaborative approaches for review, evaluation, and performance management are essential to improve workforce development. In their efforts to measure and improve performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance. Active improvement processes based on rigorous reviews of SPHS performance produce a better-prepared, more knowledgeable workforce.

To accomplish these results, the partner organizations in the SPHS:

- Review the implementation of their workforce development activities to determine their effectiveness in improving the availability and competency of the workforce.
- Through academic-practice collaborations, evaluate the preparation of personnel entering the workforce.
- Manage the overall performance of their workforce development activities for the purpose of quality improvement.

8.3.1 Review of workforce development activities......50
8.3.2 Evaluation of preparation of personnel entering the workforce......50
8.3.3 Active management and collective performance improvement in workforce development......25

8.4 Capacity and Resources

The partner organizations in the SPHS effectively invest in and utilize their human, information, technology, organizational, and financial resources to assure a competent population-based and personal healthcare workforce. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts in workforce development. The state public health agency enhances the capacity of the SPHS by its leadership in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments by all SPHS partner organizations are essential to support a well-functioning system capable of improving workforce competency and effectiveness.

To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources to support workforce development.
- Align organizational relationships to focus statewide assets on workforce development.
- Use the skills of the SPHS workforce in the management of human resources and workforce development programs supporting the delivery of high quality personal healthcare and population-based services throughout the state.

8.4.1 Commitment of financial resources to workforce development efforts......25
8.4.2 Alignment and coordination of efforts to effectively conduct workforce development activities......25
8.4.3 Collective professional expertise to carry out workforce development activities......50

EPHS 9. Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Health Services

9.1 Planning and Implementation

The partner organizations in the SPHS conduct evaluations to improve the effectiveness of population-based services and personal healthcare services within the state. Evaluation is considered a core activity of the public health system and is essential to understand how to improve the quality of services for the state's population. Whether focused on the entire population or on individual patients, evaluations use relevant, nationally-recognized standards of best practice and program effectiveness as benchmarks for current performance. Evaluation designs incorporate state, local, and consumer perspectives into reviews of services and systems. Credentials of the population-based and personal healthcare workforce are monitored and up to date with current standards. In addition to performance, the effectiveness of services in improving the health of the population is also evaluated.

Routine evaluations identify strengths and weaknesses in programs, services, and the public health system overall, and these findings are actively used in quality and performance improvement.

All SPHS partner organizations conduct evaluation activities within their own organizations and contribute to a coordinated approach, evidenced by collaborative evaluations of the state's public health system and its effectiveness in meeting the health needs of the state's population. All SPHS partner organizations participate in implementing performance improvement activities, both in their own organizations and together to address public health system performance.

The conduct and active use of evaluations to improve the quality of health services and the public health system produces a dynamic environment of performance assessment, evaluation, and improvement. The state's population benefits from a public health system whose partner organizations strive to attain the highest level of effectiveness.

To accomplish these results, the partner organizations in the SPHS:

- Evaluate population-based health services within the state (e.g., injury prevention, promotion of physical activity, tobacco control and prevention, immunizations), using resources such as the Guide to Community Preventive Services.
- Evaluate the effectiveness of personal healthcare services within the state using resources such as the Guide to Clinical Preventive Services.
- Evaluate the performance of the state public health system in delivering Essential Public Health Services to the state's population.
- Seek third-party evaluation of organizational effectiveness, through certification, accreditation, licensing, or other means of striving for the highest levels of performance.

9.1.1 Routine evaluation of population-based health services 50
9.1.2 Evaluation of effectiveness of personal health services 50
9.1.3 Evaluation of performance of state public health system 25
9.1.4 Seek appropriate certification, accreditation, licensure, and other third-party evaluation 50

9.2 State-Local Relationships

The partner organizations in the SPHS work with local public health systems to provide assistance, capacity building, and resources for local efforts to evaluate the performance and effectiveness of population-based programs, personal healthcare services, and local public health systems. Many SPHS partner organizations support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members, who are themselves partners in local public health systems. Good state-local relationships in evaluation activities result in improved understanding of program effects to inform service delivery decisions. The effectiveness of local service delivery and the performance of the local public health system improve in a dynamic environment of evaluation information and improvement.

To accomplish these results, the partner organizations in the SPHS:

- Provide technical assistance to local public health systems in their evaluation activities, encompassing population-based programs, personal healthcare services, and overall local public health systems performance, using performance resources, such as the Baldrige National Quality Program and the National Public Health Performance Standards.
- Share results of state-level performance evaluations with local public health systems for use in local health improvement and strategic planning processes.
- Assist local organizations in achieving third-party evaluations of their organizational performance, through certification, accreditation, licensing, or other designations of high performance (e.g., the state public health agency assists local public health agencies in accreditation; the state Red Cross evaluates local Red Cross chapters; the state hospital association assists local member hospitals in maintaining licensure and accreditation).

9.2.1 Technical assistance to local public health systems in their evaluation activities 25
9.2.2 Sharing of results of state-level performance evaluations with local public health systems 75
9.2.3 Assistance to local organizations to achieve certification, accreditation, and licensure 50

9.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in evaluating the effectiveness, accessibility, and quality of population-based programs, personal healthcare services, and public health systems. SPHS partner organizations actively use the information from these reviews to continuously improve the quality of evaluation efforts. System-wide collaborative approaches for review and performance management are essential to improve evaluation. In their efforts to measure and improve performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance. Active improvement processes based on rigorous reviews of SPHS evaluation performance produce more meaningful and useful evaluations that are relevant to programs, services, and systems improvement activities. The culture of quality improvement that is present throughout the state public health system results in more effective programs and services to meet the health needs of the population.

To accomplish these results, the partner organizations in the SPHS:

- Review the effectiveness of their evaluation activities to assure there is a broad scope of evaluation activities and use of appropriate evaluation methods, using nationally recognized resources, such as CDC's Framework for Program Evaluation in Public Health.
- Manage the overall performance of its evaluation activities for the purpose of quality improvement.
- Promote systematic quality improvement processes throughout the state public health system.

9.3.1 Regular review of effectiveness of evaluation activities 25
9.3.2 Active management and collective performance improvement in evaluation activities 25
9.3.3 Promotion of systematic quality improvement process throughout the system 25

9.4 Capacity and Resources

The partner organizations in the SPHS effectively invest in and utilize their human, information, technology, organizational, and financial resources to evaluate the effectiveness, accessibility, and quality of population-based and personal healthcare services. Evaluations are appropriately resourced so they can be routinely conducted. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts in evaluation.

The state public health agency enhances the capacity of the SPHS by its leadership in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments by all SPHS partner organizations are essential to support a well-functioning system capable of carrying out and improving evaluation activities.

To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources for evaluation activities.
- Align organizational relationships to focus statewide assets on evaluating population-based and personal healthcare services.
- Use a workforce skilled in monitoring and analyzing the performance and capacity of the state public health system and its programs and services.

9.4.1 Commitment of financial resources for evaluation **25**
9.4.2 Alignment & coordination of efforts to conduct evaluations of personal and population-based health **25**
9.4.3 Collective professional expertise to carry out evaluation activities **25**

EPHS 10. Research for New Insights and Innovative Solutions Health Problems

10.1 Planning and Implementation

The partner organizations in the SPHS contribute to public health science (both population-based and personal healthcare) by identifying and participating in research activities. These research activities address new insights into the most effective approaches to implement the Essential Public Health Services. SPHS partner organizations foster innovation by continuously using new information and the best scientific knowledge about effective practice in their work to improve the health of the state's population. Academic-practice collaborations are in place in medical, nursing, public health, and other disciplines within the SPHS. These collaborations bridge the interests of the research community and the needs of the practice community, by identifying practice-relevant research agendas, promoting practice-based research, and disseminating practice-relevant research findings. Practice-based research studies the effectiveness, efficiency, and equity of public health strategies and medical care innovations in real-world practice settings.

SPHS partner organizations most involved in research and innovations are university-based health sciences schools and other university-based disciplines that are health-related, such as urban planning, social work, and community development. On the practice side, physician, nursing, and other clinical professional groups, state and local public health departments, and hospital associations are key SPHS partner organizations in practice-based research.

Active interest in relevant research and new knowledge by SPHS partner organizations enables them to stay current and use the most modern methods of practice to improve both evidence-based decision-making and effectiveness in delivering population-based and personal healthcare services.

To accomplish these results, the partner organizations in the SPHS:

- Foster innovations by developing public health research agendas and disseminating and applying research findings and new knowledge to improve service delivery, through the work of statewide academic-practice collaborations.
- Conduct and participate in practice-based research to maximize learning about more effective methods of improving the health of the state's population.

10.1.1 Organization of research and dissemination and use of findings in practice **25**
10.1.2 Participation in research to discover more effective methods to improve the public's health **25**

10.2 State-Local Relationships

The partner organizations in the SPHS work with local public health systems to provide assistance, capacity building, and resources for local efforts to carry out research for new insights and innovative solutions to health problems. Many SPHS partner organizations support local agencies to carry out their mission locally, including, but not limited to, the state public health agency, the state hospital association, the state mental health and substance abuse agency, the state heart association, the state United Way, and the state Red Cross. Each of these statewide organizations is active in support of its local members, who are themselves partners in local public health systems. Results of good state-local relationships in research and innovations are increased capability of local organizations to use new evidence and knowledge to improve their delivery of services.

To accomplish these results, the partner organizations in the SPHS:

- Assist local public health systems in their research activities, including promoting community-based participatory research.
- Assist local public health systems in the use of research findings to improve public health practice at the local level.

10.2.1 Technical assistance to local public health systems in research activities **25**
10.2.2 Assistance to local public health systems in use of research findings **25**

10.3 Performance Management and Quality Improvement

The partner organizations in the SPHS review the effectiveness of their performance in conducting and using research for new insights and innovative solutions to health problems. SPHS partner organizations actively use the information from these reviews to continuously improve the quality of research efforts. System-wide collaborative approaches for review, evaluation, and performance management are essential to improve health research and the use of new evidence in practice. In their efforts to measure and improve performance, SPHS partner organizations use performance management approaches in their respective organizations and contribute to collective SPHS activities to measure progress in system-wide performance. Active improvement processes based on rigorous reviews of SPHS performance support the introduction of relevant innovations into practice (both population-based and personal healthcare services). The health of the population improves when the most current scientific knowledge is used to inform service delivery decisions.

To accomplish these results, the partner organizations in the SPHS:

- Regularly monitor their research activities for relevance to current issues in practice and for appropriateness in scope and methodology.
- Manage the overall performance of research activities for the purpose of quality improvement.

10.3.1 Review of public health research activities **0**
10.3.2 Active management and performance improvement in research and innovation **0**

10.4 Capacity and Resources

The partner organizations in the SPHS effectively invest, manage, and utilize their human, information, technology, organizational, and financial resources for the conduct of research to find more innovative and effective service delivery processes. Coordinated use of system assets is grounded in the alignment of organizational strategic plans around collective efforts in research and dissemination of new evidence and innovations. The state public health agency enhances the capacity of the SPHS by its leadership in this service. The workforce of SPHS partner organizations coordinates collective system-wide activities. These investments by all SPHS partner organizations are essential to support a well-functioning system capable of carrying out research activities and improving practice by introducing evidence-based innovations into service delivery.

To accomplish these results, the partner organizations in the SPHS:

- Commit adequate financial resources for research to foster innovations in public health practice.
- Align organizational relationships to focus statewide assets on research and applying new evidence to practice.
- Use a workforce skilled in conducting and applying research relevant to the practice of the Essential Public Health Services.

10.4.1 Commitment of financial resources to research relevant health improvement **25**
10.4.2 Alignment and coordination of effort to conduct research **25**
10.4.3 Collective professional expertise to carry out research activities **75**

WORK PLANS

Appendix L – Increase Educational Attainment

The U.S. Census Bureau collects educational attainment information annually through the American Community Survey and Current Population Survey. Educational attainment is defined as the highest level of formal education completed (i.e., high school diploma or equivalent, bachelor's degree, graduate/professional degree). An educated workforce is an important factor for economic development. Completion of formal education is associated with higher paying jobs and access to resources that impact health such as: food, housing, transportation, health insurance, recreation, and other basic necessities for physical and mental wellbeing. In Mississippi, 81.5% of adults age 25 and older have at least a high school diploma, this is lower than the national average (86.0%).

Source: US Census Bureau American Community Survey, Rev May 28, 2015.

APPENDIX L : Mississippi State Community Scorecard – 2016
PRIORITY AREA #1: Increase Educational Attainment

Goal 1.0 Increase high school graduation rates

Strategic Objective 1.0 Decrease pregnancy rate in women aged 15-19

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Rate of teen pregnancy among women aged 15-19 *Data Source: MSDH Office of Public Health Statistics*	2013: 49.1/1000	December 31, 2020: 44.2/1000	a. Develop health education campaign (PSA's, social media, etc.) on contraceptive availability and usage b. Provide evidence-based skills training on LARC insertions and evidence-based skills training on contraceptive option counseling to providers. c. Support implementation of high quality sexuality education curricula in middle and high schools in accordance with state law d. Support sexuality education teacher trainings and professional development	

Organization/ Lead Person: Danielle Lampton, Comprehensive Reproductive Health and Adolescent Health Program, MSDH; Kenyatta Parker, PREP, MSDH

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Contraceptive Use Percentage of female Title X clients aged 15-19 years using LARC *Data Source: CDC and DHHS Office of Population Affairs (MMWR 4/10/15)*	2013: 0.7%	December 31, 2020: 1.5%	a. Develop health education campaign (PSA's, social media, etc.) on contraceptive availability and usage, targeting Title X clinic sites b. Provide evidence-based training and comprehensive clinical training on LARC insertions and contraceptive option counseling to Title X Clinic providers and staff	

Organization/ Lead Person: Danielle Lampton, Comprehensive Reproductive Health and Adolescent Health Program, MSDH

APPENDIX L : Mississippi State Community Scorecard – 2016
PRIORITY AREA #1: Increase Educational Attainment

Goal 1.0 Increase high school graduation rates

Strategic Objective 2.0 Reduce Sexually Transmitted Infections in individuals aged 15-19

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Rate of chlamydia infections in individuals aged 15-19 Rate of gonorrhea infections in individuals aged 15-19 Rate of new HIV infections in individuals aged 15-19	Data Development Agenda		a. Support implementation of high quality sexuality education curricula in middle and high schools in accordance with state law b. Support sexuality education teacher trainings and professional development c. Develop and implement community-based initiatives related to safe sex and correct condom usage	

Organization/ Lead Person: a. Kenyatta Parker, PREP, MSDH; b. Estelle Watts, Office of Healthy Schools, MDE; c. Danielle Lampton, Adolescent Health Program, MSDH d. MSDH STI/HIV Office

Strategic Objective 3.0 Increase support services for pregnant and parenting teens

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Implementation of curriculum in targeted schools	Data Development Agenda		a. Assess state school districts to develop tiered priority site list based on number of pregnant and parenting teens b. Develop an implementation plan to include: a curriculum, regular process evaluations and outcome evaluations at set intervals c. Connect with top priority schools to build collaboration for programs d. Network with existing local resources for linkages and referrals e. Train staff for program implementation f. Pilot implementation plan at 3 schools g. Launch full program according to priority listing h. Conduct process and outcome evaluations	

Organization/ Lead Person: Women's Health-Danielle Seale; Office of Healthy Schools; Adolescent Health-Danielle Lampton; PHRM

APPENDIX L : Mississippi State Community Scorecard – 2016
PRIORITY AREA #1: Increase Educational Attainment

Goal 1.0 Increase high school graduation rates

Strategic Objective 4.0 Increase linkages between existing school based health clinics (SBHC), school nurses, and local and state mental health providers and supports

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of SBHC utilizing the Adolescent Mental Wellness Assessment Percentage of SBHC who report a referral process is in place with local MH providers	Data Development Agenda		Promote linkages and referrals as a positive outcome for SBHCs Facilitate networking between SBHC staffs and mental health providers in their areas Provide utilization trainings for SBHC medical doctors, nurses, and social workers on the Adolescent Mental Wellness Assessments Develop and pilot a referral process for SBHCs to refer directly to mental health providers, possibly to include onsite service provision, and to certainly include follow-up by SBHC staff Implement referral process at select SBHC sites Evaluate effectiveness of referral process for SBHCs, patients at SBHCs, and mental health providers who receive referrals Adjust according to evaluation findings	

Organization/ Lead Person: Office of Healthy Schools; Danielle Lampton, Adolescent Health Program, MSDH; Center for the Advancement of Youth

Status will be reviewed using a stoplight approach as follows:

Red: Not On Target	Yellow: Falling Behind	Green: On Target

COORDINATING CO-CHAIRS: Danielle Lampton, MSDH and Kenyatta Parker, MSDH; ESTELLE WATTS, MDE

PARTNERS AND STAKEHOLDERS: Rozelia Harris, MSDH; Tarcha Howard, MSDH; Diane Hargrove, MSDH; Janette McCrory, IHL; Shawn Rossi, MS Hospital Association; Lonnie Edgar, PEER; Josh McCawley, Mississippi First; Tia Sides, MSDH; Michael Jordan, DMH; Christine Philley, MDE; Tanya Funchess, MSDH

Appendix M – Improve Infant Health

Infant death is a measure of the health and well-being of children and the overall health of a community. It reflects the status of maternal health, the accessibility and quality of primary health care, and the availability of supportive services in the community. Infants with low birth weight or preterm delivery have a higher risk of death. The use of alcohol, tobacco, and illegal substances during pregnancy is a major risk factor for low birth weight, infant mortality, and other poor outcomes. Infant mortality rates vary substantially among racial and ethnic groups; the rate continues to be higher for African American infants than for white infants.

During the past 10 years, Mississippi's infant mortality rate has fluctuated, with a decline below 9.0 per 1,000 for the first time in 2012. Mississippi has had a consistently higher infant mortality rate than the United States for the past decade.

Breast milk contains antibodies that can help protect infants from a variety of illnesses. Among breastfed babies, conditions such as ear infections, obesity, asthma, and diarrhea are less common. Mothers who have breastfed have a lower risk of developing breast and ovarian cancer, type 2 diabetes, and postpartum depression. The American Academy of Pediatrics (AAP) recommends that infants are breastfed for at least 12 months. If 90 percent of mothers breastfed exclusively for six months, over 900 deaths among infants could be prevented yearly.

APPENDIX M : Mississippi State Community Scorecard – 2016
PRIORITY AREA #2: Improve Infant Health

Goal 2.0 Improve the care of infants in Mississippi

Strategic Objective 2.0 Increase the number of mothers who are breastfeeding

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of infants who were ever breastfed *Data Source: CDC Breastfeeding Report Card 2013*	2013: 50.5%	2018 Births: 60.5%	a. Increase public awareness of Baby Friendly, and what that means by January 2018 b. Provide incentives to hospitals as they make efforts towards Baby Friendly by September 2016	a. Green b. Yellow

Organization/ Lead Person: a. Blue Cross/Blue Shield, Dr. Sara Broom, Sara Hedley; b. Lydia West, MSPHI

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of infants breastfed at 6 months *Data Source: CDC Breastfeeding Report Card 2013*	2013: 19.7%	2018 Births: 29.7%	c. Determine WIC breast feeding number per county by February 2016 d. Identify applicable evidence-based tools and trainings for use in Mississippi by September 2016 e. Determine necessary community partners by September 2016 f. Determine who will provide education by September 2016	c. Green d. Green e. Green f. Green g. Green

APPENDIX M : Mississippi State Community Scorecard – 2016
PRIORITY AREA #2: Improve Infant Health

Goal 2.0 Improve the care of infants in Mississippi

Strategic Objective 2.0 Increase the number of mothers who are breastfeeding

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of infants breastfed at 6 months *Data Source: CDC Breastfeeding Report Card 2013*	2013: 19.7%	2018 Births: 29.7%	g. Determine cost and find necessary funding by September 2016 h. Increase community awareness on benefits of breast feeding by August 2016 i. Follow-up with breastfeeding awareness month in August by August 2016	g. Green h. Green i. Green

Organization/ Lead Person: c. WIC, Jameshyia Thompson; d. Office of Preventive Health, Tiffany Grant; MSPHI, Lydia West; WIC, Jameshyia Thompson; e. Office of Preventive Health, Tiffany Grant; MSPHI, Lydia West; WIC, Jameshyia Thompson; f. Office of Preventive Health, Tiffany Grant; MSPHI, Lydia West; WIC, Jameshyia Thompson; g. Office of Preventive Health, Tiffany Grant; MSPHI, Lydia West; WIC, Jameshyia Thompson; h. Office of Preventive Health, Tiffany Grant; MSPHI, Lydia West; WIC, Jameshyia Thompson; i. Office of Preventive Health, Tiffany Grant; MSPHI, Lydia West; WIC, Jameshyia

Status will be reviewed using a stoplight approach as follows:

Red: Not On Target	Yellow: Falling Behind	Green: On Target

COORDINATING CO-CHAIRS: KATHY BURK, MSDH; Signe Dignan, Center for Mississippi Health Policy

PARTNERS AND STAKEHOLDERS:

Non-MSDH: Linda Rigsby, MS Center for Justice; Desta Reff, MSU SSRC; Dina Ray, March of Dimes; David Buys, MSU Extension Service; Becky Abney, MEMA; Suzanne Lewis, MEMA; Lydia West, MSPHI; Dr. Sarah Broom, BCBSMS; Dr. Sid Bondurant, Governor's Office

MSDH: Dr. Alfio Rausa, MSDH; Danielle Seale, MSDH; Kathy Farrington, MSDH; Laura Tucker, MSDH; Marilyn Johnson, MSDH; Jameshyia Thompson, MSDH; Dr. Charlene Collier, MSDH/UMMC

Appendix N – Reduce Rates of Chronic Disease

Mississippi has a public health crisis. In 1996, 19.8% of the adult population was obese. By 2013, the obesity prevalence in our population had increased to 35.2%. If the tide is not changed, the percent of obesity in our population will reach over 50% by 2024. Obesity is a root cause of most chronic illnesses. Therefore, it is the role and obligation of Public Health to inform and educate Mississippians about this threat to their health just as it does when there is a threat of pandemics and epidemics. The consequences of obesity are Type 2 diabetes, heart disease, arthritis, stroke, and dementia. Currently in Mississippi, 1.1 million adults and 126,000 children are obese; many of whom already show signs of chronic illnesses. Unnecessary suffering is being caused by obesity, which is mainly driven by sedentary lifestyles and unhealthy eating habits. According to the CDC, 75% of total health care expenditures are associated with treating chronic diseases. If Mississippians reduce their BMI rates to lower levels and achieve an improved status of health, the state could save over $13 billion annually in unnecessary health care costs.

APPENDIX N : Mississippi State Community Scorecard – 2016
PRIORITY AREA #3: Reduce Rates of Chronic Disease

Goal 3.1 Decrease obesity rates through the promotion of healthy lifestyles

Strategic Objective 3.1.1 Increase the percent of youth ages 17 and under who engage in 60 minutes of daily physical activity

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of students in grades 9-12 who achieve 1 hour or more of moderate-and/or vigorous-intensity physical activity daily *Data Source: YRBS*	2013: 25.9%	2019: 28.5%	Establish and/or enhance school, community, and home environments that support physical activity a. Use data collected by MDE to assess implementation of physical activity requirements for the Healthy Students Act among schools, including capacity by May 2017. b. Identify databases that track and monitor the number of youth ages 2 to 5 that engage in physical activity by December 2016. c. Establish 10 new Mayoral Health Councils who will promote: shared use agreements and complete streets by December 2016.	

Organization/ Lead Person: a. Estelle Watts, Office of Healthy Schools, MDE; b. Dr. Lei Zhang, Office of Health Data and Research, MSDH; c. Dr. Victor Sutton, Office of Preventive Health, MSDH

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of municipalities that offer opportunities for organized physical activity *Data Source: Office of Preventive Health*	2013: 25.9%	January 2020: 28.5%	d. Conduct an environmental scan to determine the number and location of shared use agreements, organized sports, and complete streets by December 2016 e. Create and implement an educational awareness campaign to decrease screen time by December 2016	

APPENDIX N : Mississippi State Community Scorecard – 2016
PRIORITY AREA #3: Reduce Rates of Chronic Disease

Goal 3.1 Decrease obesity rates through the promotion of healthy lifestyles

Strategic Objective 3.1.1 Increase the percent of youth ages 17 and under who engage in 60 minutes of daily physical activity

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of municipalities that offer opportunities for organized physical activity *Data Source: Office of Preventive Health*	2013: 25.9%	January 2020: 28.5%	f. Provide four educational messages on physical activity and nutrition in parents and kids magazines to promote awareness of physical activity and nutrition by May 2017	

Organization/ Lead Person: d. Tiffani Grant, Office of Preventive Health, MSDH; e. Liz Sharlot, Office of Communications, MSDH; f. Liz Sharlot, Office of Communications, MSDH

Strategic Objective 3.1.2 Increase the percent of adults ages 18-64 who engage in at least 150 minutes of weekly moderate intensity physical activity

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of adults ages 18 and older who achieve at least 150 minutes a week moderate-intensity aerobic physical activity or 75 minutes a week of vigorous-intensity aerobic activity (or an equivalent combination) *Data source: BRFSS*	2013: 37.4%	2019: 39.0%	Establish and/or enhance community and worksite environments that support physical activity a. Establish 10 new Mayoral Health Councils who will promote: shared use agreements, complete streets, and built environment supports by December 2016 b. Conduct an environmental scan to determine the number and location of shared agreements, organized sports, and complete streets by December 2016 c. Identify, adapt and disseminate, and promote a Congregational Health Ministry Toolkit for Mississippi churches to promote physical activity by December 2016 d. Share and translate Mississippi obesity research findings by December 2016 e. Engage 25 by 25 physician partnership who seek to: reduce physical inactivity by 10% and maintain the prevalence (no further increase) of diabetes and obesity by December 2016	

Organization/ Lead Person: a. Dr. Victor Sutton, Office of Preventive Health, MSDH; b. Tiffani Grant, Office of Preventive Health, MSDH; c. Cassandra Dove, Office of Preventive Health, MSDH; d. Dr. Dan Jones, UMMC Center for Obesity Research; e. Mary Jane Coleman (interim), Office of Health Promotion and Health Equity, MSDH

APPENDIX N : Mississippi State Community Scorecard – 2016
PRIORITY AREA #3: Reduce Rates of Chronic Disease

Goal 3.1 Decrease obesity rates through the promotion of healthy lifestyles

Strategic Objective 3.1.3 Decrease the percentage of students in grades 9-12 who consume fruits and vegetables less than 1 time daily

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of students in grades 9-12 who consume fruit less than 1 time daily Percentage of students in grades 9-12 who consume vegetables less than 1 time daily *Data Source: YRBS*	2013: 51.1% 44.8%	2019: 46.0% 40.3%	Establish and/or enhance school, community, and home environments that support access to healthy food options a. Use data collected by MDE to assess implementation of nutrition requirements for the HSA among schools, including capacity by May 2017 b. Identify databases that track and monitor the consumption of nutritious foods and beverages among youth ages 2 to 5 by December 2016 c. Establish 10 new Mayoral Health Councils who will promote: SNAP benefits at established farmers markets and establishing farmers markets by December 2016 d. Provide resources and tools to school health councils on health food options within all school settings and functions (Farm to School, School Gardens, and Health Concession Stand Options) by December 2016	

Organization/ Lead Person: a. Estelle Watts, Office of Healthy Schools and Office of Child Nutrition, MDE; b. Donna Speed, State Nutritionist, MSDH; c. Dr. Victor Sutton, Office of Preventive Health, MSDH; d. Estelle Watts, Office of Healthy Schools, MDE

Strategic Objective 3.1.4 Decrease the percentage of adults ages 18 and older who report consuming fruits and vegetables less than one time daily

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of adults ages 18 and older who report consuming fruit less than one time daily. *Data source: BRFSS*	2013: 49.9%	2019: 44.9%	Establish and/or enhance community and worksite environments that support access to health food options a. Establish 10 new Mayoral Health Councils who will promote: SNAP benefits and established farmers markets and establishing farmers markets by December 2016	

APPENDIX N : Mississippi State Community Scorecard – 2016
PRIORITY AREA #3: Reduce Rates of Chronic Disease

Goal 3.1 Decrease obesity rates through the promotion of healthy lifestyles

Strategic Objective 3.1.4 Decrease the percentage of adults ages 18 and older who report consuming fruits and vegetables less than one time daily

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percentage of adults ages 18 and older who report consuming vegetables less than one time daily. *Data source: BRFSS*	2013: 30.6%	2019: 27.5%	b. Identify, adapt and disseminate, and promote a Congregational Health Ministry Toolkit for Mississippi churches to promote access to healthy foods by December 2016 c. Conduct healthy food preparation workshops for SNAP and WIC recipients by December 2016	

Organization/ Lead Person: a. Dr. Victor Sutton, Office of Preventive Health, MSDH; b. Cassandra Dove, Office of Preventive Health, MSDH; c. Dr. David Buys, Mississippi State Extension

Status will be reviewed using a stoplight approach as follows:

Red: Not On Target	Yellow: Falling Behind	Green: On Target

COORDINATING CO-CHAIRS: JACQUILYN GERMAN, MSDH;

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Appendix O – Create a Culture of Health

A culture of health starts in communities where healthy choices about what to eat, how much to exercise, or whether to smoke or bicycle or work are easy choices. A culture of health starts where the environments in which we live—our schools, workplaces, and neighborhoods—are health enhancing. All of the outcome measures for goal #1 are centered on private entities and state government entities. One identified gap in the information we have about worksite wellness programs and health promotion activities within Mississippi is city and county governments. Over the next year, the Mississippi Business Group on Health and the Mississippi State Department of Health plan to survey local governments to evaluate their worksite wellness needs. Based on the results of this assessment, we plan to develop actions to expand wellness and health promotion activities into this sector.

APPENDIX O : Mississippi State Community Scorecard – 2016
PRIORITY AREA #4: Create a Culture of Health

Goal 4.1 Improve the culture of health in Mississippi workplaces

Strategic Objective 4.1.1 Increase the number of Mississippi worksites that offer employee wellness programs

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percent of private worksites conducting wellness programs or health promotion activities *Data Source: Mississippi Worksite Survey*	December 31, 2014: 66.6%	December 31, 2019: 82%	a. Promote the Recognized Healthy Workplace Program through multiple channels throughout the state b. Increase the number of applicants to the Healthiest Workplaces Awards by July 2016 c. Share success stories on the MSBGH, MSDH, and MS Business Journal publications and media outlets by August 2016 d. Engage business organizations to promotion and offer learning opportunities on worksite wellness best practices e. Enhance resource kits on the MSDH and MSBGH websites f. Prepare promotional campaign and key messages for media by 9/1/16	

Organization/ Lead Person: a. Murray Harber, MS Business Group on Health; Victor Sutton, MSDH; b. Murray Harber, Victor Sutton; c. Murray Harber, Victor Sutton; d. Murray Harber, Victor Sutton; e. Buddy Daughdrill, MPHA; Murray Harber, MS Business Group on health; f. Victor Sutton, MSDH; Liz Sharlot, MSDH; Murray Harber, MS Business Group on Health; Buddy Daughdrill, MS Public Health Association

APPENDIX O : Mississippi State Community Scorecard – 2016
PRIORITY AREA #4: Create a Culture of Health

Goal 4.1 Improve the culture of health in Mississippi workplaces

Strategic Objective 4.1.1 Increase the number of Mississippi worksites that offer employee wellness programs

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percent of private worksites that provide healthy alternatives in vending machines *Data Source: Mississippi Worksite Survey*	December 31, 2014: 41.7%	December 31, 2019: 56.7%	g. Present package at MEC annual conference and other groups: MEC Spring 2016, SHRM May 2016, MBGH October 2016, MASI September 2016, MAPA September 2016. h. Identify appropriate speakers/champion by July 2016 i. Advocate for two policies that promote worksite wellness	

Organization/ Lead Person: g. Well-respected employer (TBD); h. Rita Wray; Murray Harber, MS Business Group on Health; Victor Sutton, MSDH; i. Kay Henry, MSDH; Victor Sutton, MSDH; Murray Harber, MS Business Group on Health

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percent of private worksites that have formal employee wellness policies *Data Source: Mississippi Worksite Survey*	December 31, 2014: 30.8%	December 31, 2019: 40.8%	j. Work with AHA to promote healthy vending programs to worksite. K. Create sample wellness policies to promote to employers	
Percent of private worksites that offer lactation support for breastfeeding mothers, including time and a private, sanitary space to pump milk at work *Data Source: Mississippi Worksite Survey*	December 31, 2014: 36.6%	December 31, 2019: 46.6%		

APPENDIX O : Mississippi State Community Scorecard – 2016
PRIORITY AREA #4: Create a Culture of Health

Goal 4.1 Improve the culture of health in Mississippi workplaces

Strategic Objective 4.1.1 Increase the number of Mississippi worksites that offer employee wellness programs

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percent of private worksites reporting that more than 50% of employees participate in a health and wellness program in the past 12 months *Data Source: Mississippi Worksite Survey*	December 31, 2014: 55.8%	December 31, 2019: 65.8%	j. Work with AHA to promote healthy vending programs to worksite. K. Create sample wellness policies to promote to employers	

Organization/ Lead Person: j. Katherine Bryant, Victor Sutton; k. Murray Harber

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Number of state agencies and other state entities classified as comprehensive or better using the CDC Health Score Card *Data Source: MSDH Office of Preventive Health*	December 31, 2016: 9	December 31, 2017: 20	a. SEWP in collaboration with SSEHIP provides four trainings per year to improve application of best practices in workplace wellness. b. Share success stories to legislature, state leadership, and state employer units MSBGH and SEWP work with the MML and MAS to promote Recognized Healthy Employer Program	
Number of Cities and Counties that achieve Recognized Healthy Employer status *Data Source: MS Business Group on Health*	December 31, 2016: No Baseline	December 31, 2017: 15		

Organization/ Lead Person: a. Victor Sutton; b. Dr. Mary Currier, Victor Sutton; c. Murray Harber/ Victor Sutton

APPENDIX O : Mississippi State Community Scorecard – 2016
PRIORITY AREA #4: Create a Culture of Health

Goal 4.2 Improve culture of health in Mississippi in academic settings

Strategic Objective 4.2.1 Increase the percent of school health councils in (full compliance) with composition requirements

Measure	Baseline	Target	Critical Actions Intervention Strategies	Status R/Y/G
Percent of health councils that have members that are child nutrition directors, health professionals, and students *Data Source: Center for Mississippi Health Policy*	2011-2012 School Year: 18%	2017 – 2018 School Year: 25%	a. Provide messages to MDE Office of Healthy Schools for school board training by September 2015 b. Provide message to school nurses by September 2016 c. Engage health professional organizations to determine who is interested in serving on school health councils at annual meetings in 2016-2017 d. Map healthcare professionals by December 2016 e. Provide information to parent organizations by August 2016 f. Share information with school administration by August 2016	

Organization/ Lead Person: a. Estelle Watts, MDE OHS; b. Estelle Watts, MDE OHS; c. Buddy Daughdrill, MPHA; Kay Henry, MSDH; d. Larry Smith, MSDH Office of Performance Improvement; e. Christine Philley, MDE OHS; f. Christine Philley, MDE OHS

Status will be reviewed using a stoplight approach as follows:

Red: Not On Target	Yellow: Falling Behind	Green: On Target

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Appendix G: 2015-2019 Mississippi Consolidated Plans for Housing and Community Development

2015-2019 MISSISSIPPI CONSOLIDATED PLAN

DRAFT REPORT FOR PUBLIC REVIEW
MARCH 30, 2015

Prepared by:

2015 – 2019 Mississippi Consolidated Plan for Housing and Community Development

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Draft Report for Public Review
March 30, 2015

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I. EXECUTIVE SUMMARY

A. INTRODUCTION

In 1994, the U.S. Department of Housing and Urban Development (HUD) issued new rules consolidating the planning, application, reporting and citizen participation processes for four formula grant programs: Community Development Block Grants (CDBG), Home Investment Partnerships (HOME), Emergency Shelter Grants (ESG) and Housing Opportunities for Persons with AIDS (HOPWA). The new single-planning process was intended to more comprehensively fulfill three basic goals: to provide decent housing, to provide a suitable living environment and to expand economic opportunities. It was termed the *Consolidated Plan for Housing and Community Development*.

According to HUD, the Consolidated Plan is designed to be a collaborative process whereby a community establishes a unified vision for housing and community development actions. It offers entitlements the opportunity to shape these housing and community development programs into effective, coordinated neighborhood and community development strategies. It also allows for strategic planning and citizen participation to occur in a comprehensive context, thereby reducing duplication of effort.

As the lead agency for the Consolidated Plan, the Mississippi Development Authority (MDA) hereby follows HUD's guidelines for citizen and community involvement. Furthermore, it is responsible for overseeing these citizen participation requirements, those that accompany the Consolidated Plan and the Community Development Block Grant (CDBG), HOME Investment Partnerships (HOME) and the Emergency Shelter Grant (ESG) programs, as well as those that complement the processes already at work in the state. The state of Mississippi is also a recipient of the Housing Opportunities for Persons with AIDS (HOPWA) Program, with the Mississippi Department of Health administering that particular part of the Consolidated Plan

PURPOSE OF THE CONSOLIDATED PLAN

The *2015 – 2019 Mississippi Consolidated Plan for Housing and Community Development* is the comprehensive five-year planning document identifying the needs and respective resource investments in satisfying the state's housing, homeless, non-homeless special needs populations, community development and economic development needs.

GOALS OF THE CONSOLIDATED PLAN

The goals of the State are to provide decent housing, a suitable living environment and expanded economic opportunities for the state's low- and moderate-income residents. The State strives to accomplish these goals by maximizing and effectively utilizing all available funding resources to conduct housing and community development activities that will serve the economically disadvantaged residents of the state. By addressing need and

creating opportunity at the individual and neighborhood levels, the State hopes to improve the quality of life for all residents of the state. These goals are further explained as follows:

- *Providing decent housing* means helping homeless persons obtain appropriate housing and assisting those at risk of homelessness; preserving the affordable housing stock; increasing availability of permanent housing that is affordable to low- and moderate-income persons without discrimination; and increasing the supply of supportive housing.
- *Providing a suitable living environment* entails improving the safety and livability of neighborhoods; increasing access to quality facilities and services; and reducing the isolation of income groups within an area through integration of low-income housing opportunities.
- *Expanding economic opportunities* involves creating jobs that are accessible to low- and moderate-income persons; making mortgage financing available for low- and moderate-income persons at reasonable rates; providing access to credit for development activities that promote long-term economic and social viability of the community; and empowering low-income persons to achieve self-sufficiency to reduce generational poverty in federally-assisted and public housing.

B. MISSISSIPPI BACKGROUND AND TRENDS

DEMOGRAPHIC PROFILE

Between 2000 and 2013, the population in non-entitlement areas of Mississippi increased by over 167,000 people, starting at 2,451,801 in 2000 and ending at an estimated 2,619,259 people by 2013. Over the course of these thirteen years, total population growth in these areas equaled 6.8 percent. In 2010, the majority of the population, 62.2 percent, was white, although this group did not keep pace with the average growth rate for the state. The second largest racial group in 2010 was black at 34.1 percent, followed by "other," two or more races, Asian, and American Indian. As for ethnicity, persons of Hispanic descent comprised 2.6 percent of the population. Geographic analysis of racial and ethnic data showed that certain areas throughout the state have higher concentrations of racial or ethnic minorities, including areas with disproportionate share of black and Hispanic households. The two fastest growing age groups in non-entitlement areas of Mississippi were those aged 55 to 64 and those aged 65 and older, indicating an aging population. Some 23.6 percent of the population aged 5 or older in non-entitlement areas of Mississippi had one or more disabilities at the time of the 2000 census.

ECONOMIC PROFILE

From 1990 through 2013, the labor force in non-entitlement areas of Mississippi, defined as people either working or looking for work, rose from about 1,008,500 persons to 1,127,192 persons. Since the mid-1990s Mississippi's unemployment rate remained fairly steady with the national rate, both spiking in 2009 before lowering again. In 2013 the non-

entitlement areas of Mississippi's unemployment rate was at 8.5 percent, after having fallen from close to 11 percent in 2010. In 2013, the real average earning per job in the state of Mississippi was $42,812, and real per capita income was $34,478, but both of these figures were below national averages. In non-entitlement areas of Mississippi the poverty rate in 2013 was estimated to be 21.9 percent with 553,322 persons living in poverty. Persons in poverty were concentrated in select census tracts across the state.

MISSISSIPPI HOUSING MARKET

In 2000, the Mississippi had 1,161,953 total housing units. Since that time, the total housing stock increased each year, reaching 1,283,165 units in 2013. According to the American Community Survey in 2013, Mississippi's housing stock included 794,855 single family units, and 188,292 mobile home units. Of the 1,109,503 housing units counted in non-entitlement areas of Mississippi in the 2010 census, 975,525 units were occupied, with 703,764 counted as owner-occupied and 271,761 counted as renter-occupied. The vacancy rate for non-entitlement areas of the state was 12.1 percent in 2010, an increase of 35.3 percent since 2000. The construction value of single-family dwellings generally increased from 1980 through 2013, reaching close to $160,000.

HOUSING AND HOMELESS NEEDS ASSESSMENT

There were 223,992 households below 80 percent MFI with housing need in 2011 throughout non-entitlement areas of Mississippi. In addition, large families and several racial/ethnic groups face disproportionate shares of housing problems.

Results from the 2015 Housing and Community Development Needs Survey showed that first time home-buyer assistance, homeowner housing rehabilitation and energy efficient retrofits were considered to have a high need for funding, along with rental housing for very low-income households.

Homeless needs in the non-entitlement area of the state are handled by three Continuum of Care organizations. The compilation from two CoCs, the Gulfport/Gulf Coast Regional CoC and the Balance of State CoC were used to assess the homeless needs for this Plan. A count of the homeless population showed that more than 1,380 persons were homeless in 2014, including 355 persons in homeless families with children and 106 chronically homeless persons.

Non-homeless special needs populations in the state include the elderly and frail elderly, persons living with disabilities, persons with alcohol or other drug addiction, victims of domestic violence, and persons living with HIV and their families. These populations are not homeless, but are at the risk of becoming homeless and therefore often require housing and service programs. The needs of the special needs groups are relative to the programs currently provided. The Housing and Community Development Needs Survey indicated the highest need for the frail elderly, veterans, the elderly, persons with severe mental illness and the disabled.

Community Development Needs Assessment

The 2014 Housing and Community Development Survey also provided data on perceived community development needs. Respondents indicated that funding should be primarily devoted to human service, followed by housing, water systems, economic development, infrastructure, and public facilities. Attraction of new businesses, expansion of existing businesses and provision of job training were all top priorities in terms of economic development. Street and road improvements, sewer system improvements and water system capacity improvements were high priorities for infrastructure development. Respondents noted a high need for youth centers, healthcare facilities and park and recreation centers. In addition, there is a high need for healthcare, employment and senior services.

A. 2015-2019 Housing and Community Development Plan Summary

The following list presents the overriding strategies and goals of the Mississippi Five-Year Consolidated Plan for Housing and Community Development, including selected performance criteria associated with each strategy and goal. Furthermore, there may be a need to direct such housing resources by use of project selection criteria, which may be updated annually, based upon year-to-year need and local circumstances.

The strategies the state will pursue over the next five years are as follows:

Housing Strategies:

1. Enhance the quality affordable housing through new construction and substantial rehabilitation
2. Preserve the affordable housing stock through rehabilitation
3. Enhance availability of affordable housing by promoting homeownership
4. Promote Homeownership for the Disabled with the Disabled Housing Initiative

Community Development Strategies:

1. Encourage economic development opportunities that retain and expand existing businesses and attract new businesses in Mississippi
2. Enhance the quality of Mississippi's public facilities

Homelessness and HIV Strategies:

1. Provide for emergency shelters
2. Provide for rapid re-housing assistance for those at risk of homelessness

3. Enhance homeless prevention and HMIS
4. Enhance housing and services for persons with HIV/AIDS

Each of the priorities identified above, as well as the objectives consistent with each strategy are discussed in greater detail below. Performance measurement criteria are presented at the end of each priority narrative.

HOUSING STRATEGIES

The population throughout Mississippi continues to have unmet housing needs. The MDA is striving to answer the call for affordable housing throughout the state. Through various means, the State will encourage the increased availability, accessibility and sustainability of decent affordable housing for Mississippians.

1. Enhance quality affordable housing through new construction and substantial rehabilitation

The State will promote the construction of new multi-family housing and substantial renovation through CHDO set-asides

Outcome: Availability/Accessibility

Objective: Provide Decent Affordable Housing

Annual Funding: HOME $1,040,000

Five-Year Goal:

Rental Units Added 220 Households Housing Units

2. Preserve the affordable housing stock through Rehabilitation

The State will promote provide funds for homeowner rehabilitation to eliminate substandard owner-occupied housing for very-low and low income citizens by rehabilitating safe, decent and affordable housing.

Outcome: Sustainability

Objective: Provide Decent Affordable Housing

Annual Funding: HOME $3,427,477

Five-Year Goal:

Homeowner Housing Rehabilitated 290 Housing Units

3. Enhance availability of affordable housing by promoting homeownership

The State will promote homeownership through funding homeowner assistance, including down-payment assistance and closing costs.

Outcome: Affordability

Objective: Provide Decent Affordable Housing

Annual Funding: HOME $1,000,000

Five-Year Goal:

Direct Financial Assistance to Homebuyers 785 Households Assisted

4. Promote Homeownership for the Disabled with the Disabled Housing Initiative

The State will promote homeownership for disabled households through the Disabled Housing Initiative: Home of Your Own (HOYO) Homebuyer Assistance

Outcome: Affordability

Objective: Provide Decent Affordable Housing

Annual Funding: HOME $450,000

Five-Year Goal:

Direct Financial Assistance to Homebuyers 350 Households Assisted

COMMUNITY DEVELOPMENT STRATEGIES

The State of Mississippi is committed to helping to encourage economic growth and improve the quality of public facilities in the state to meet the needs of residents.

1. Encourage economic development opportunities

The State will encourage economic development opportunities that retain and expand existing businesses in the State of Mississippi, as well as retain or add new jobs for low to moderate income residents.

Outcome: Sustainability

Objective: Create Economic Opportunities

Annual Funding: CDBG $11,000,000

Five-Year Goal:

Jobs created/retained 3,100 Jobs

2. Enhance the quality of Mississippi's public facilities

The State will fund local units of government and other entities to improve public facilities.

Outcome: Sustainability

Objective: Create Suitable Living Environment

Annual Funding: CDBG $11,291,271

Five-Year Goal:

Public Facility or Infrastructure Activities other than Low/Moderate Income Housing Benefit 387,500 households assisted

HOMELESSNESS AND HIV STRATEGIES

The State of Mississippi is committed to working towards reducing and ultimately ending homelessness within the State. MDA will commit ESG funds to combat homeless and provide for persons who are homeless or are at risk of homelessness. The State is also committed to meeting the needs of persons with HIV/AIDS and their families. The State will dedicate HOPWA resources to meet the housing and supportive service needs of this population.

1. Provide for emergency shelters

The State will provide financial support for emergency shelters that serve the homeless population throughout the State.

Outcome: Availability/accessibility

Objective: Provide decent affordable housing

Annual Funding: ESG $900,000

Five-Year Goal:

Homelessness Prevention 18,250 Persons Assisted

2. Provide for rapid re-housing assistance for those at risk of homelessness

The State will provide for rapid re-housing assistance for homeless persons in the State of Mississippi.

Outcome: Affordability

Objective: Provide decent affordable housing

Annual Funding: ESG $640,000

Five-Year Goal:

Rapid Re-housing	1,250 Households Assisted

4. Enhance homeless prevention activities and HMIS

The State will provide support, including services and outreach for persons at imminent risk of becoming homeless

Outcome: Sustainability

Objective: Create Suitable Living Environments

Annual Funding: ESG $557,444

Five-Year Goal:

Homeless Prevention	500 Persons Assisted

5. Enhance housing and services for persons with HIV

The State will enhance the housing and services available to persons with HIV/AIDS and their families through the HOPWA program. HOPWA program components include STRMU, TBRA, short-term supportive housing, master leasing, permanent housing placement, housing information, supportive services, resource identification and technical assistance.

Outcome: Availability/Accessibility

Objective: Create Suitable Living Environments

Annual Funding: HOPWA

Five-Year Goal:

Homelessness Prevention	1,500 Persons Assisted
HIV/AIDS Housing Operations	2,025 Households Housing Units

II. Consolidated Plan Development Process

A. Introduction

In 1994, the U.S. Department of Housing and Urban Development issued new rules consolidating the planning, application, reporting and citizen participation processes for four formula grant programs: Community Development Block Grants (CDBG), Home Investment Partnerships (HOME), Emergency Solutions Grants (ESG) and Housing Opportunities for People with AIDS (HOPWA). Termed the *Consolidated Plan for Housing and Community Development*, the new single-planning process was intended to more comprehensively fulfill three basic goals:

1. *Provide decent housing,* which involves helping homeless people obtain appropriate housing, retaining the affordable housing stock, increasing the availability of permanent affordable housing for low-income households without discrimination and/or increasing supportive housing to assist persons with special needs.
2. *Provide a suitable living environment*, which means improving the safety and livability of neighborhoods, including the provision of adequate public facilities; reducing isolation of income groups within communities through distribution of housing opportunities for persons of low income; revitalization of deteriorating or deteriorated neighborhoods; restoring and preserving natural and physical features with historic, architectural, and aesthetic value; as well as conserving energy resources.
3. *Expand economic opportunities*, which emphasizes job creation and retention, providing access to credit for community development, and assisting low-income persons to achieve self-sufficiency in federally-assisted and public housing.

The Consolidated Plan is a three-part process that comprises:

1. Development of a five-year strategic plan;
2. Preparation of annual action plans; and
3. Submission of annual performance and evaluation reports.

The first element referred to above, the strategic plan, also has three parts:

1. A housing market analysis;
2. A housing, homeless, and community development needs assessment; and,
3. Establishment of long-term strategies for meeting the priority needs of the state.

HUD asks that priority objectives be built upon specified goals that flow from quantitative and qualitative analysis of needs identified in the five-year planning process. Program funding is ensured by completing these documents on time and in a format acceptable to HUD.

Furthermore, the Consolidated Plan is designed to be a collaborative process whereby non-entitlement areas of the state establish a unified vision for community development actions.

It offers these areas the opportunity to shape housing and community development programs into effective and coordinated housing and community development strategies. It also creates the opportunity for strategic planning and citizen participation to take place in a comprehensive context and to reduce duplication of effort throughout Mississippi.

Thus, the Consolidated Plan functions as:

- A planning document for the non-entitlement areas of Mississippi that builds on a participatory process among citizens, organizations, businesses and other stakeholders;
- A submission document for federal funds under HUD's formula grant programs;
- A strategy document to be followed in carrying out HUD's programs; and
- A management tool for assessing performance and tracking results.

The 2015-2019 Mississippi Consolidated Plan for Housing and Community Development is the comprehensive five-year planning document identifying needs and respective resource investments in satisfying the state's housing, homelessness, non-homeless special population, community development and economic development needs.

B. Lead Agency

The Mississippi Development Authority was lead agency for the development of the Consolidated Plan. Therefore, the MDA has followed the federal guidelines about public involvement, evaluation of quantitative and qualitative data, needs assessment, strategy development, priority setting, and the formulation of objectives. Mississippi's Consolidated Plan for 2015-2019 was prepared in accordance with CFR Sections 91.100 through 91.230 of HUD's Consolidated Plan regulations, applicable to state government.

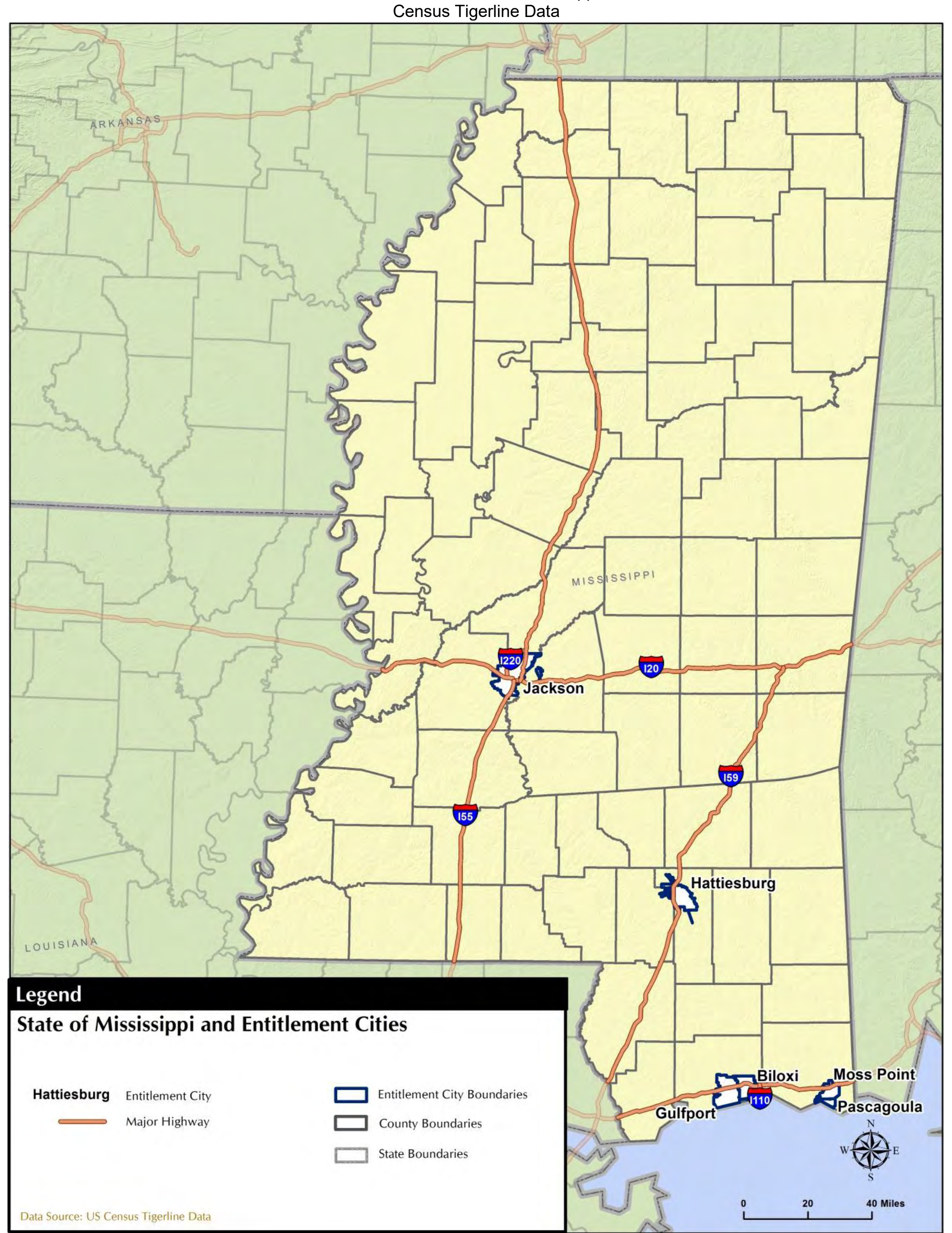
On March 13, 2015, the Governor of Mississippi designated the lead agency for the Consolidated Plan and grant programs to be the Mississippi Home Corporation, effective with the 2015 allocations. Mississippi Home Corporation will be responsible for administering HOME, ESG and HOPWA grants. MDA will be responsible for administering CDBG. This change will be implemented pending the public input process and HUD approval. The letter outlining the Governor's changes in lead agency is attached to this Plan in Appendix A, following the Citizen Participation Plan.

C. Geographic Area

Mississippi's Consolidated Plan covers the non-entitlement areas of the state. The entitlements in Mississippi include Biloxi, Gulfport, Hattiesburg, Jackson, Moss Point and Pascagoula. These communities also receive Community Development Block Grant (CDBG), HOME Partnership (HOME), or Emergency Shelter Grant (ESG) funding directly from HUD. While these geographic areas are responsible for preparing their own Consolidated Plans, they may not receive resources as all funding sources as does the State of Mississippi. For example, the Mississippi Department of Health is the statewide administering agent for the Housing Opportunities for Persons With AIDS (HOPWA) program. Still, for the purposes of portraying housing and community development needs as accurately as possible, these communities were eliminated from several sources of data in this document. Consequently, the geographic areas most often addressed throughout this Consolidated Plan are represented in Map I.1, on the following page.

The State has two HOME Entitlement Cities: the City of Jackson and City of Hattiesburg; and a Consortium that includes all of Harrison County that have been designated by HUD as Participating Jurisdictions (PJs). These PJs are not eligible for State allocation funding, however, the only exception to this will be those associated with the Mississippi Health Care Zone Act Initiative.

Map I.1
Mississippi
Non-Entitled Areas of Mississippi
Census Tigerline Data



D. ORGANIZATIONAL STRUCTURE AND COORDINATION

Mississippi will meet its responsibility to provide decent and affordable housing, and the State will aid in the development of viable communities with suitable living environments and expanded economic and community development opportunities. This will be done with the help and support of a network of public institutions, nonprofit organizations, and private industries, of which many will be discussed below. The State is fortunate to have a strong working relationship with and between its service agencies.

In recognizing the gaps that could develop between Jackson-based agencies and its five field offices throughout the non-entitlement areas of the state, the MDA is continuing its efforts to build area-wide partnerships and alliances to gain the maximum impact from limited resources. The MDA, in cooperation with Planning and Development Districts, the Mississippi Development Authority, the Mississippi Mental Health Department, and other agencies of state government continues to initiate meetings, workshops and continuing education programs to provide another avenue of making the public aware of programs and funds that are available. The following presents a selected overview of these agencies and their programs.

Mississippi Development Authority (MDA). By serving as the lead State agency for the Consolidated Plan, the MDA has initiated a cooperative effort with other State agencies and will coordinate Consolidated Plan activities with those agencies and units of local government. Local jurisdictions have been the primary implementing arm of federal programs administered by MDA and will continue to assume responsibilities in carrying out activities addressed in the Consolidated Plan. Some programs administered by the Financial Resources Division of the MDA include the Minority Business Enterprise Loan, Mississippi Economic Impact Authority, and the Mississippi Access Road Program.

Mississippi State Department of Health (MSDH). This department oversees many programs including Housing Opportunities for Persons with AIDS (HOPWA), Drinking Water Systems Emergency Loan Fund, providing low-interest loans for emergency improvements to water systems, and the Drinking Water Systems Improvements Revolving Loan Fund for construction, renovation, rehabilitation, and repair of water systems. The Mississippi Department of Health provides several services to allow individuals to remain in their community. They operate halfway houses, group homes, and supervised housing in locations across the state. These varying facilities allow them to offer the appropriate level of support based on an individuals needs.

Mississippi Home Corporation (MHC). The Mississippi Home Corporation (MHC) is a public-purpose corporation created by the state of Mississippi in 1990 to finance the acquisition, construction and rehabilitation of residential housing for low- to moderate-income persons. MHC will serve as lead agency to administer CDBG, HOME and ECG funds beginning July 1, 2015. MHC offers low-interest mortgages for first-time homebuyers through the Mortgage Revenue Bond Program, Mortgage Credit Certificates that lower the homebuyer's federal tax liability, and loans for down payment and closing costs. MHC

supports homebuyer education and credit repair counseling services for potential homebuyers. MHC operates the Housing Tax Credit Program and a multi-family bond program, which support the development of rental housing. MHC offers development and construction financing programs for site acquisition, site development and construction of housing. MHC provides technical assistance to nonprofit housing development organizations. The MHC offers several other housing related activities, as follows:

Mississippi Affordable Housing Development Fund. The priorities of this program are projects that address elderly housing, involve a combination of nonprofit and for-profit partners and investors, or empower low- to moderate-income families through resident management, self-help housing or self-sufficiency activities designed to increase household incomes. It provides loans at interests rates as low as 3.0 percent and of amounts up to $500,000. Projects utilizing this financing must meet several criteria such as targeting rental units to families earning 60.0 percent or less of area median gross income and rent or mortgage payments comprising no more than 30.0 percent of annual household income.

Down Payment Assistance Program. Available statewide, this program provides up to 3.0 percent of the loan amounts in down payment assistance to low- to moderate-income first-time homebuyers. Applicants must meet credit eligibility requirements, have an acceptable credit profile and complete a homebuyer education class. In addition, the home mortgage must be made through a Mississippi Development Authority participating lender.

Home of Your Own Project. This is a program of the Institute of Disability Studies at the University of Southern Mississippi. The purpose of the Home of Your Own Project is to assist persons with disabilities in locating financial assistance, counseling, and other support in purchasing and maintaining their own homes. There are three major criteria for participation in the program: individuals must be disabled as defined by the Americans with Disabilities Act, their income must be sufficient to make monthly mortgage payments, and they should have a good or improving credit score or otherwise prove credit worthiness.

Habitat Loan Purchase Program. The Habitat Loan Purchase Program was created to provide funding for affiliates of Habitat for Humanity in Mississippi. The Mississippi Development Authority purchases loans from the Habitat Affiliate and in turn the Habitat Affiliate is responsible for the construction and financing of a home for income eligible families. Borrowers must earn 80.0 percent or below of the state median income and cannot have owned a home in the three years previous to receiving the loan. The properties involved must be single-family homes or town homes, and the homeowners must be granted a loan at 0.0 percent interest.

Mortgage Credit Certificate. Receiving a Mortgage Credit Certificate allows a potential homeowner to reduce the amount of federal tax they pay and therefore frees up additional income to help qualify for a mortgage. The tax credit is equal to 25 percent of

the annual interest paid on a single-family conventional home mortgage and 40 percent of the annual interest on mortgages for manufactured single-family homes. These tax credits cannot exceed $2,000 per year or the applicants' annual federal income tax liability after all other credits and deductions have been taken into account. Persons who are eligible for this program are first-time homebuyers or persons who have not had a principal interest in a home for three years and whose income does not exceed limits set for each county. There are "Target Areas" throughout the state where the first-time homebuyer requirement does not apply and the income limits are generally higher. Additionally, the property must be owner occupied, the primary residence of the person receiving the tax credits and the mortgage must have a 30-year term.

Foreclosure Prevention. The Mississippi Development Authority received $85,150 to continue its Foreclosure Mitigation Counseling Program through June 2010. The Mississippi Development Authority is collaborating with Neighborworks America to provide foreclosure mitigation counseling services through a network of approved counseling agencies. The services are free to the public.

Housing Tax Credit Program. The Housing Tax Credit Program supports the construction and rehabilitation of rental housing for low- to moderate-income households. Tax Credits are awarded to developers through a competitive process. The Tax Credit provides a dollar-for-dollar reduction in the owner's tax liability. Owners sell their Tax Credits to investors, raising equity funds to use in constructing and operating the rental developments. Over the ten-year period during which the Tax Credit is claimed, the owner may receive tax credits equaling up to 70.0 percent of the costs of constructing or rehabilitating rental units. Approximately 1,000 new and rehabilitated rental units are produced annually in Mississippi through this program. Mississippi Development Authority administers the Housing Tax Credit Program for Mississippi.

Mississippi Single-Family Residential Housing Fund Program. This program was established by the state of Mississippi in collaboration with Fannie Mae, the Mississippi Development Authority and the Mississippi Development Authority. The goal of the program is to provide affordable housing by offering low-interest financing for the construction of low- to moderate-income single-family residential housing units. Many different types of borrowers are eligible for this program, including nonprofit corporations, for-profit corporations, public housing authorities, planning and development districts, and limited equity cooperatives. Eligible borrowers can apply for up to $750,000 of financing, and every twelve months the line of credit is re-evaluated and can be renewed. To be eligible under this program homebuyers' income must not exceed 115 percent of the area median income limits established by the Mississippi Mortgage Revenue Bond Program.

Home Investment Partnerships Program (HOME). The HOME program now provides a large portion of the housing initiatives in the state. The MDA's Community Services Division (CSD) manages the HOME program, which provides funds for construction of

needed rental housing, homeowner rehabilitation, homebuyer assistance (as administered by the Mississippi Development Authority), and rental assistance.

Community Development Block Grant Program (CDBG). The CSD also manages the CDBG program, which is used to finance economic development and public facilities in Mississippi. This program helps eliminate gaps that occur in the delivery of programs and services when the local unit of government cannot supply funding.

Emergency Shelter Grants (ESG). The ESG program is designed to provide assistance to eligible emergency shelters. ESG funds are also used to provide assistance to special needs groups in the state.

Housing Revolving Loan Program. Administered by the CSD, this program was created in 1999 by the Mississippi legislature. A pool of funds is used to provide an additional resource to further the provision of decent and affordable housing, specifically single-family housing.

Mississippi Business Finance Corporation (MBFC). The MBFC administers a number of different finance programs that are designed to assist businesses in locating or expanding within the state of Mississippi. MBFC collaborates with other existing public organizations and private groups to stimulate both industrial and commercial development. The primary financing tool utilized is industrial revenue bonds. Bond proceeds can be used for construction, expansion or improvement of machinery, real property or equipment. Industries that are eligible to receive benefits of this program include manufacturers, research and development facilities, warehouse and distribution centers, telecommunication and data processing facilities, and national or regional headquarters.

Rural Impact Fund (RIF). This is a state-funded program managed by the CSD that provides funds to local units of governments to assist and promote business and economic development in rural areas by providing grants or loans to rural communities and loan guarantees to rural businesses. Eligible projects financed with RIF must be publicly owned, with the exception of loan guarantees to rural businesses.

Small Municipals and Limited Population County Grant Program (SMLPC). A state-funded program that is managed by the CSD and provides funds for publicly owned infrastructure for community-based projects. Funding from this program can be used by small municipalities and counties to assist with public facilities and infrastructure needs.

Development Infrastructure Grant Program (DIP). This is a state-funded program managed by the CSD that provides funds for publicly owned infrastructure. Funding from this program can be used by municipalities and counties to assist with the location or expansion of businesses. Usage of the funds must be directly related to the construction, renovation or expansion of industry.

Appalachian Regional Commission (ARC). Through ARC, which is housed in the MDA, grants are provided to 24 counties in the northeastern section of Mississippi. Grants assist

eligible governments in areas including education, health, infrastructure, leadership, water, sewer, access roads and economic development.

Delta Regional Authority (DRA). Through DRA, grants are provided to 45 counties in the delta region of Mississippi. Grants assist eligible governments in areas including education, health, infrastructure, water, sewer, access roads and economic development.

Capital Improvements Revolving Loan Program (CAP). This is a State-funded program managed by the CSD, providing matching funds for community development activities. Low-interest loans are made available to counties and municipalities for construction or rehabilitation of water and sewer facilities, drainage facilities, and fire protection services, as well as for construction, purchase, or renovation of buildings for economic development purposes.

Freight Rail Service Projects Revolving Loan Program (RAIL). This program makes loans to counties and municipalities to finance freight rail service projects in Mississippi. The RAIL program, which is managed by the CSD, provides loans for freight rail service facilities.

Momentum Mississippi. Created in 2004, Momentum Mississippi seeks to help formulate a long-range economic development plan for the State. The broad-based group has members from every region of the state who together work to build the partnerships necessary to create more and better jobs in Mississippi.

Cool Communities. This program provides for landscaping and roof topping designs for energy efficient housing in Mississippi.

Energy Audits. Energy auditors are certified by the Energy Division, and these auditors provide advice and counsel for housing construction and rehabilitation in the state.

Mississippi Department of Human Services (MDHS). The MDHS helps with the Low-Income Home Energy Assistance Program, which provides one-time annual grants to low-income people to help pay their utility bills. The MDHS also helps with programs such as Child Care, employment workshops, and the Summer Youth Jobs Placement program.

Mississippi Department of Mental Health. This agency operates primary care facilities for the chronically mentally ill and alcohol- and chemically-dependent individuals. The agency also is a licensing and regulatory agency for other facilities and is involved in designing strategies for use of federal housing funds targeted at the State's special needs population.

Department of Rehabilitation Services. This agency serves the special needs population of Mississippi, addressing the needs of the physically disabled, as well as blind and deaf persons. The agency's main responsibility related to housing is the provision of transitional housing.

Federal Agencies. Through coordination with federal agencies, Mississippi has been able to leverage its dollars to provide greater housing and community development assistance across the state. One partner has been the Department of Housing and Urban Development (HUD), which administers many programs that provide assistance to low-income persons, including the HOPE programs, Section 8, Youthbuild Self-Housing Opportunities, Elderly Training, and Section 215 programs. Rural Development, a part of the USDA, and Rural Utilities Service are other examples of programs supported by the USDA in Mississippi. The Economic Development Administration (EDA) provides financial and technical assistance to aid in the economic development of areas with high unemployment, low income, or sudden and severe economic distress.

Nonprofit Organizations. A variety of nonprofit organizations undertake housing development or provide housing services in Mississippi. Nonprofits play a vital role in affordable housing in the state, and increasing the skills and capacity of existing nonprofits, as well as creating such organizations where none now exist, is a goal for the State. Nonprofits often reflect partnerships between churches, local businesses, financial institutions, local governments and families. Habitat for Humanity has a number of chapters in the state, using volunteers to raise funds and construct homes. Public Housing Authorities provide traditional public housing and rental assistance, and are sometimes active in homeless services. Community Housing Development Organizations (CHDOs) are private nonprofit organizations that provide decent affordable housing for lower-income people. The State, in conjunction with the Mississippi Development Authority, has provided training to nonprofits seeking to become CHDOs.

Private Industry. Throughout Mississippi, private industry provides assistance for the housing needs of very-low- and low-income people. There is cooperation and coordination across the state to assist in providing assistance to those who have a need. Private industries such as power companies, gaming industries and other large corporations, have provided help with strategies to provide housing. Housing developers have also played key roles. The Mississippi Homebuilders Association has been instrumental in passage of legislation for the provision of housing.

D. Consultation Activities

As part of the consolidated planning process, the lead agency must consult with a wide variety of organizations in order to gain understanding of the housing and community development stage. This Consolidated Plan represents a collective effort from a broad array of entities in Mississippi, ranging from advocacy groups for the disabled to economic development organizations. Private, non-profit and public organizations, non-entitled communities, county governments, Continuum of Care organizations, the Mississippi Department of Health and the Mississippi Development Authority were contacted through several means, including internet surveys, e-mail correspondence, and face-to-face interactions. These persons were solicited to discuss housing and community development needs in Mississippi, including the ranking of those needs and activities that the MDA

might consider in better addressing needs throughout the state. Further, individuals were asked to provide additional insight into prospective barriers and constraints to addressing housing and community development needs in Mississippi.

E. Efforts to Enhance Citizen Involvement

Public involvement was a key step to helping determine the housing and community development needs in Mississippi. Public involvement was begun in January 2015, extending over a period of several months. Two key steps were taken in the involvement process, an online survey and public input meetings.

One was the implementation of the 2015 Housing and Community Development survey. The survey was designed to draw information from experts and community members alike about the various housing and community development needs throughout the state. The Survey was available online and was available in both English and Spanish. Results from the survey are presented throughout this document and helped to guide the statewide priorities established in this Plan.

Three additional public input meetings were held throughout the state of Mississippi. One was held March 3 in Flowood, MS. A second meeting was held on March 4 in Marks, MS. The third public input meeting was held on March 5 in McComb, MS. Transcripts from the three meetings are included in Appendix E on this Plan. Responses helped shape the priorities and strategies developed in this Plan.

Additional citizens outreach included Newspaper advertisements, Social Media posting of Facebook and Twitter and statewide CSD instructions announcing the availability of the online survey. The Mississippi Economic Development Council also assisted the state with outreach by forwarding the online survey to all economic development council members.

F. Public Hearings and Approval Processes

The draft report for public review was released on March 31, 2015, which initiated a 30-day public review period. A public presentation of the draft was made in Jackson on April 7, 2015. Following the close of the public review period and any final modifications to the Consolidated Plan, the MDA anticipates submitting the plan to HUD on or before May 15, 2015.

Plan Evaluation

The State of Mississippi reports past performances to HUD through the Consolidated Annual Performance and Evaluation Report. For detail past performance reports, please go to: www.mississippi.org/csd

III. DEMOGRAPHIC AND ECONOMIC PROFILE

A. INTRODUCTION

The following narrative examines a broad range of socioeconomic characteristics including population, race and ethnicity, disability, poverty and unemployment rates. Data were gathered from the U.S Census Bureau, the Bureau of Economic Analysis, the Bureau of Labor Statistics, and HUD. This information was used to analyze the state's current social and economic complexion and determine prospective trends and patterns in growth in the next five years.

B. DEMOGRAPHIC TRENDS

The Census Bureau reports significant levels of detail about the demographic characteristics of geographic areas in each of the decennial census enumerations. However, between these large and detailed counts of the population, more general demographic estimates are released. Both sets of information are presented in this section.

TOTAL POPULATION

Table III.1, below, shows the changes in population that have occurred in Mississippi from 2000 through the most recent population estimates for 2013. For the state overall, the population increased from 2,844,658 in 2000 to over 2,991,207 in 2013. The population for the non-entitlement areas of the State increased from 2,451,801 to 2,619,259 in 2013, an increase of 6.8 percent.

Table III.1
Intercensal Population Estimates
State of Mississippi
U.S. Census Data

Year	Biloxi City	Gulfport city	Hattiesburg city	Jackson city	Moss Point city	Pascagoula city	Non-Entitlement Area of Mississippi	State of Mississippi
2000 Census	**50,644**	**71,127**	**44,779**	**184,256**	**15,851**	**26,200**	**2,451,801**	**2,844,658**
2001	50,518	71,341	44,789	184,345	15,574	25,968	2,460,459	2,852,994
2002	50,147	71,525	44,555	182,658	15,343	25,533	2,468,920	2,858,681
2003	49,223	70,941	44,513	181,450	15,105	25,084	2,481,996	2,868,312
2004	49,880	72,465	44,426	181,035	15,064	24,977	2,501,163	2,889,010
2005	49,629	72,868	44,553	179,508	14,912	24,678	2,519,795	2,905,943
2006	43,395	64,088	45,123	179,729	14,062	23,254	2,535,327	2,904,978
2007	43,902	65,535	45,716	177,011	14,125	23,287	2,558,774	2,928,350
2008	44,156	66,634	45,631	174,742	14,019	23,023	2,579,601	2,947,806
2009	44,027	67,188	45,971	173,647	13,870	22,710	2,591,361	2,958,774
2010 Census	**44,054**	**67,793**	**45,989**	**173,514**	**13,704**	**22,392**	**2,599,851**	**2,967,297**
2011	44,246	68,882	46,701	175,374	13,759	22,363	2,606,561	2,977,886
2012	44,546	70,014	47,230	175,195	13,710	22,271	2,613,484	2,986,450
2013	44,820	71,012	47,556	172,638	13,682	22,240	2,619,259	2,991,207
00 - 13 % Change	**-11.5%**	**-0.2%**	**6.2%**	**-6.3%**	**-13.7%**	**-15.1%**	**6.8%**	**5.2%**

Population by Race and Ethnicity

As the population of Mississippi grew between 2000 and 2010, the racial and ethnic composition of the state shifted as well. Overall, the population grew by 6.0 percent in non-entitlement areas, though different racial and ethnic groups within the overall population grew at different rates. The white population, which accounted for the largest proportion of Mississippi residents in both years, grew by 3.1 percent. The white population comprised a smaller proportion of the population in 2010 than it had in 2000. The racial group with the largest rate of change in the decade was persons who identified as "other," which grew by 175.7 percent. This was followed by two or more races with a change of 79.6 percent.

The Hispanic population grew at a faster rate than the non-Hispanic population. In 2000, Hispanic residents accounted for 1.3 percent of the population. After experiencing a rate of growth of 104.2 percent between 2000 and 2010, the Hispanic population came to account for 2.6 percent of the total population. Meanwhile, the non-Hispanic population only grew by 4.7 percent and the proportion of non-Hispanic Mississippi residents fell by more than one percentage point.

Table III.2
Population by Race and Ethnicity
Non-Entitlement Area of Mississippi
2000 & 2010 Census SF1 Data

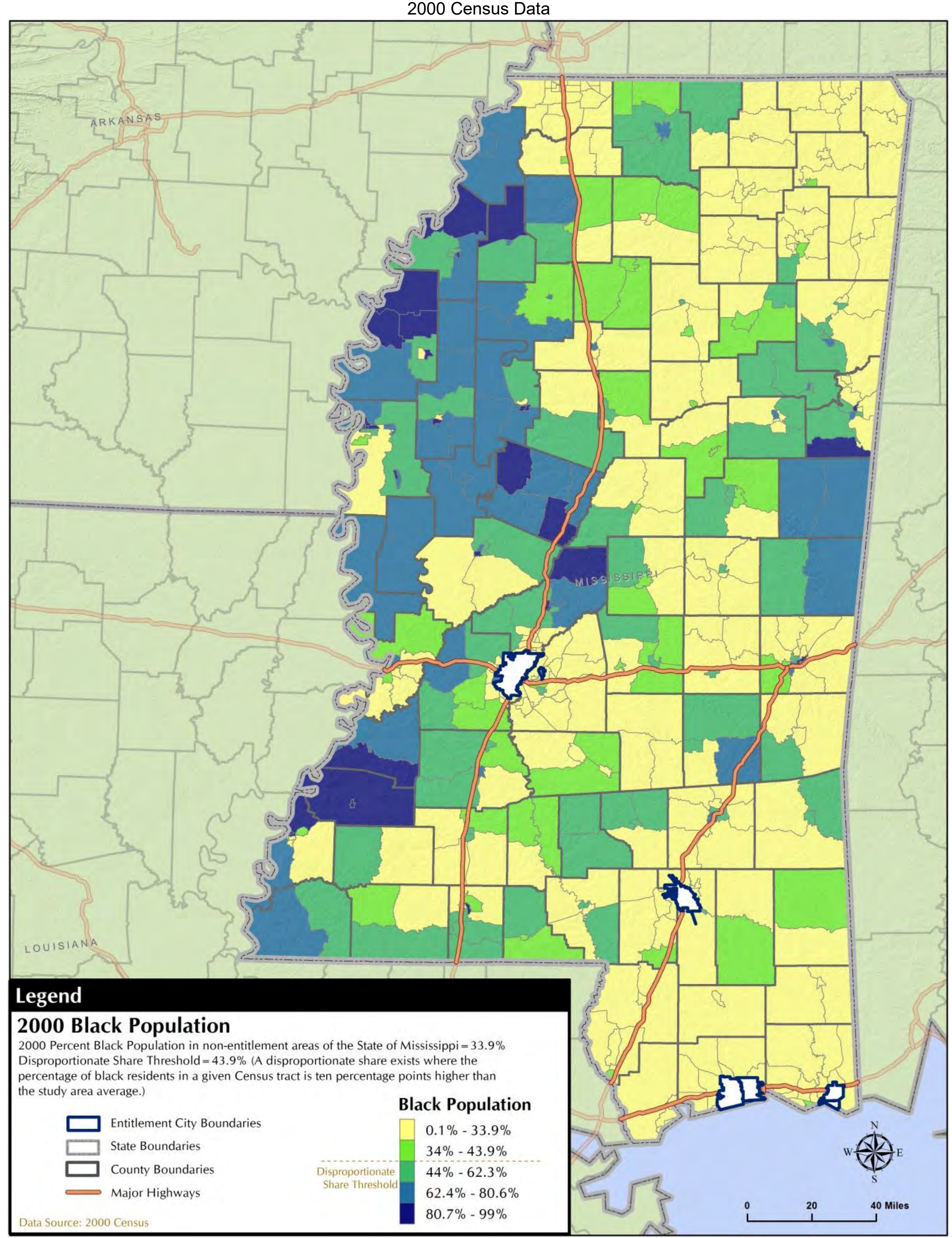
Race	2000 Census		2010 Census		% Change 00–10
	Population	% of Total	Population	% of Total	
White	1,570,081	64.0%	1,618,335	62.2%	3.1%
Black	830,193	33.9%	885,796	34.1%	6.7%
American Indian	10,724	.4%	14,089	.5%	31.4%
Asian	13,255	.5%	21,247	.8%	60.3%
Native Hawaiian/ Pacific Islander	501	.0%	900	.0%	79.6%
Other	11,356	.5%	31,303	1.2%	175.7%
Two or More Races	15,691	.6%	28,181	1.1%	79.6%
Total	**2,451,801**	**100.0%**	**2,599,851**	**100.0%**	**6.0%**
Non-Hispanic	2,419,153	98.7%	2,533,181	97.4%	4.7%
Hispanic	32,648	1.3%	66,670	2.6%	104.2%

Geographic analysis of racial distribution was conducted by calculating the percentage share of total population within each census tract of the particular sub-population; i.e., racial or ethnic group. That share was then plotted on a geographic map. The goal of this analysis was to identify areas with disproportionate concentrations of each sub-population. HUD defines a population as having a disproportionate share when a portion of a population is more than 10 percentage points higher than the jurisdiction average. For example, the white population accounted for 62.2 percent of the total population of the non-entitlement areas of the State in 2010—accordingly, the disproportionate share threshold for that population was 72.2 percent in that year. Any areas in which more than 72.2 percent of the population was white were therefore said to hold a disproportionate share of white residents.

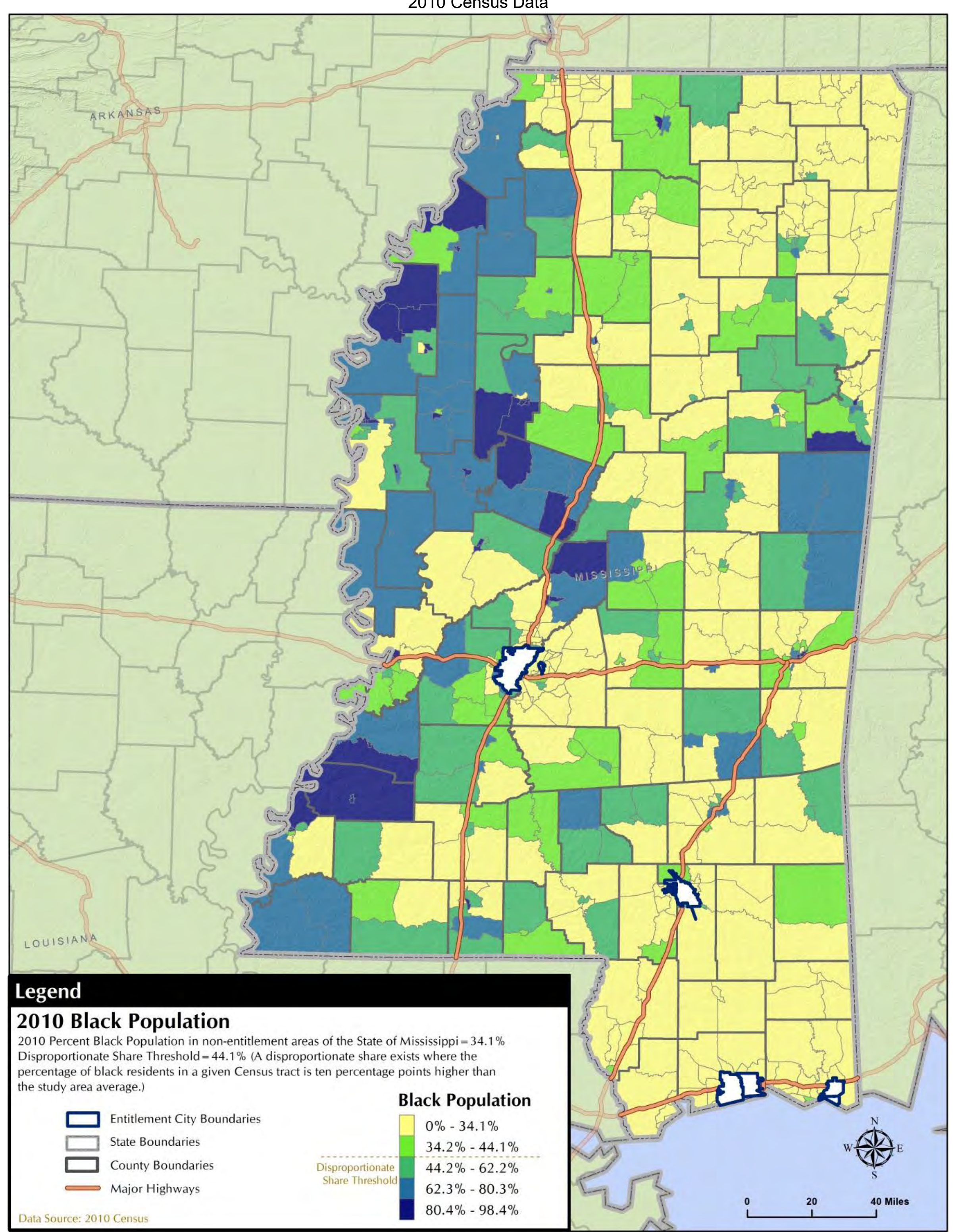
The black population accounted for only 34.1 percent of the population in 2000. The state saw many areas with disproportionate share of blacks in the non-entitlement areas of Mississippi in 2000. A majority of these areas were located on the western half of the state. Similarly, in 2010, the black population had a disproportionate share in many areas throughout the non-entitlement areas of the state. The black population did outpace the non-entitlement state average growth, having a 6.7 percent increase between 2000 and 2010. The change in distribution of black residents is shown in Maps III.1 and III.2 on the following pages.

Hispanic populations in 2000 and 2010 are shown in Maps III.3 and III.4, on the following pages. In 2000, the only county that contained a disproportionate share of Hispanic residents was Yazoo County. There were some shifts in areas with concentrations of Hispanic residents by 2010 and three counties contained disproportionate share of Hispanic residents. This included Adams, Calhoun, Pontotoc, Tallahatchie and Yazoo Counties.

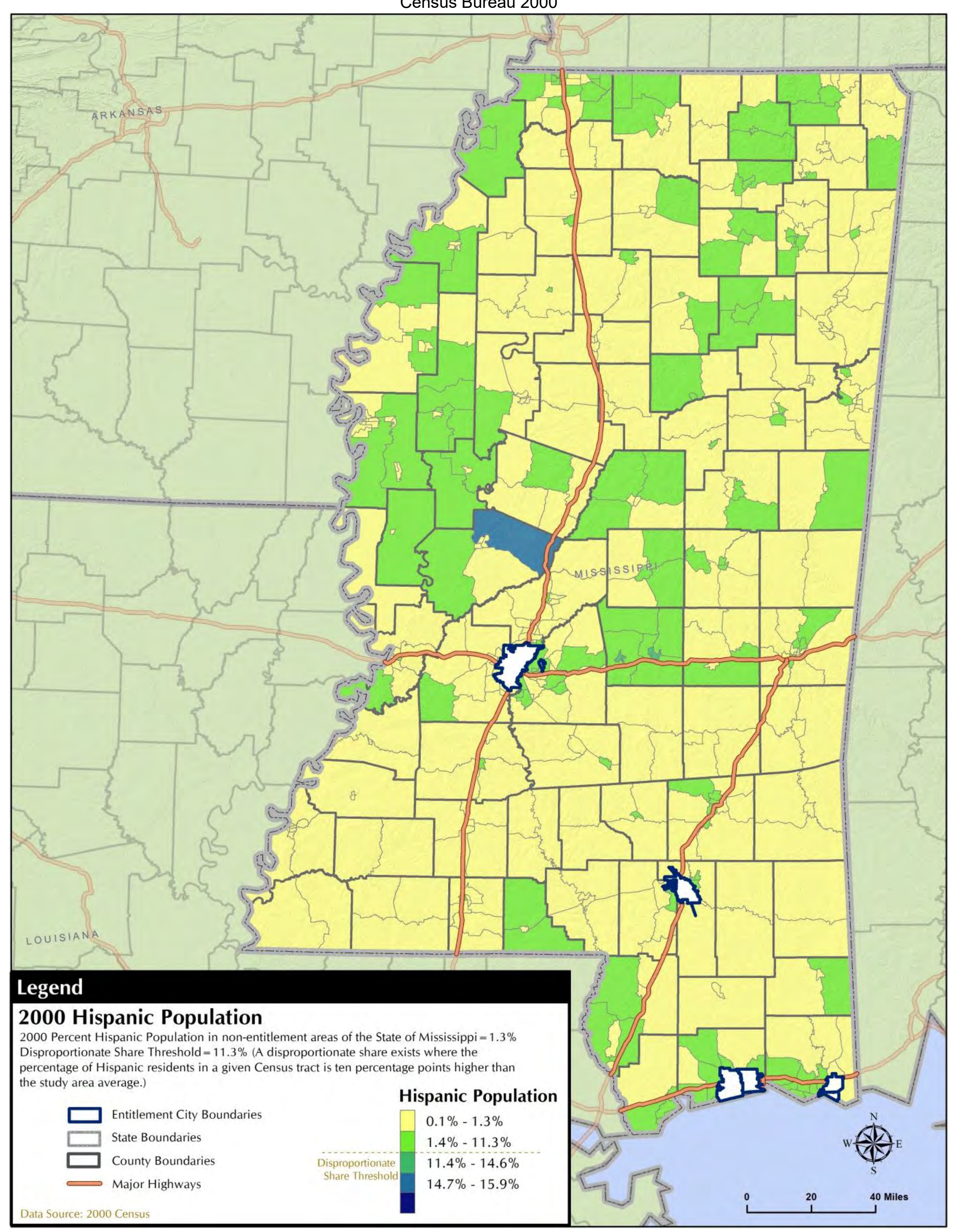
Map III.1
2000 Black Population
Non-entitlement areas of Mississippi
2000 Census Data



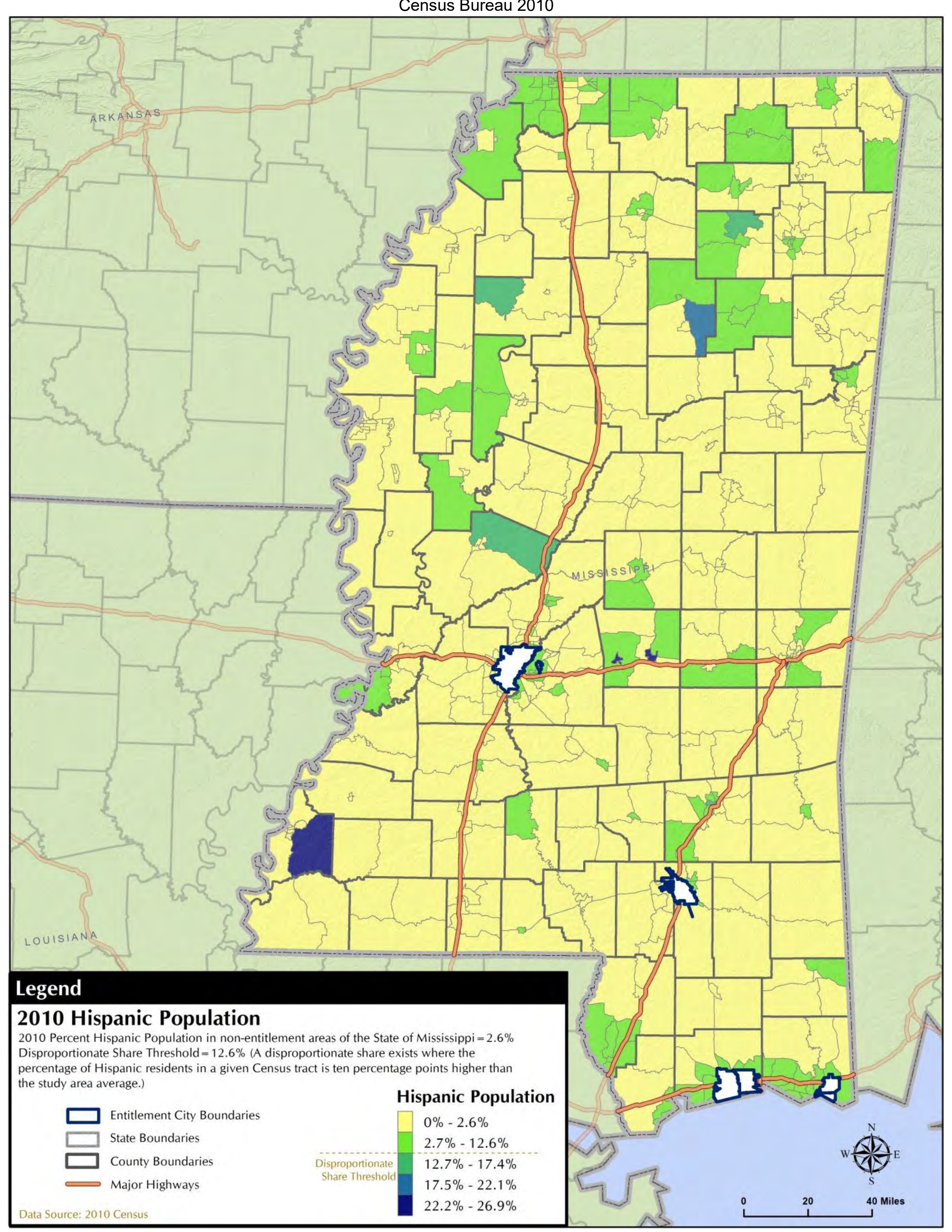
Map III.2
2010 Black Population
Non-entitlement areas of Mississippi
2010 Census Data



Map III.3
2000 Hispanic Population
Non-entitlement areas of Mississippi
Census Bureau 2000



Map III.4
2010 Hispanic Population
Non-entitlement areas of Mississippi
Census Bureau 2010



POPULATION BY AGE

The non-entitlement areas of Mississippi experienced a shift in the population between 2000 and 2010 as growth in the number of older residents generally outpaced growth in the number of younger residents as seen in Table III.3, below. The fastest-growing age cohort during this time period was composed of residents between the ages of 55 and 64; this cohort grew by 42.8 percent between 2000 and 2010. Those aged 65 or older also grew at a rate higher than average at 13.8 percent. This is reflective of an aging population.

Table III.3
Population by Age
Non-Entitlement Area of Mississippi
2000 & 2010 Census SF1 Data

Age	2000 Census		2010 Census		% Change 00–10
	Population	% of Total	Population	% of Total	
Under 5	175,043	7.1%	182,953	7.0%	4.5%
5 to 19	578,453	23.6%	559,977	21.5%	-3.2%
20 to 24	174,981	7.1%	175,165	6.7%	.1%
25 to 34	324,595	13.2%	331,816	12.8%	2.2%
35 to 54	683,518	27.9%	700,917	27.0%	2.5%
55 to 64	216,325	8.8%	308,960	11.9%	42.8%
65 or Older	298,886	12.2%	340,063	13.1%	13.8%
Total	**2,451,801**	**100.0%**	**2,599,851**	**100.0%**	**6.0%**

The Elderly

The elderly population is defined by the Census Bureau as comprising any person aged 65 or older. As noted in the 2000 Census data, some 289,886 persons in non-entitlement areas of Mississippi were considered elderly; by 2010 there were 340,063 elderly persons. Table III.6, below, segregates this age cohort into several smaller groups. This table shows that those aged 70 to 74 comprised the largest age cohort of the elderly population in Mississippi in 2010 at 84,384 persons, followed by the age group of those 75 to 79 with 62,416 persons. Between 2000 and 2010, the most growth occurred in those aged 65 to 66 with a 30.5 percent increase, followed by those aged 67 to 69, with a 22.7 percent increase. The elderly population, as a whole, saw 13.8 percent of increase between 2000 and 2010.

Table III.4
Elderly Population by Age
Non-Entitlement Area of Mississippi
2000 & 2010 Census SF1 Data

Age	2000 Census		2010 Census		% Change 00–10
	Population	% of Total	Population	% of Total	
65 to 66	35,336	11.8%	46,128	13.6%	30.5%
67 to 69	50,769	17.0%	62,270	18.3%	22.7%
70 to 74	76,233	25.5%	84,384	24.8%	10.7%
75 to 79	58,983	19.7%	62,416	18.4%	5.8%
80 to 84	40,282	13.5%	45,892	13.5%	13.9%
85 or Older	37,283	12.5%	38,973	11.5%	4.5%
Total	**298,886**	**100.0%**	**340,063**	**100.0%**	**13.8%**

The Frail Elderly

The elderly population also includes those who are considered to be frail elderly, defined as elderly persons whose physiological circumstances may limit functional capabilities; this is often quantified as those who are 85 years of age and older. Table III.4, on the previous page, shows that there were 38,973 persons aged 85 or older in Mississippi at the time of the 2010 Census.

PERSONS WITH DISABILITIES

Disability is defined by the Census Bureau as a lasting physical, mental or emotional condition that makes it difficult for a person to do activities, to go outside the home alone or to work. By this definition, 525,177 Mississippians in non-entitlement areas were considered to be living with some form of disability in 2000. This figure was higher than the national average for that time of about 19.3 percent.[1] As seen in Table III.5, there were 24,306 persons aged 5 to 15 with disabilities, 353,829 persons between the age of 16 and 64 with a disability and 147,306 persons over the age of 65 with a disability at that time.[2]

Table III.5
Disability by Age
Non-Entitlement Area of Mississippi
2000 Census SF3 Data

Age	Total	
	Disabled Population	Disability Rate
5 to 15	24,306	5.8%
16 to 64	353,829	23.2%
65 and older	147,042	51.9%
Total	**525,177**	**23.6%**

According to the American Community Survey, an estimated 16.5 percent of non-entitlement residents in Mississippi were living with some form of disability by 2013. This is seen in Table III.6, on the following page. Disability rates tended to be higher for female than for male residents, and higher for elderly residents than for younger residents. Over 60 percent of female residents over the age of 75 were observed to be living with a disability in 2013 and 56.9 percent of male residents over 75. Disability rates fell progressively in lower age ranges.

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[1] 2000 Census SF3 Data, available from http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_00_SF3_QTP21&prodType=table

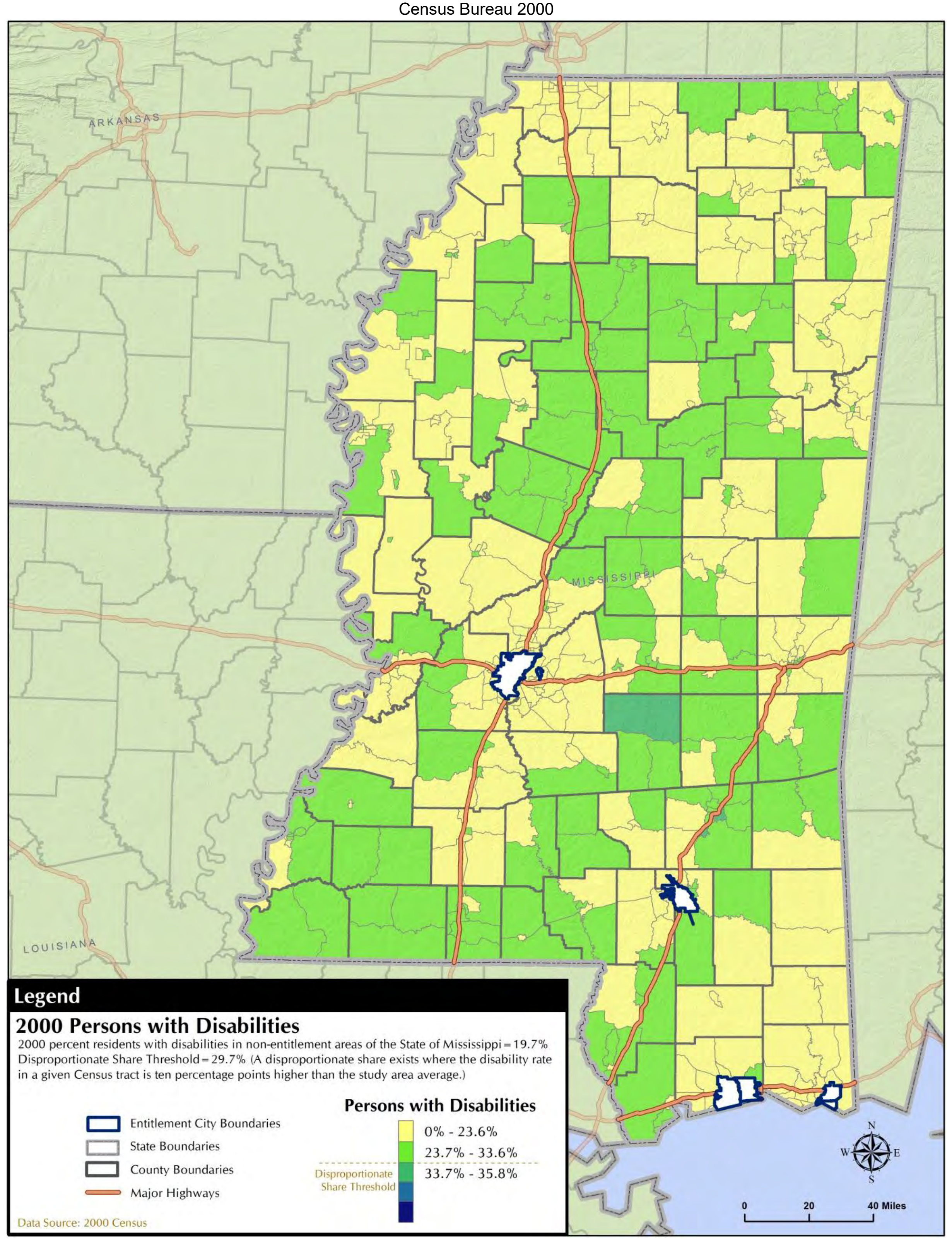
[2] The data on disability status was derived from answers to long-form questionnaire items 16 and 17 for the 1-in-6 sample. Item 16 asked about the existence of the following long-lasting conditions: (a) blindness, deafness, or a severe vision or hearing impairment, (sensory disability) and (b) a condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting, or carrying (physical disability). Item 16 was asked of a sample of the population five years old and over. Item 17 asked if the individual had a physical, mental, or emotional condition lasting 6 months or more that made it difficult to perform certain activities. The four activity categories were: (a) learning, remembering, or concentrating (mental disability); (b) dressing, bathing, or getting around inside the home (self-care disability); (c) going outside the home alone to shop or visit a doctor's office (going outside the home disability); and (d) working at a job or business (employment disability). Categories 17a and 17b were asked of a sample of the population five years old and over; 17c and 17d were asked of a sample of the population 16 years old and over. For data products which use the items individually, the following terms are used: sensory disability for 16a, physical disability for 16b, mental disability for 17a, self-care disability for 17b, going outside the home disability for 17c, and employment disability for 17d. For data products which use a disability status indicator, individuals were classified as having a disability if any of the following three conditions was true: (1) they were five years old and over and had a response of "yes" to a sensory, physical, mental or self-care disability; (2) they were 16 years old and over and had a response of "yes" to going outside the home disability; or (3) they were 16 to 64 years old and had a response of "yes" to employment disability.

Table III.6
Disability by Age
Non-Entitlement Area of Mississippi
2013 Five-Year ACS Data

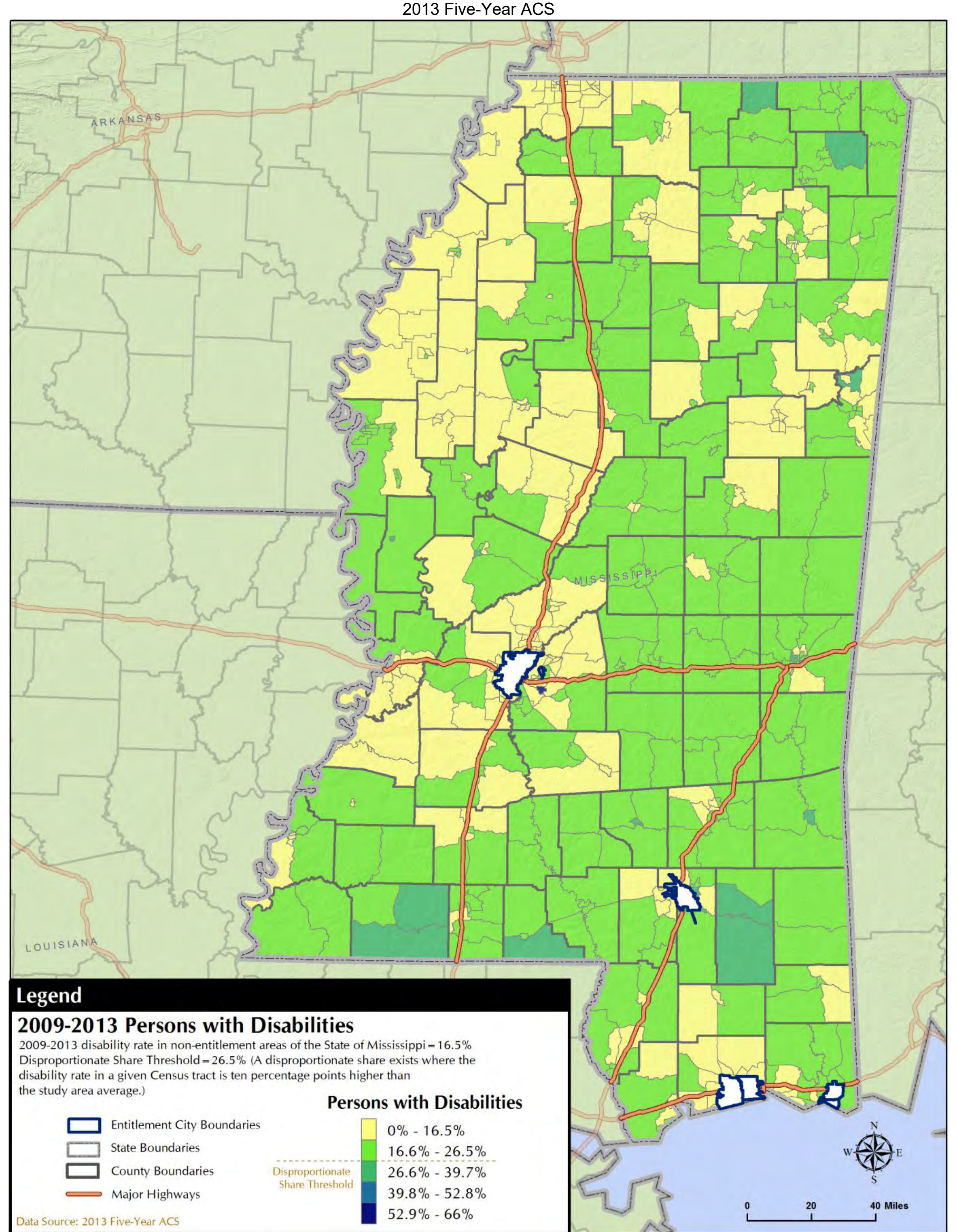
Age	Male		Female		Total	
	Disabled Population	Disability Rate	Disabled Population	Disability Rate	Disabled Population	Disability Rate
Under 5	694	.8%	457	.5%	1,151	.6%
5 to 17	19,118	7.9%	10,816	4.6%	29,934	6.3%
18 to 34	23,239	8.4%	19,520	6.7%	42,759	7.5%
35 to 64	93,335	19.9%	98,778	19.1%	192,113	19.5%
65 to 74	33,743	36.8%	37,605	35.2%	71,348	35.9%
75 or Older	30,491	56.9%	52,198	60.4%	82,689	59.0%
Total	**200,620**	**16.4%**	**219,374**	**16.5%**	**419,994**	**16.5%**

Map III.5, on the following page, shows the concentrations of disability rates throughout the state in 2000. One census tract in Smith County was the only are to have a disproportionate share of disabled persons. By 2013, more census tracts had disproportionate shares of disabled persons. As seen in Map III.6, there were large tracts in Amite, Perry, Prentiss, Tippah and Whitewall counties with higher concentrations, as well as some smaller areas in other parts of the state.

Map III.5
2000 Population with Disabilities
Non-entitlement areas of Mississippi
Census Bureau 2000



Map III.6
2013 Population with Disabilities
Non-entitlement areas of Mississippi
2013 Five-Year ACS



GROUP QUARTERS POPULATION

The Census Bureau defines group quarters as "places where people live or stay in a group living arrangement, which are owned or managed by an entity or organization providing housing and/or services for the residents[3]." The group quarters population is further divided into two overall categories:

- **The institutionalized population** includes persons under formally authorized supervised care or custody, such as those living in correctional institutions, nursing homes, juvenile institutions, halfway houses, mental or psychiatric hospitals, and wards.
- **The non-institutionalized population** includes persons who live in group quarters other than institutions, such as college dormitories, military quarters or group homes. These latter settings include community-based homes that provide care and supportive services, such as those with alcohol and drug addictions. This particular category also includes emergency and transitional shelters for the homeless.[4]

The number of residents living in group quarters in non-entitlement areas Mississippi grew slightly from 74,914 in 2000 to 76,434 in 2010, an increase of 2.0 percent. Noninstitutionalized group quarters saw a decrease of 16.0 percent; while institutionalized groups quarters saw a 14.5 percent increase. The groups that drove the overall increase were correctional institutions, while all other group quarters declined.

Table III.7
Group Quarters Population
Non-Entitlement Area of Mississippi
2000 & 2010 Census SF1 Data

Group Quarters Type	2000 Census		2010 Census		% Change 00–10
	Population	% of Total	Population	% of Total	
Institutionalized					
Correctional Institutions	22,978	51.9%	32,348	63.8%	40.8%
Juvenile Facilities	.	.	2,070	4.1%	.
Nursing Homes	15,973	36.1%	14,396	28.4%	-9.9%
Other Institutions	5,352	12.1%	1,913	3.8%	-64.3%
Total	44,303	100.0%	**50,727**	100.0%	14.5%
Noninstitutionalized					
College Dormitories	22,325	72.9%	20,188	78.5%	-9.6%
Military Quarters	1,187	3.9%	609	2.4%	-48.7%
Other Noninstitutional	7,099	23.2%	4,910	19.1%	-30.8%
Total	30,611	40.9%	25,707	33.6%	-16.0%
Group Quarters Population	**74,914**	**100.0%**	**76,434**	**100.0%**	**2.0%**

[3] *2010 Census Summary File: Technical Documentation*. Issued September 2012. Page B-14. Available at http://www.census.gov/prod/cen2010/doc/sf1.pdf#page=504.
[4] Caution is needed in interpreting the "Other Noninstitutional" population to represent the actual homeless population of Mississippi, as this count likely under-represents the actual number of persons experiencing homelessness in the state. A more recent local count of this population is covered in a latter section of this document.

HOUSEHOLDS

Mississippi households in non-entitlement areas grew smaller, in general, between 2000 and 2010. The number of households grew by 8.5 percent overall between 2000 and 2010, but the number of households between three and five members fell behind that overall growth rate, and occupied smaller percentages of all Mississippi households at the end of the decade. By contrast, the number of one-person households grew at a rate of 16.9 percent and the number of two-person households grew by 11.4 percent. As a result, households with one or two members came to occupy 25.7 and 32.3 percent of all households, respectively, by the end of the decade. Additionally, the number of households with seven persons or more grew by 17.3 percent, and the proportion of all households that were occupied by seven or more members grew to account for 1.7 percent of households.

Table III.8
Households by Household Size
Non-Entitlement Area of Mississippi
2000 & 2010 Census SF1 Data

Size	2000 Census		2010 Census		% Change 00–10
	Households	% of Total	Households	% of Total	
One Person	214,817	23.9%	251,060	25.7%	16.9%
Two Persons	282,824	31.5%	314,953	32.3%	11.4%
Three Persons	168,567	18.7%	170,826	17.5%	1.3%
Four Persons	136,490	15.2%	133,853	13.7%	-1.9%
Five Persons	61,022	6.8%	64,341	6.6%	5.4%
Six Persons	21,602	2.4%	24,247	2.5%	12.2%
Seven Persons or More	13,853	1.5%	16,245	1.7%	17.3%
Total	**899,175**	**100.0%**	**975,525**	**100.0%**	**8.5%**

C. ECONOMIC CONDITIONS

LABOR FORCE AND EMPLOYMENT

The size of the labor force, which represents the number of residents either working or looking for work, and the number of workers employed in non-entitlement areas of Mississippi have both grown considerably for more than two decades. The state did experience an increase in unemployment starting in 2009, it has since continued to fall but has not yet reached pre-recession levels. As seen in Table III.9, on the following page, the labor force had increased to 1,127,192 persons in 2013 and employment had reached 1,031,005.

Table III.9
Labor Force Statistics
Non-Entitlement Area of Mississippi
1990–2013 BLS Data

Year	Labor Force	Employment	Unemployment	Unemployment Rate
1990	1,008,533	930,284	78,249	7.80%
1991	1,022,344	929,629	92,715	9.10%
1992	1,028,104	941,504	86,600	8.40%
1993	1,040,208	967,214	72,994	7.00%
1994	1,068,295	996,261	72,034	6.70%
1995	1,073,712	1,002,453	71,259	6.60%
1996	1,082,697	1,012,468	70,229	6.50%
1997	1,094,225	1,026,261	67,964	6.20%
1998	1,095,255	1,033,934	61,321	5.60%
1999	1,105,652	1,046,087	59,565	5.40%
2000	1,136,574	1,072,684	63,890	5.60%
2001	1,124,863	1,061,651	63,212	5.60%
2002	1,126,406	1,050,265	76,141	6.80%
2003	1,133,282	1,060,267	73,015	6.40%
2004	1,137,054	1,064,704	72,350	6.40%
2005	1,145,555	1,058,879	86,676	7.60%
2006	1,123,560	1,048,870	74,690	6.60%
2007	1,135,984	1,063,936	72,048	6.30%
2008	1,134,764	1,056,887	77,877	6.90%
2009	1,118,214	1,011,314	106,900	9.60%
2010	1,147,554	1,026,352	121,202	10.60%
2011	1,163,873	1,042,028	121,845	10.50%
2012	1,150,483	1,046,132	104,351	9.10%
2013	1,127,192	1,031,005	96,187	8.50%

Prior to 2008, unemployment in Mississippi had remained followed national trends since 1990, as seen in Diagram III.1, on the following page. The unemployment rate in Mississippi has remained above the national level throughout this time. The unemployment rate in Mississippi was hit by the recent recession, but has since lowered to 8.5 percent in 2013.

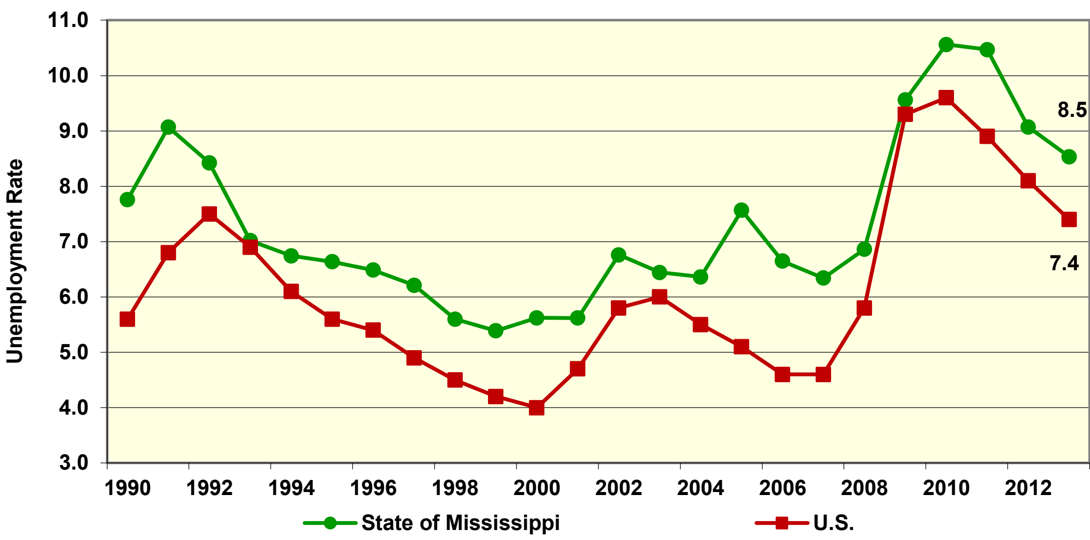
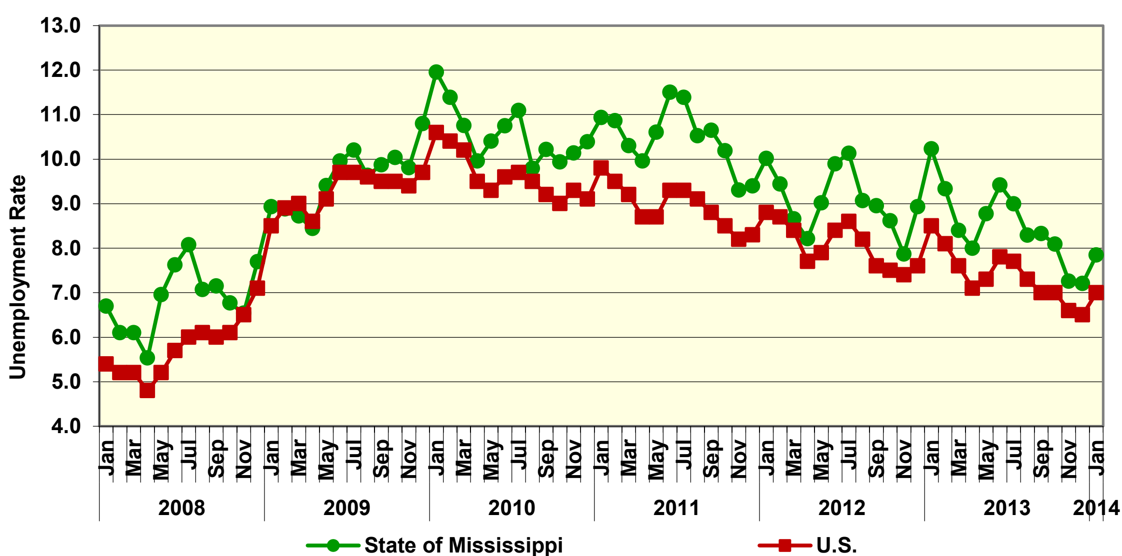


Diagram III.2, below, shows the state unemployment rate since 2008. The state's rate reached above 12 percent in 2009, but has decreased steadily to around 8 percent by 2014.

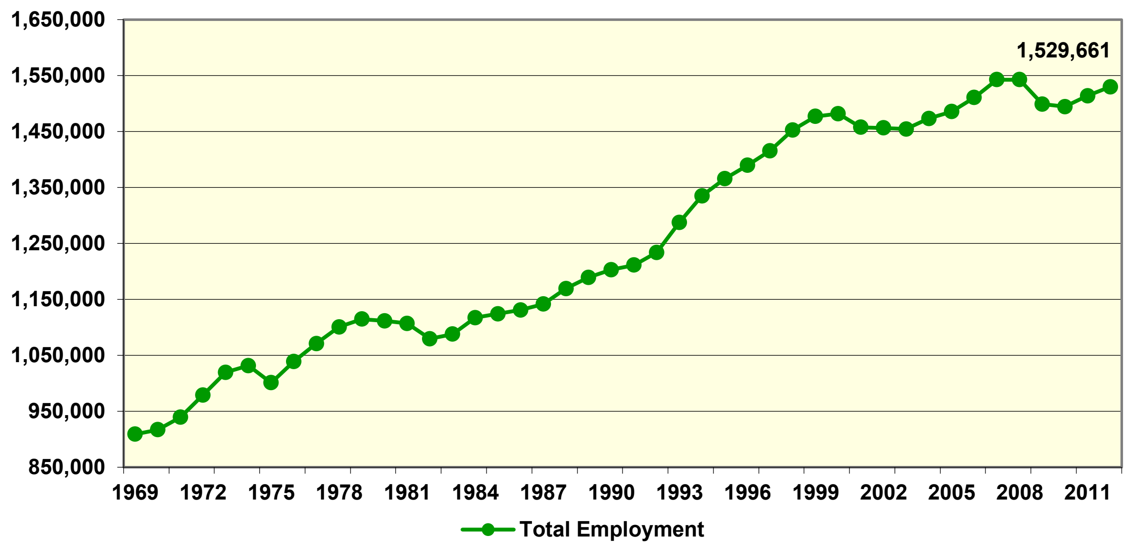


FULL AND PART-TIME EMPLOYMENT

The Bureau of Economic Analysis (BEA) provides an alternate index of employment; a count of full-time and part-time jobs in the state. These data differ from the BLS data discussed previously in that they are collected where workers are employed rather than at the household level, and the same person may be counted twice in this dataset if he or she works more than one job.

The count of jobs in the state and the count of labor force participants both yield a similar portrait; of mainly steady growth in the labor market until 2008. In fact, the BEA data indicate that this growth has been steady since 1969, and that growth in the number of jobs was uniformly positive for nearly four decades. In 1969, there were around 900,000 jobs in the state. By 2008, that number had grown to around 1,500,000. Since that time, full and part time employment had dipped before rising again, reaching 1,529,661 by 2013.

Diagram III.3
Total Employment
State of Mississippi
1990–2013 BEA Data



PROMINENT INDUSTRIES

The State of Mississippi has various industries of employment. The largest sectors of employment in 2012 for the state include government and government enterprises, retail trade and health care and social assistance. This is followed by manufacturing and accommodation and food services. The industries with the greatest amount of growth since 2000 include administrative and waste services, with an estimated 64 percent growth between 2000 and 2012. This was followed by real estate and renal leasing, mining, and educational services, which all grew by more than 45 percent between 2000 and 2012. Table III.10, on the following page shows this growth. Additional breakdowns by income for each industry are provided in Tables C.2 through C.4 in Appendix C.

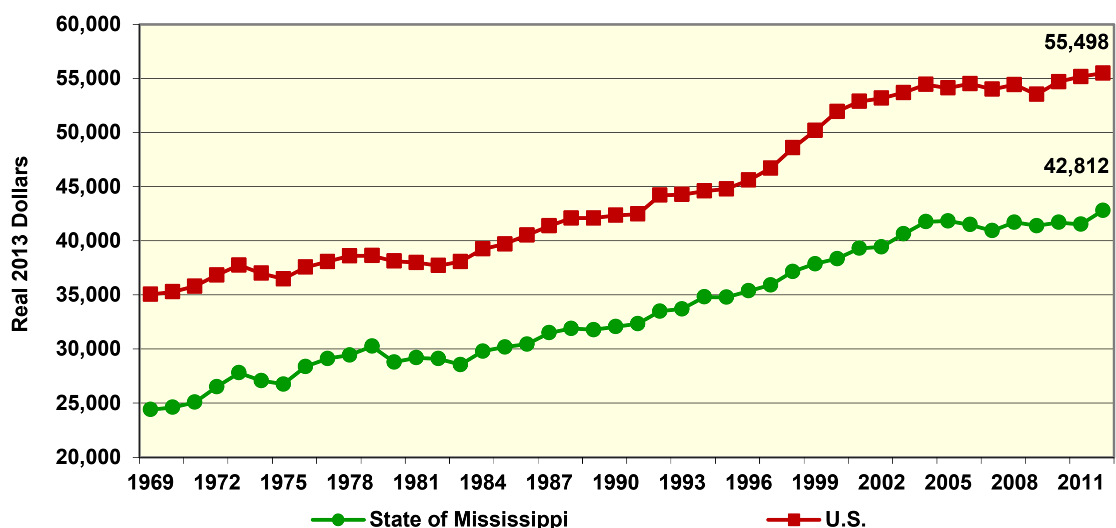
Table III.10
Employment by Industry
State of Mississippi
BEA Data: Select Years 2001-2013

NAICS Categories	2001	2006	2007	2008	2009	2010	2011	2012	2013	% Change 12-13
Farm employment	53,208	45,329	44,326	43,932	45,245	45,587	44,433	42,990	.	-3.2%
Forestry, fishing, related activities, and other	15,492	14,597	14,377	14,304	13,520	13,611	13,784	13,869	.	0.6%
Mining	8,935	9,548	10,462	12,808	11,965	13,976	12,869	13,272	.	3.1%
Utilities	8,125	8,102	7,918	8,122	8,083	8,144	8,027	8,015	.	-0.1%
Construction	85,557	103,560	106,375	105,117	92,794	87,916	86,968	85,555	.	-1.6%
Manufacturing	204,686	179,683	173,589	163,590	145,979	140,063	140,190	141,986	.	1.3%
Wholesale trade	38,926	40,676	41,038	40,327	38,778	38,139	38,739	38,894	.	0.4%
Retail trade	170,104	172,596	173,013	169,195	163,715	161,223	163,795	164,271	.	0.3%
Transportation and warehousing	49,276	52,778	55,056	53,855	52,108	51,828	52,997	53,548	.	1.0%
Information	19,399	16,306	16,000	16,044	15,368	14,900	14,663	15,455	.	5.4%
Finance and insurance	46,996	48,430	51,472	53,536	56,002	54,957	57,680	58,496	.	1.4%
Real estate and rental and leasing	31,596	40,006	43,589	44,737	44,294	45,189	45,577	47,209	.	3.6%
Professional and technical services	46,579	54,440	56,391	57,562	55,222	55,205	55,333	55,223	.	-0.2%
Management of companies and enterprises	10,941	10,088	10,361	11,031	10,950	10,860	11,282	11,287	.	0.0%
Administrative and waste services	55,229	74,614	78,006	79,187	76,192	82,464	86,983	90,519	.	4.1%
Educational services	17,613	21,449	22,153	23,113	23,602	25,044	24,961	25,684	.	2.9%
Health care and social assistance	109,474	127,010	133,856	136,375	139,643	143,645	148,755	150,544	.	1.2%
Arts, entertainment, and recreation	26,106	17,955	20,629	20,828	20,284	20,570	19,885	20,589	.	3.5%
Accommodation and food services	106,486	115,406	120,180	120,721	116,190	114,623	117,688	120,281	.	2.2%
Other services, except public administration	77,674	82,537	84,319	84,340	84,152	84,008	89,596	92,490	.	3.2%
Government and government enterprises	274,785	275,423	279,488	283,840	284,778	282,095	279,362	279,484	.	0.0%
Total	**1,457,187**	**1,510,533**	**1,542,598**	**1,542,564**	**1,498,864**	**1,494,047**	**1,513,567**	**1,529,661**	**.**	**1.1%**

EARNINGS AND PERSONAL INCOME

Average earnings per job is defined as the total earnings from all jobs statewide divided by the total number of jobs in the state, adjusted for inflation. National growth in these earnings, which had been uniformly positive since 1969, leveled off in 2002. The state of Mississippi's average earnings has remained consistently below the national rate. The Average Earnings per Job in Mississippi was $42,812 in 2103, compared to $55,498 nationally.

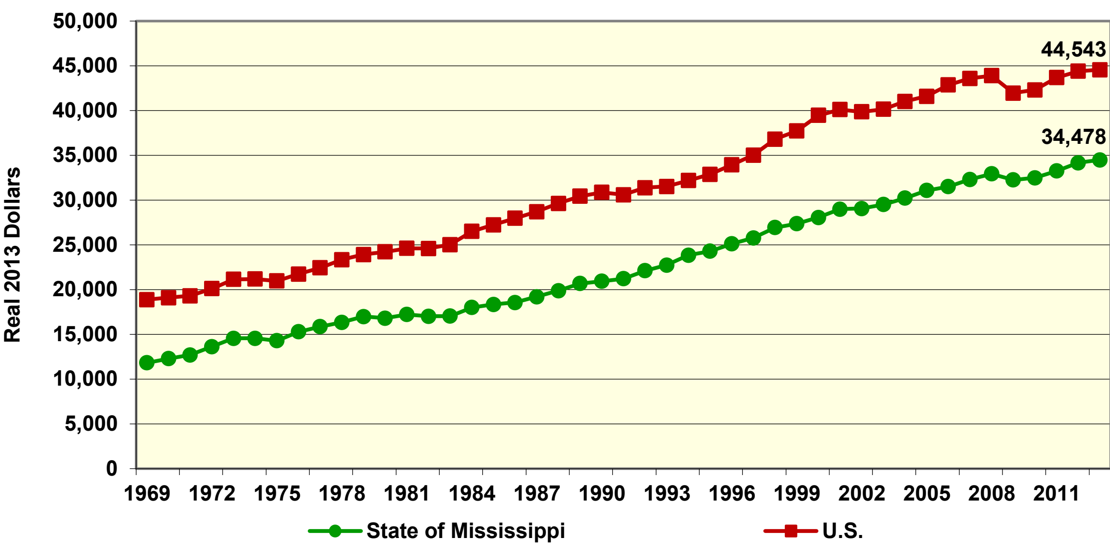
Diagram III.4
Average Earning Per Job
State of Mississippi
1990–2013 BEA Data



Real earnings vary by industry. The industries with the highest average earnings in 2012 included mining, utilities, management of companies and enterprises and wholesale trade. Industries with the largest rate of growth in earnings between 2011 and 2012 include farm employment, with a 69.2 percent growth in earning in one year, followed by mining with a 7.3 percent growth. This data is presented in Table C.2 in Appendix C.

Growth in real per capita income (PCI) is defined as the total personal income from all sources divided by the number of residents in the state. Mississippi's statewide real per capita income has remained below national levels since 1969. The state's real per capita income grew to $34,478 in 2013, while the national level was $44,543. The state and national per capita incomes have remained fairly parallel since 1969, enduring the same trends. This is shown in Diagram III.5, on the following page.

Diagram III.5
Real Per Capita Income
State of Mississippi
1990–2013 BEA Data



DISTRIBUTION OF INCOME

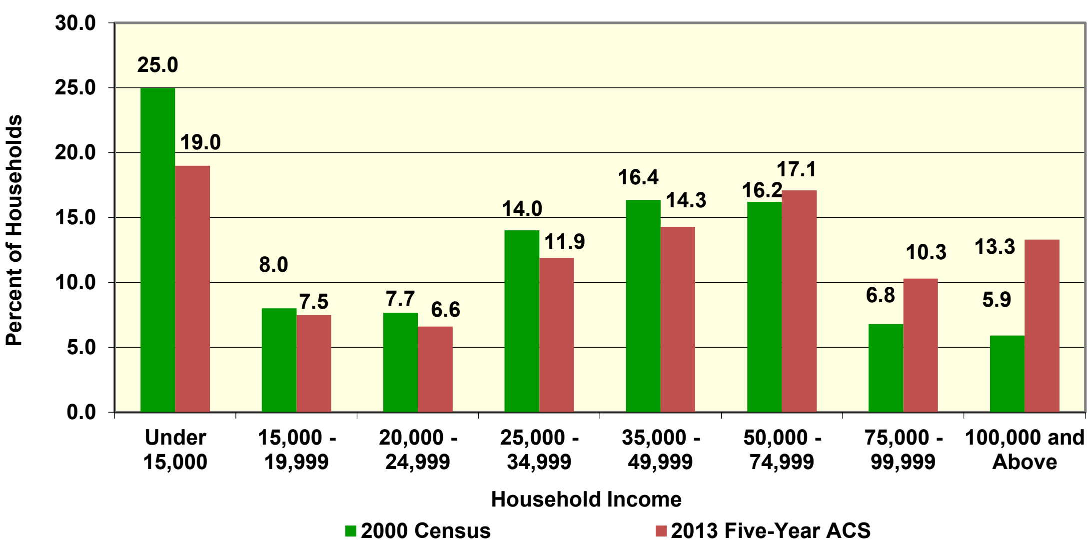
The income bracket with the most growth between 2000 and 2013 in non-entitlement areas of Mississippi were those with an income above $100,000. The proportion of households with incomes above $100,000 grew by 7.4 percentage points. The proportion of households with an income between $75,000 and $99,999 grew by 3.5 percentage points. Households with income between $50,000 and $74,999 grew by 0.9 percentage points. The proportion of households in all other income groups declined between 2000 and 2012. Households with income less than $15,00, however, comprised the largest portion of households, at 19.0 percent.

Table III.11
Households by Income
Non-Entitlement Area of Mississippi
2000 Census SF3 & 2013 Five-Year ACS Data

Income	2000 Census		2013 Five-Year ACS	
	Households	% of Total	Households	% of Total
Less than $15,000	224,832	25.0%	180,222	19.0%
$15,000 to $19,999	72,028	8.0%	71,084	7.5%
$20,000 to $24,999	69,069	7.7%	63,054	6.6%
$25,000 to $34,999	126,278	14.0%	113,241	11.9%
$35,000 to $49,999	147,354	16.4%	136,112	14.3%
$50,000 to $74,999	146,029	16.2%	162,650	17.1%
$75,000 to $99,999	61,334	6.8%	97,454	10.3%
$100,000 or More	53,326	5.9%	126,034	13.3%
Total	**900,250**	**100.0%**	**949,851**	**100.0%**

Diagram III.6, on the following page, illustrates the change in household incomes between 2000 and 2013.

Diagram III.6
Households by Income
Non-Entitlement Area of Mississippi
2000 Census SF3 & 2013 Five-Year ACS Data



POVERTY

The Census Bureau uses a set of income thresholds that vary by family size and composition to determine poverty status. If a family's total income is less than the threshold for that size family, then that family, and every individual in it, is considered poor. The poverty thresholds do not vary geographically, but they are updated annually for inflation using the Consumer Price Index. The official poverty definition counts monetary income earned before taxes and does not include capital gains and non-cash benefits such as public housing, Medicaid and food stamps. Poverty is not defined for people in military barracks, institutional group quarters or for unrelated individuals under the age of 15, such as foster children. These people are excluded from the poverty calculations, as they are considered as neither poor nor non-poor.[5]

In Mississippi non-entitlement areas, the poverty rate in 2013 was 21.9 percent, with 553,322 persons living in poverty. There were 58,204 children under the age of 5 living in poverty in 2000, and another 116.986 children between the ages of 6 and 17 living in poverty. By 2013, there were 74,644 children under 6 living in poverty, and 126,191 children aged 6 to 17. Additionally, in 2013, there were 47,759 of the state's citizens 65 year of age or older were also considered to be living in poverty. These data are presented in Table III.12, on the following page.

[5]http://www.census.gov/hhes/poverty/povdef.html.

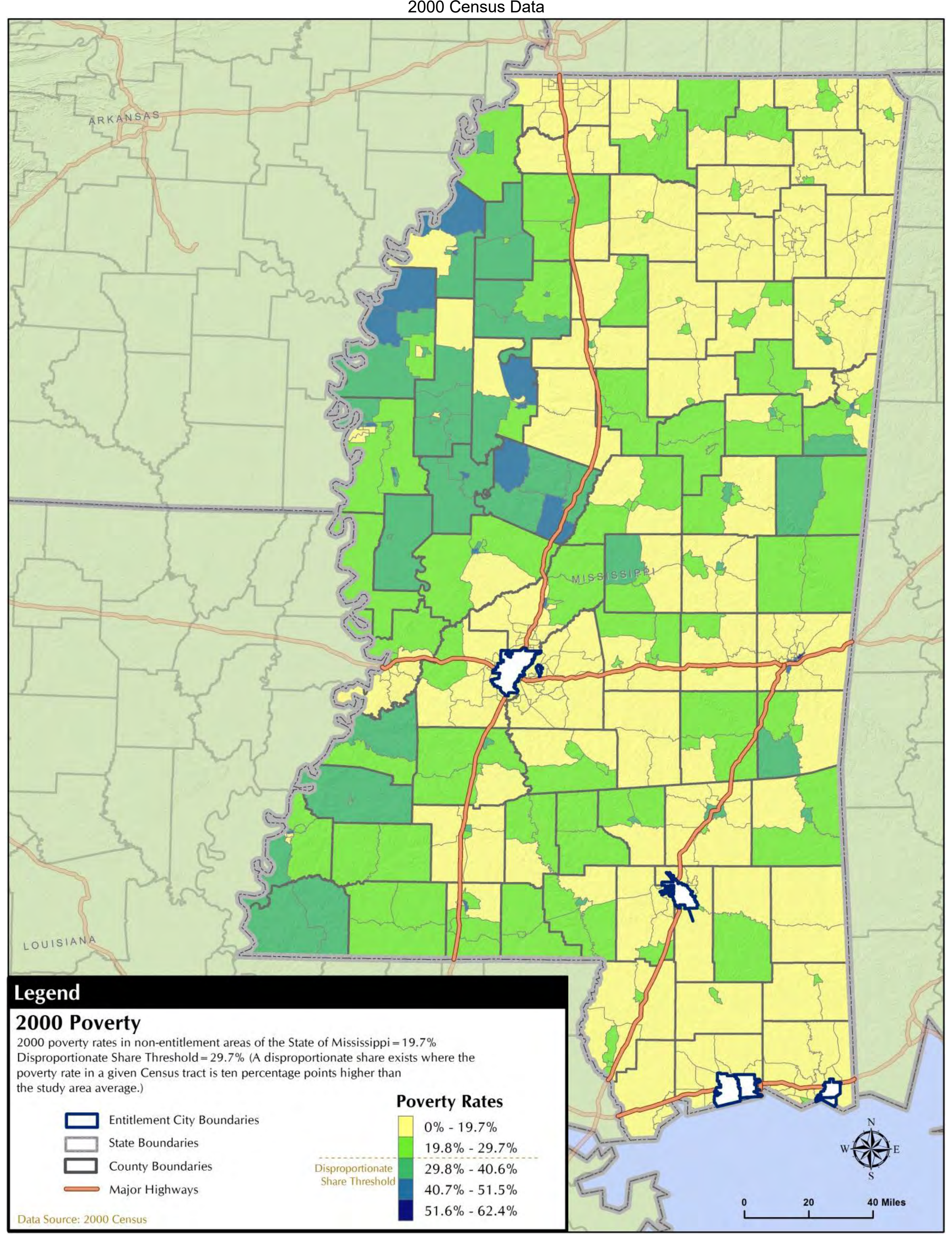
Table III.12
Poverty by Age
Non-Entitlement Area of Mississippi
2000 Census SF3 & 2013 Five-Year ACS Data

Age	2000 Census		2013 Five-Year ACS	
	Persons in Poverty	% of Total	Persons in Poverty	% of Total
Under 6	58,204	12.4%	74,644	13.5%
6 to 17	116,986	25.0%	126,191	22.8%
18 to 64	238,057	50.8%	304,728	55.1%
65 or Older	54,941	11.7%	47,759	8.6%
Total	**468,188**	**100.0%**	**553,322**	**100.0%**
Poverty Rate	**19.7%**	**.**	**21.9%**	**.**

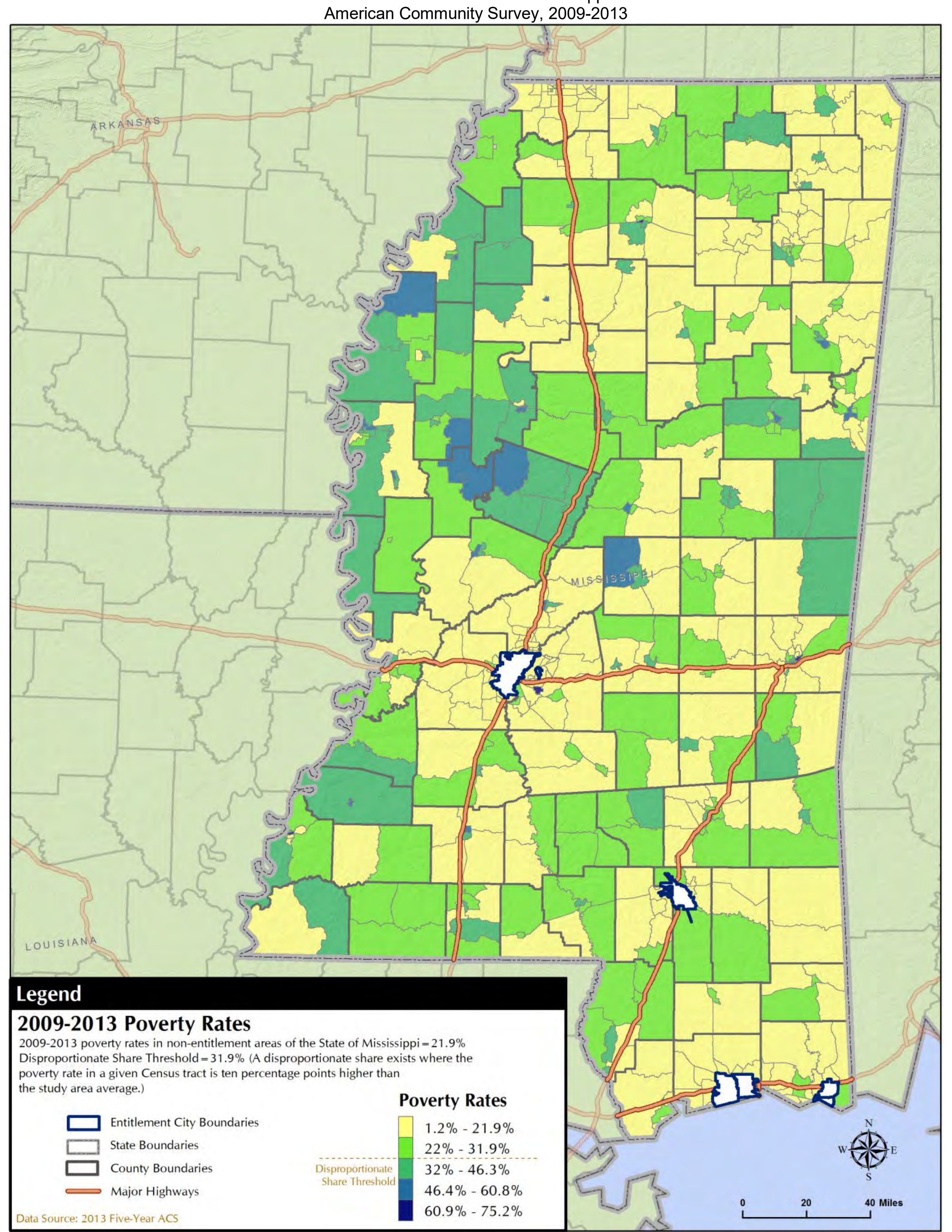
Maps III.7 and III.8, on the following pages, show the shift in areas with concentrations of poverty throughout the State. In 2000, there were multiple census tracts with higher concentrations of poverty. Most of these were found on the western half of the state. By 2012, poverty concentrations had shifted somewhat and spread out to other areas of the state. The non-entitlement areas of Mississippi saw an increase in the overall poverty rate from 2000 to 2013, increasing from 19.7 percent to 21.9 percent.

If you compare these maps to the maps demonstrating racial and ethnic concentrations on pages 23 through 26, you will notice that many areas with higher concentrations of poverty are also areas with higher concentrations of racial and ethnic minorities.

Map III.7
2000 Poverty Rates
Non-entitlement areas of Mississippi
2000 Census Data



Map III.8
2012 Poverty Rates
Non-entitlement areas of Mississippi
American Community Survey, 2009-2013



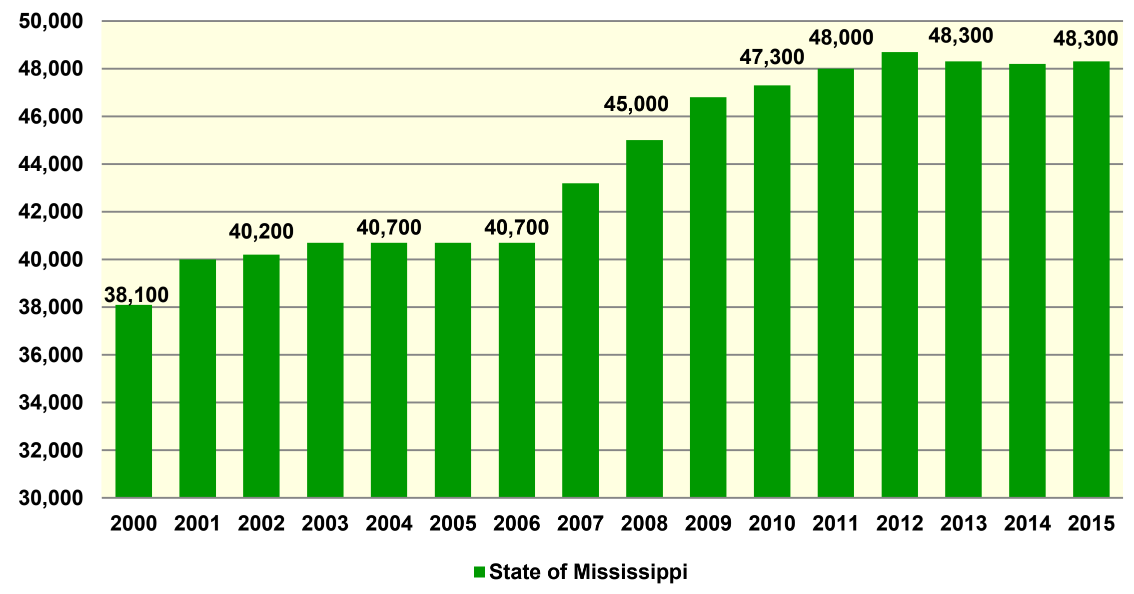
More recent poverty data for the State of Mississippi, extracted from the Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program, are presented in Table III.13, at right. The poverty rate for the State as a whole has increased from 17.6 percent in 2000 to 23.9 percent in 2013. In 2000, there were almost 490,000 individuals in the state living in poverty. By 2013, this number had climbed to over 690,000 people, an increase of over 200,000 individuals during those thirteen years.

While the poverty rate continued to increase over the past decade, the median family income for the state of Mississippi as a whole increased from 2000 to 2015 but has leveled off since 2011. Overall, it increased from $38,100 in 2000 to $48,300 in 2015. This change is shown in Diagram III.7, below. The median family income rose dramatically between 2006 and 2011, but has since hovered around $48,000.

Table III.13
Poverty Rate
State of Mississippi
Census Bureau SAIPE Poverty Estimates, 2000 - 2013

Year	Individuals in Poverty	Poverty Rate
2000	489,775	17.6
2001	530,254	19
2002	531,561	18.9
2003	518,238	18.3
2004	549,224	19.3
2005	591,549	21
2006	588,288	20.9
2007	583,360	20.7
2008	590,480	20.8
2009	620,446	21.8
2010	644,156	22.4
2011	658,232	22.8
2012	689,116	23.8
2013	692,058	23.9

Diagram III.7
Median Family Income
State of Mississippi
HUD Data, 2000 – 2015



ANTI-POVERTY STRATEGY

The State of Mississippi's anti-poverty strategy consists of two components: welfare reform and enhanced economic development. The State's welfare reform initiative is based upon personal responsibility, time-limited assistance, and work for the receipt of benefits. Temporary Assistance for Needy Families (TANF) is the cash assistance component that helps families work toward their goal of total independence. TANF recipients are required to work in exchange for their temporary public assistance. MDA functions as a significant component of Mississippi's effort to promote job creation in the private sector, asset growth, and community and economic development in economically distressed areas such as inner cities and rural areas of the State. The Workforce Investment Network (WIN) in Mississippi is an innovative strategy designed to provide convenient, one-stop employment and training services to employers and job seekers. With a combination of federal, state, and community workforce services, WIN is able to create a system that is both convenient to the citizens and user-friendly. By putting Mississippians to work, WIN helps to establish a broader tax base, which in turn grows communities to assist with this anti-poverty strategy.

D. SUMMARY

Between 2000 and 2013, the population in non-entitlement areas of Mississippi increased by over 167,000 people, starting at 2,451,801 in 2000 and ending at an estimated 2,619,259 people by 2013. Over the course of these thirteen years, total population growth in these areas equaled 6.8 percent. In 2010, the majority of the population, 62.2 percent, was white, although this group did not keep pace with the average growth rate for the state. The second largest racial group in 2010 was black at 34.1 percent, followed by "other," two or more races, Asian, and American Indian. As for ethnicity, persons of Hispanic descent comprised 2.6 percent of the population. Geographic analysis of racial and ethnic data showed that certain areas throughout the state have higher concentrations of racial or ethnic minorities, including areas with disproportionate share of black and Hispanic households. The two fastest growing age groups in non-entitlement areas of Mississippi were those aged 55 to 64 and those aged 65 and older, indicating an aging population. Some 23.6 percent of the population aged 5 or older in non-entitlement areas of Mississippi had one or more disabilities at the time of the 2000 census.

From 1990 through 2013, the labor force in non-entitlement areas of Mississippi, defined as people either working or looking for work, rose from about 1,008,500 persons to 1,127,192 persons. Since the mid-1990s Mississippi's unemployment rate remained fairly steady with the national rate, both spiking in 2009 before lowering again. In 2013 the non-entitlement areas of Mississippi's unemployment rate was at 8.5 percent, after having fallen from close to 11 percent in 2010. In 2013, the real average earning per job in the state of Mississippi was $42,812, and real per capita income was $34,478, but both of these figures were below national averages. In non-entitlement areas of Mississippi the poverty rate in 2013 was estimated to be 21.9 percent with 553,322 persons living in poverty. Persons in poverty were concentrated in select census tracts across the state.

IV. Housing Market Analysis

A. Introduction

The following narrative provides information about the housing market, the supply and demand for housing over time, building permit data and related price information for both rental properties and homeownership opportunities in Mississippi.

B. Housing Stock

In 2000, the Census Bureau reported that Mississippi had 1,161,953 total housing units. Since that time, the Census Bureau has continued to release estimates of the total number of housing units in the state. The annual estimates of housing stock are presented in Table IV.1, at right. By 2013, there were estimated to be 1,283,165 housing units in Mississippi. Housing units were added at a rate around 1 percent from 2000 to 2008, but had dropped off to around 0.2 percent by 2013.

Table IV.1
Housing Units Estimates
State of Mississippi
Census Data, 2000 - 2013

Year	Housing Units
2000	1,161,953
2001	1,183,316
2002	1,194,441
2003	1,205,698
2004	1,217,872
2005	1,231,448
2006	1,224,952
2007	1,242,296
2008	1,260,832
2009	1,270,524
2010	1,274,719
2011	1,277,990
2012	1,280,059
2013	1,283,165

Type and Tenure

Single family homes accounted for 71.6 percent of the housing stock in Mississippi non-entitlement areas in 2013. The second largest unit type was mobile homes with 17.0 percent of units. The proportion of single family homes grew by more than one percentage point, while the proportion of mobile homes fell by 1.7 percentage points. The proportion of duplexes, tri- or four-plexes and apartments all fell slightly. These changes shifted the dynamics of the housing stock in non-entitlement areas of Mississippi, leaving single family homes with the vast majority of unit types.

Table IV.2
Housing Units by Type
Non-Entitlement Area of Mississippi
2000 Census SF3 & 2013 Five-Year ACS Data

Unit Type	2000 Census		2013 Five-Year ACS	
	Units	% of Total	Units	% of Total
Single-Family	702,258	70.4%	794,855	71.6%
Duplex	22,037	2.2%	23,818	2.1%
Tri- or Four-Plex	28,343	2.8%	29,220	2.6%
Apartment	55,754	5.6%	72,063	6.5%
Mobile Home	187,033	18.7%	188,292	17.0%
Boat, RV, Van, Etc.	2,729	0.3%	1,125	0.1%
Total	**998,154**	**100.0%**	**1,109,373**	**100.0%**

Over 111,000 housing units were added to the non-entitlement areas of Mississippi housing market between the 2000 and 2010 Censuses, as seen in Table IV.3. The greatest

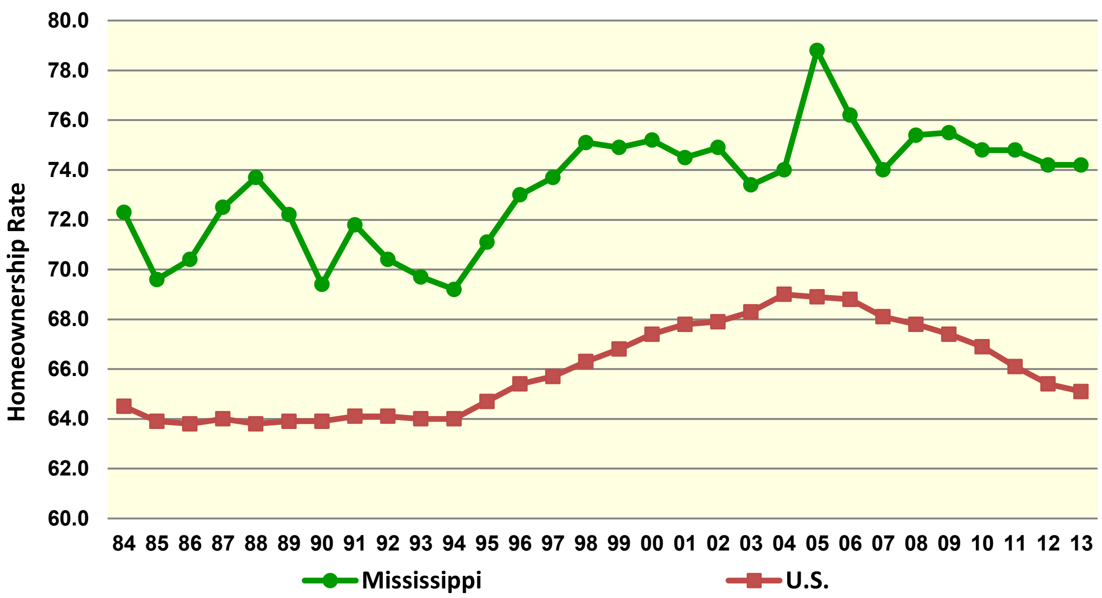
increase was in vacant units, increasing by 35.3 percent. Owner-occupied units and renter-occupied units increased by 4.3 and 21.1 percent, respectively.

Table IV.3
Housing Units by Tenure
Non-Entitlement Area of Mississippi
2000 & 2010 Census SF1 Data

Tenure	2000 Census		2010 Census		% Change 00–10
	Units	% of Total	Units	% of Total	
Occupied Housing Units	899,175	90.1%	975,525	87.9%	8.5%
Owner-Occupied	674,688	75.0%	703,764	72.1%	4.3%
Renter-Occupied	224,487	25.0%	271,761	27.9%	21.1%
Vacant Housing Units	99,000	9.9%	133,978	12.1%	35.3%
Total Housing Units	**998,175**	**100.0%**	**1,109,503**	**100.0%**	**11.15%**

The Census Bureau estimates homeownership rates annually. These data on homeownership rates are presented in Diagram IV.1, below. This diagram compares homeownership rates for the state of Mississippi and the U.S. from 1986 through 2013 and shows that Mississippi had consistently higher homeownership rates throughout this period. Homeownership rates spiked to almost 79 percent in 2005, but have leveled off around 74 percent in more recent years.

Diagram IV.1
Homeownership Rates
State of Mississippi
Census Data, 1984 - 2013



Vacant Housing

At the time of the 2000 Census, the vacant housing stock included 99,000 units. By 2010 this figure had reached 133,978, as shown in Table IV.4, on the following page. A substantial portion, or approximately one-fifth, of the vacant units in both years was for seasonal, recreational, or occasional use. The number of vacant units for rent increased

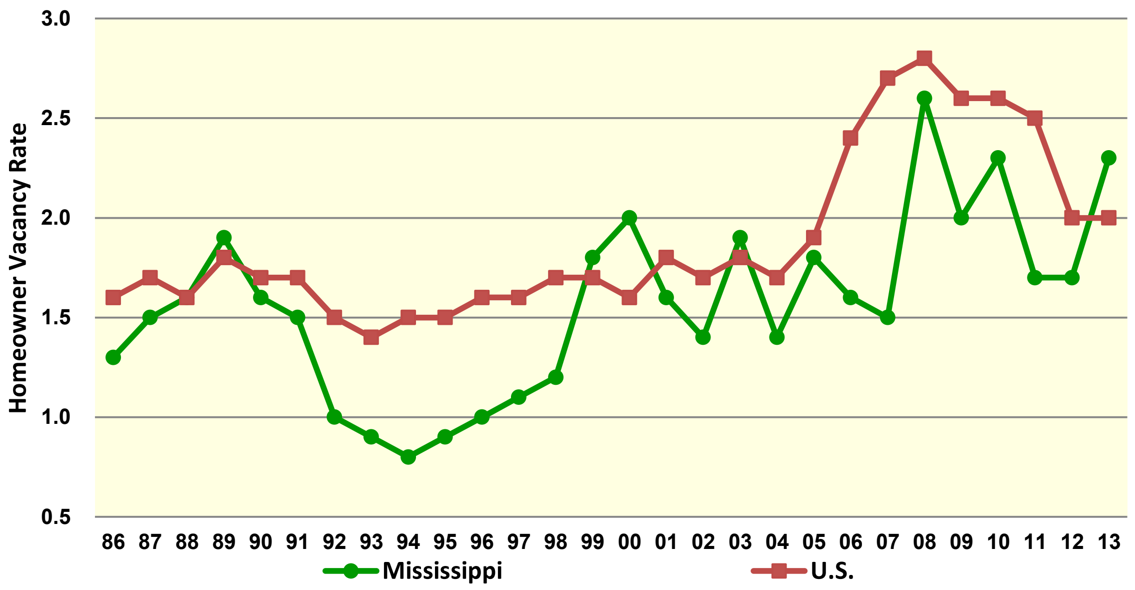
over the decade and accounted for 24.2 percent of vacant units in 2010. A substantial increase was observed in the number of "other vacant" units, which increased by over 45 percent over the decade and came to account for 40.1 percent of all vacant units by 2010. The units accounted for the largest share of vacant units in both 2000 and 2010.

Table IV.4
Disposition of Vacant Housing Units
Non-Entitlement Area of Mississippi
2000 & 2010 Census SF1 Data

Disposition	2000 Census		2010 Census		% Change 00–10
	Units	% of Total	Units	% of Total	
For Rent	21,591	21.8%	32,441	24.2%	50.25%
For Sale	10,641	10.7%	14,274	10.7%	34.14%
Rented or Sold, Not Occupied	8,687	8.8%	5,959	4.4%	-31.40%
For Seasonal, Recreational, or Occasional Use	20,801	21.0%	27,347	20.4%	31.47%
For Migrant Workers	287	0.3%	286	0.2%	-.35%
Other Vacant	36,993	37.4%	53,671	40.1%	45.08%
Total	**99,000**	**100.0%**	**133,978**	**100.0%**	**35.3%**

Census data regarding homeowner vacancy rates, as drawn from the annual surveys conducted by the Census Bureau, were also examined. As shown in Diagram IV.2, the homeowner vacancy rate in the state of Mississippi has intersected national rates at various points since 1986, had remained lower than the national average since 2005 until 2012 when homeowner vacancy rates rose again. In 2013, Mississippi homeowner vacancy rates were around 2.3 percent, while the national level was around 2.0 percent.

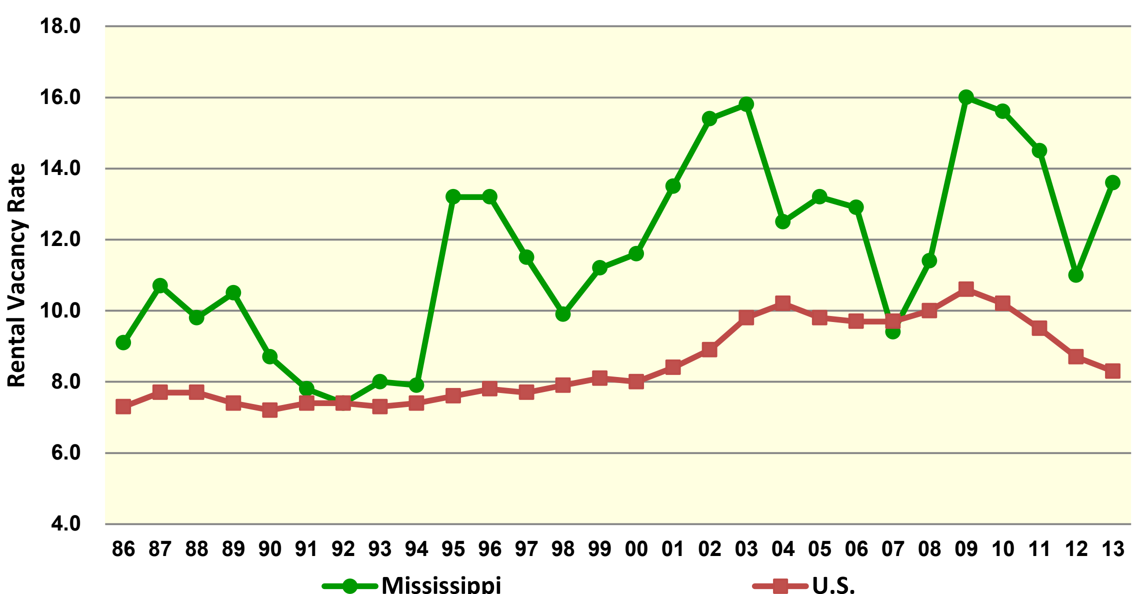
Diagram IV.2
Homeowner Vacancy Rate
State of Mississippi
Census Data, 1984 - 2013



The rental vacancy rate for the State is shown in Diagram IV.3, on the following page. The rental vacancy rate has seen fluctuation similar to that of the homeowner vacancy rate, but

has intersected the national rate at only a couple points. The Mississippi rental vacancy rate has remained consistently higher than the national level. The rental vacancy rates reached its highest point in 2009, afterwards declining and rising again in 2013. In 2013, the rental vacancy rate for Mississippi was close to 14 percent while the national level hovered around 8 percent.

Diagram IV.3
Rental Vacancy Rate
State of Mississippi
Census Data, 1984 - 2014

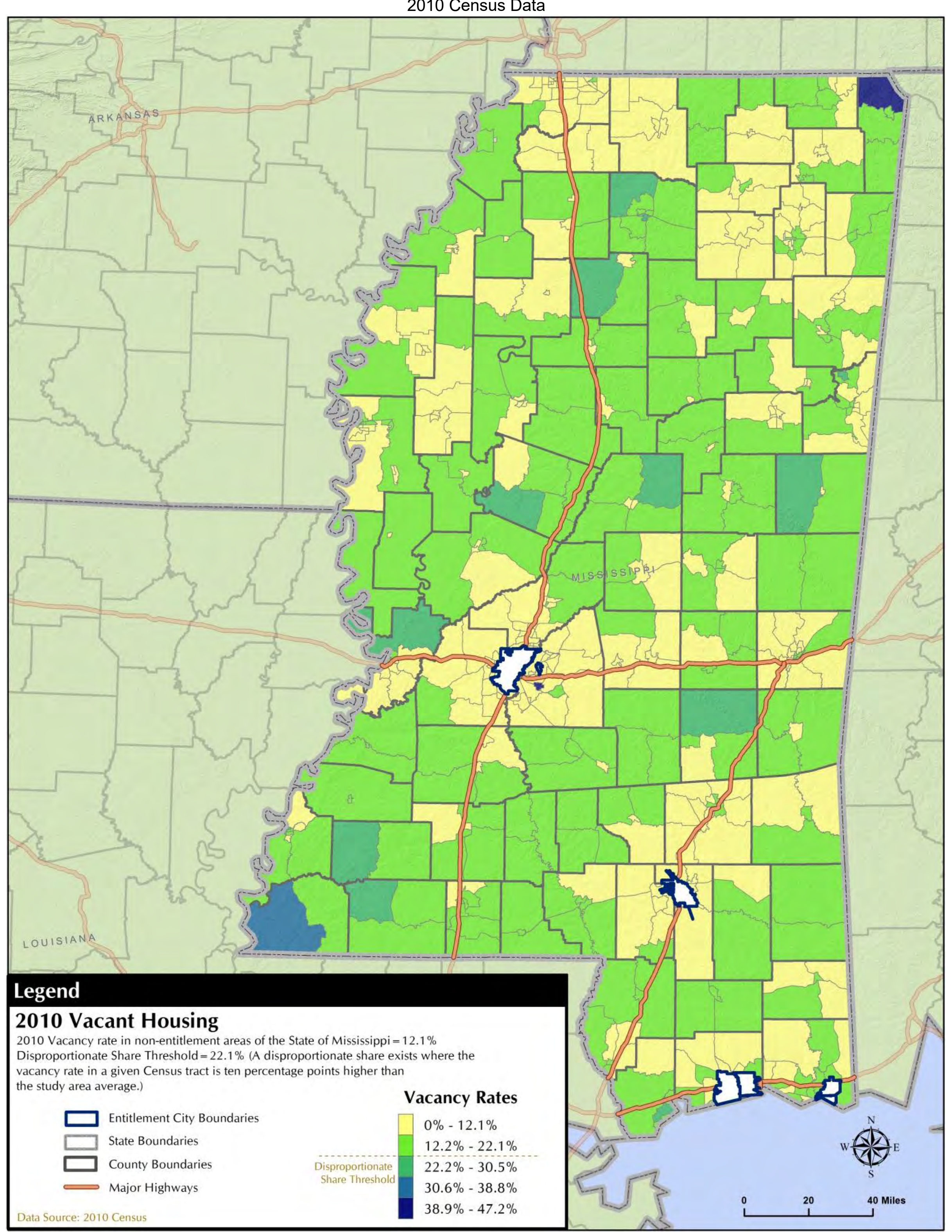


In 2010, vacant units were disproportionately concentrated in Census tracts in the extreme northeast and southwest corners of the state, as well as a handful or tracts in between, as shown in Map IV.1, on the following page.

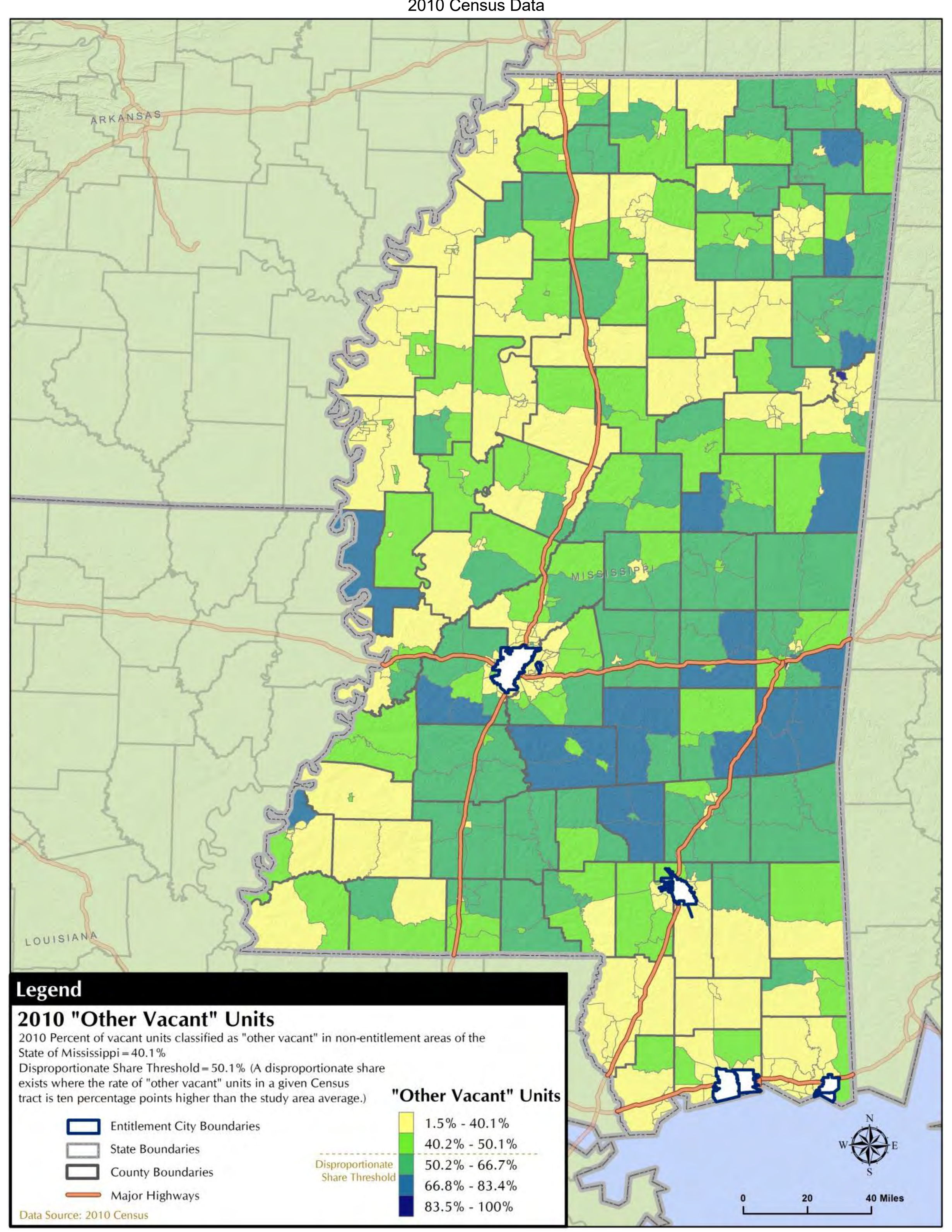
While high numbers of vacant units can be problematic, there are many reasons that housing units may be unoccupied, and vacancies can be temporary. However, units classified as "other vacant" units are a greater cause for concern, as these units are not available to the housing market, and if located in close proximity to each other may represent a blighting influence. On that count, the relatively rapid pace at which these units increased in number between the two Censuses, around 45 percent over the decade, is troubling, and blight is a concern in any areas in which such units were observed to be disproportionately concentrated.

In fact, there were several areas in Mississippi that held disproportionate shares of "other vacant" units in 2010, as shown in Map IV.2. In that year, an area in which more than 40.1 percent of vacant units were classified as "other vacant" would be said to have an above-average share of such units, and where they appeared in concentrations above 50.1 percent they would be considered to be "disproportionately concentrated". The highest concentrations of such units appeared largely in rural Census tracts in the east and center of the state, as well as in one tract to the north of Columbus.

Map IV.1
Vacant Housing Units
Non-entitlement areas of Mississippi
2010 Census Data



Map IV.2
"Other Vacant" Housing Units
Non-entitlement areas of Mississippi
2010 Census Data



AGE OF THE HOUSING STOCK

The age of the housing stock is also reported in the 2012 American Community Survey. The age of the housing stock has been grouped into nine categories, ranging from 1939 or earlier through 2005 or later. Table IV.5 shows that substantial numbers of housing units were added to the stock in the most recent decades. Units built since 1990 accounted for 39.3 percent of the housing stock. Three-fourths of all housing units were built since 1970.

Table IV.5
Households by Year Home Built
Non-Entitlement Area of Mississippi
2000 Census SF3 & 2013 Five-Year ACS Data

Year Built	2000 Census		2013 Five-Year ACS	
	Households	% of Total	Households	% of Total
1939 or Earlier	55,279	6.1%	42,032	4.4%
1940 to 1949	43,323	4.8%	31,315	3.3%
1950 to 1959	77,363	8.6%	61,904	6.5%
1960 to 1969	126,329	14.0%	106,623	11.2%
1970 to 1979	199,209	22.2%	178,756	18.8%
1980 to 1989	176,655	19.6%	155,870	16.4%
1990 to 1999	221,069	24.6%	189,104	19.9%
2000 to 2004	.	.	175,454	18.5%
2005 or Later	.	.	8,793	.9%
Total	**899,227**	**100.0%**	**949,851**	**100.0%**

SUBSTANDARD UNITS

The Mississippi Development Authority defines units classified as "standard condition" and units classified as "substandard condition but suitable for rehabilitation," as follows:

Units that are classified as standard condition meet all state and local codes. Units that are classified to be in "substandard condition but suitable for rehabilitation" are both structurally and financially feasible to rehabilitate to a condition that meet all state and local codes.

C. HOUSING PRODUCTION AND AFFORDABILITY

HOUSING PRODUCTION

The Census Bureau reports the number of residential building permits issued each year for permit issuing places, including those in the state of Mississippi. Reported data are single family units, duplexes, and tri- and four-plex units and all units within facilities comprising five or more units.

The number of single-family and multi-family units permitted in the non-entitlement areas of Mississippi has varied by year between 1980 and the present. With the fluctuation, there was a general increase until 2006. After 2006, there was a dramatic drop off in production, which has only slightly begun to recover in recent years. The production of single family units has greatly outnumbered the addition of new multifamily units consistently throughout this time.

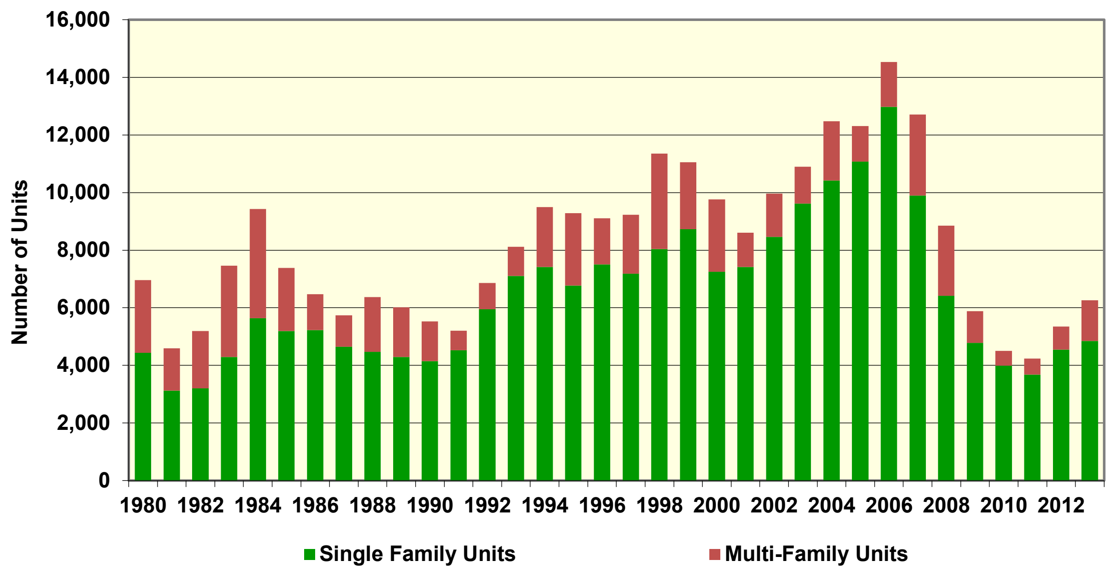


Table IV.6, on the following page, presents data on the number of manufactured homes placed in Mississippi, along with data regarding average price. Manufactured homes do not require a permit and are therefore not included in the previous data regarding housing permit activity.

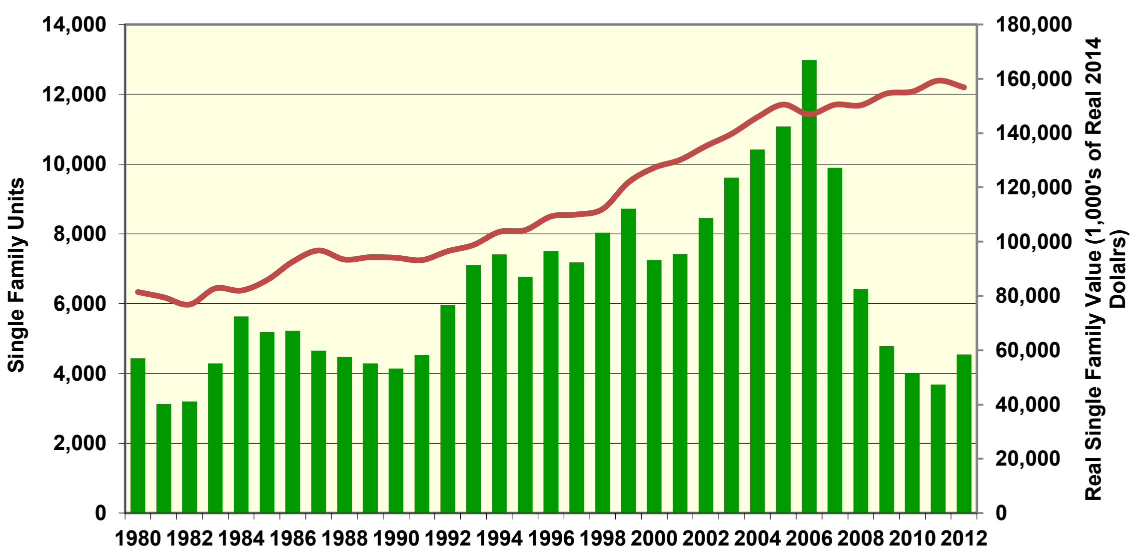
In total, there were 122,640 manufactured homes placed in Mississippi between 1990 and 2013, including roughly 78,220 single-wide and 52,520 double-wide homes. The figures varied by year, but the number of units being placed has declined as the price per unit has risen. The price for mobile homes in Mississippi is lower than the national average for both single-wide and double-wide units.

Table IV.6
Manufactured Housing Unit Placement and Price
State of Mississippi
Census Data, 1990 – 2013

Year	Units Placed in Service in			Average Home Price, Nominal Dollars					
	State of Mississippi			State of Mississippi			U.S. Average		
	Single-wide	Double-wide	Total*	Single-wide	Double-wide	Total	Single-wide	Double-wide	Total
1990	3,000	900	3,900	17,300	27,200	19,600	19,800	36,600	27,800
1991	2,900	600	3,500	17,100	31,000	19,700	19,900	36,900	27,700
1992	3,700	1,200	4,900	19,300	30,200	22,000	20,600	37,200	28,400
1993	4,500	1,500	6,000	19,400	36,200	23,700	21,900	39,600	30,500
1994	5,700	2,400	(S)	22,400	39,100	27,700	23,500	42,000	32,800
1995	7,640	3,060	10,700	24,600	42,500	29,900	25,800	44,600	35,300
1996	7,800	3,400	11,200	26,000	44,800	31,700	27,000	46,200	37,200
1997	6,240	4,340	10,580	27,500	45,900	35,400	27,900	48,100	39,800
1998	6,640	5,420	12,060	28,500	48,700	37,700	28,800	49,800	41,600
1999	6,100	5,300	11,400	29,600	49,600	39,000	29,300	51,100	43,300
2000	4,500	3,900	8,400	29,200	50,700	39,100	30,200	53,600	46,400
2001	2,500	2,500	5,000	28,900	51,500	40,700	30,400	55,200	48,900
2002	1,600	2,100	3,700	27,400	53,200	42,500	30,900	56,100	51,300
2003	1,200	2,000	3,200	27,900	53,700	43,800	31,900	59,700	54,900
2004	1,200	1,300	2,500	28,000	57,900	44,200	32,900	63,400	58,200
2005	1,600	1,500	3,100	31,700	61,000	46,000	34,100	68,700	62,600
2006	2,300	1,800	4,100	34,700	64,200	48,400	36,100	71,300	64,300
2007	1,900	2,300	4,200	36,200	66,100	53,700	37,300	74,200	65,400
2008	2,200	1,800	4,000	35,200	68,600	50,500	38,000	75,800	64,700
2009	1,400	1,100	2,500	37,900	71,700	52,900	39,600	74,500	63,100
2010	800	1,100	1,900	38,100	66,100	55,900	39,500	74,500	62,800
2011	800	800	1,600	37,100	76,100	59,400	40,600	73,900	60,500
2012	800	1,100	1,900	42,900	73,400	62,200	41,100	75,700	62,200
2013	1,200	1,100	2,300	40,900	75,700	57,600	42,200	78,600	64,000

HOUSING PRICES

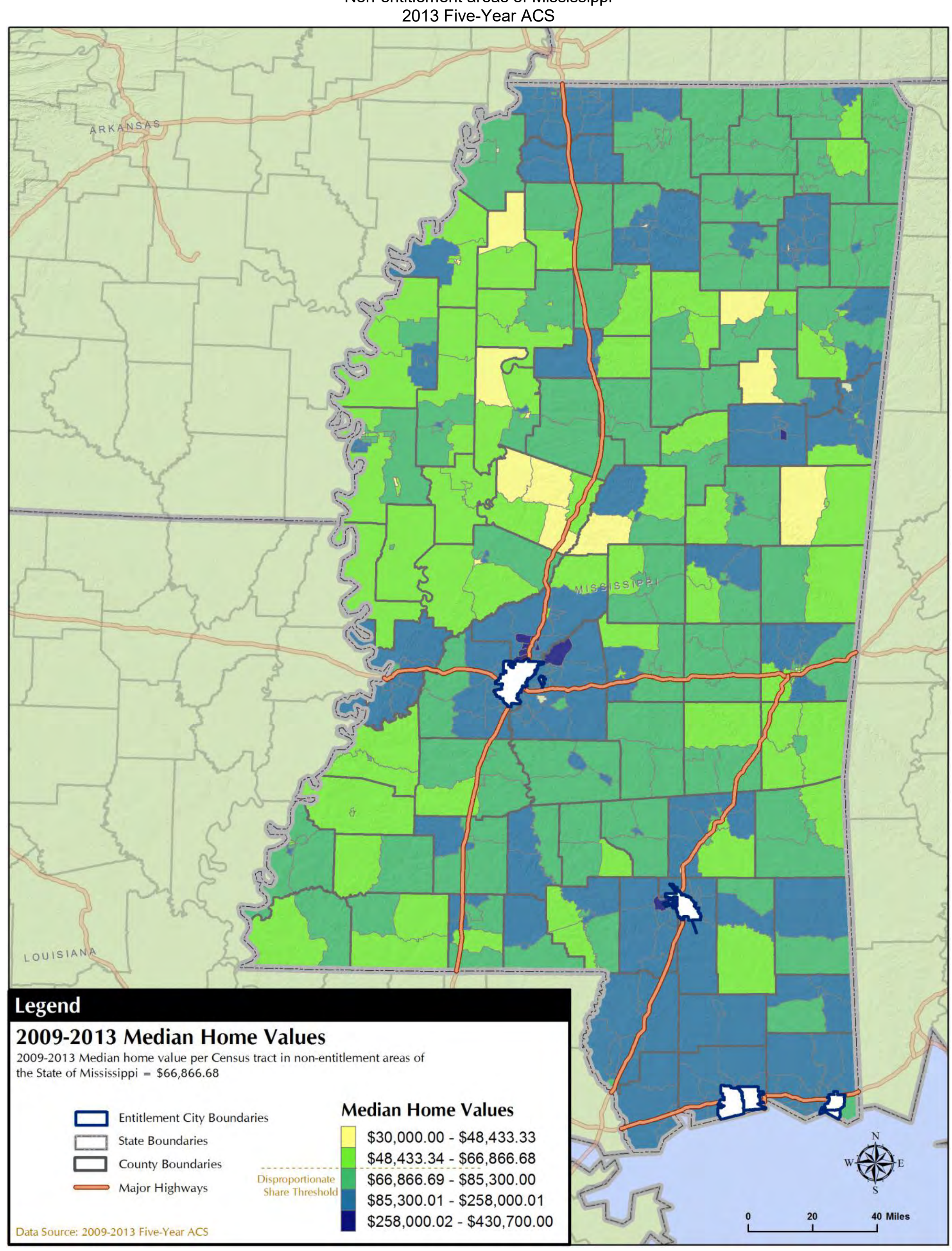
The Census Bureau also reports the value of construction appearing on a building permit, excluding the cost of land and related land development. As shown below in Diagram IV.5, on the following page, the construction value of single-family dwellings generally increased from 1980 through 2012. Even as the number of single family units produced dropped sharply in 2008, the real single family home value was not as significantly impacted. The real single family value ended near $160,000 in 2012.



The distribution of owner-occupied home values in the State of Mississippi, as reported in the 2012 five-year ACS, is presented in Map IV.3, on the following page. Census tracts with the highest home values were clustered near major cities, including Jackson, Oxford, Starkville, West Hattiesburg, and the suburban area to the south of Memphis.

Map IV.4 illustrates data on median contract rent prices by Census tracts. Relatively high rental costs were observed in Census tracts surrounding major cities of the state, particularly around entitlement cities and in the suburban area to the south of Memphis, Tennessee. In some of those areas, median rental costs ranged from $1,050.01 and $2,001.00. By contrast, rental costs were typically low in rural tracts with relatively low population densities.

Map IV.3
Median Home Value by Census Tract
Non-entitlement areas of Mississippi
2013 Five-Year ACS



Map IV.4
Median Contract Rent by Census Tract
Non-entitlement areas of Mississippi
2013 Five-Year ACS

As seen in Table IV.7, the median rent in Mississippi in 2010 was $510, compared to median rent in 2000 at $439. The median home value in 2010 was $99,900, compared to the median home value in 2000 at $71,400.

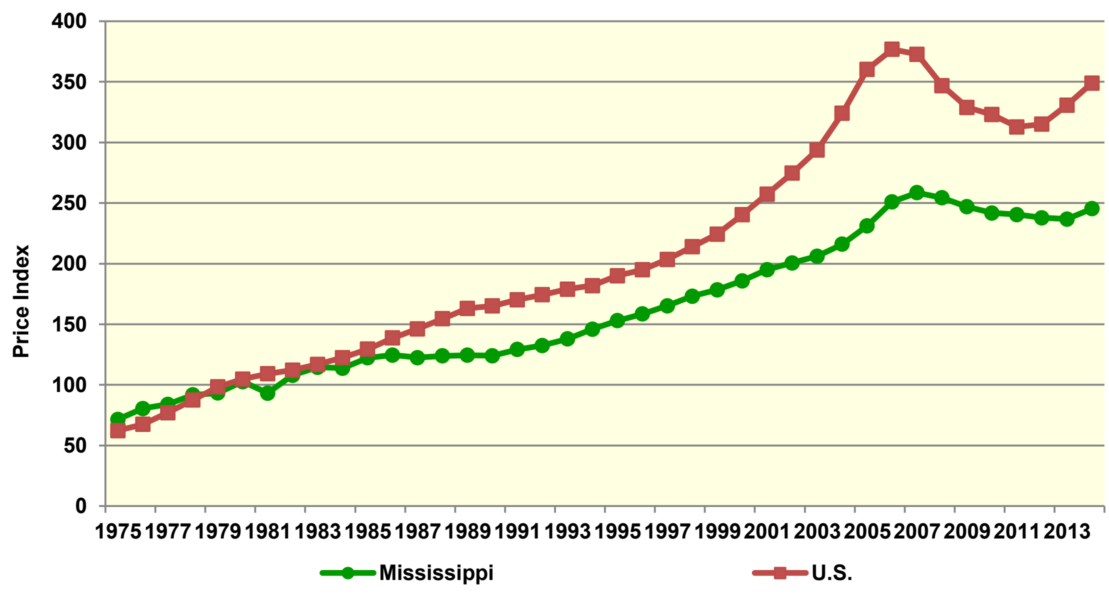
Table IV.7
Median Housing Costs
State of Mississippi
2000 Census SF3 & 2013 Five-Year ACS Data

Housing Cost	2000	2010
Median Contract Rent	$439	$510
Median Home Value	$71,400	$99,900

Another indicator of housing cost was provided by the Federal Housing Finance Agency (FHFA). The FHFA, the regulatory agency for Fannie Mae and Freddie Mac, tracks average housing price changes for single-family homes and publishes a Housing Price Index (HPI) reflecting price movements on a quarterly basis. This index is a weighted repeat sales index, meaning that it measures average price changes in repeat sales or refinancing on the same properties. This information was obtained by reviewing repeat mortgage transactions on single-family properties whose mortgages have been purchased or securitized by Fannie Mae or Freddie Mac since January 1975.[6] There are over 31 million repeat transactions in this database, which is computed monthly. All indexes, whether state or national, were set equal to 100 as of the first quarter of 2000.

Diagram IV.6 shows the housing price index for one quarter from each year from 1975 through 2014. As seen therein, the Mississippi index has been lower than the U.S. index since the late 1980s. As with the national index, the Mississippi index saw a dip during the recent recession, but have leveled out and started to climb slightly.

Diagram IV.6
Housing Price Index
State of Mississippi vs. U.S
FHFA Second Quarter Data, 1975 – 2014: 1980 4Q = 100



[6] Office of Federal Housing Enterprise Oversight, News Release, December 1, 2006.

D. Household Housing Problems

Housing Problems

While the Census Bureau does not delve deeply into the physical condition of the housing stock, selected questions from the decennial census and the American Community Survey do indeed address housing difficulties being faced by householders. These housing difficulties are represented by three different conditions: overcrowding, lack of complete plumbing or kitchen facilities, and cost burden. Each of these conditions is addressed on the following pages.

Overcrowding

HUD defines an overcrowded household as one having from 1.01 to 1.50 occupants per room and a severely overcrowded household as one with more than 1.50 occupants per room. This type of condition can be seen in both renter and homeowner households. Table IV.8 shows that 20,180 households in non-entitlement areas of Mississippi were overcrowded in 2013, a reduction from 29,705 in 2000. Severely overcrowded households comprised 5,964 households, a decrease from 12,861 households in 2000. By 2013, the share of overcrowded households had fallen from 3.3 to 2.1 percent since 2000, and the share of severely overcrowded households had fallen from 1.4 to 0.6 percent. In both years, overcrowding and severe overcrowding were more prevalent in renter-occupied housing units than in owner-occupied units.

Table IV.8
Overcrowding and Severe Overcrowding
Non-Entitlement Area of Mississippi
2000 Census SF3 & 2013 Five-Year ACS Data

Data Source	No Overcrowding		Overcrowding		Severe Overcrowding		Total
	Households	% of Total	Households	% of Total	Households	% of Total	
Owner							
2000 Census	651,126	96.5%	17,695	2.6%	6,066	.9%	674,887
2013 Five-Year ACS	672,343	98.2%	9,700	1.4%	2,489	.4%	684,532
Renter							
2000 Census	205,535	91.6%	12,010	5.4%	6,795	3.0%	224,340
2013 Five-Year ACS	251,364	94.7%	10,480	3.9%	3,475	1.3%	265,319
Total							
2000 Census	856,661	95.3%	29,705	3.3%	12,861	1.4%	899,227
2013 Five-Year ACS	923,707	97.2%	20,180	2.1%	5,964	.6%	949,851

Households Lacking Complete Kitchen or Plumbing Facilities

According to the Census Bureau, a housing unit is classified as lacking complete kitchen facilities when any of the following is not present in a housing unit: a sink with piped hot and cold water, a range or cook top and oven, and a refrigerator. Likewise, a housing unit is categorized as lacking complete plumbing facilities when any of the following are missing from the housing unit: piped hot and cold water, a flush toilet, and a bathtub or shower. A lack of these facilities indicates that the housing unit is likely to be unsuitable.

Around 0.8 percent of the housing stock of non-entitlement areas of Mississippi lacked complete kitchen facilities in 2013. This figure represented about 8,041 units, as shown in Table IV.9, below. This was an increase from the 2000 by 1,371 units, while the rate increased by 0.1 percent.

Table IV.9
Households with Incomplete Kitchen Facilities
Non-Entitlement Area of Mississippi
2000 Census SF3 & 2013 Five-Year ACS Data

Households	2000 Census	2013 Five-Year ACS
With Complete Kitchen Facilities	892,557	941,810
Lacking Complete Kitchen Facilities	6,670	8,041
Total Households	**899,227**	**949,851**
Percent Lacking	**.7%**	**.8%**

Similar proportions of housing units lacked complete plumbing facilities in both years, as shown in Table IV.10, below. In 2000, some 0.9 percent of housing units had inadequate plumbing facilities. By 2012, this figure had decreased to 0.6 percent, with 5,616 households.

Table IV.10
Households with Incomplete Plumbing Facilities
Non-Entitlement Area of Mississippi
2000 Census SF3 & 2013 Five-Year ACS Data

Households	2000 Census	2013 Five-Year ACS
With Complete Plumbing Facilities	890,992	944,235
Lacking Complete Plumbing Facilities	8,235	5,616
Total Households	**899,227**	**949,851**
Percent Lacking	**.9%**	**0.6%**

Cost Burden

Another type of housing problem reported in the 2000 Census was cost burden, which occurs when a household has gross housing costs that range from 30 to 49.9 percent of gross household income; severe cost burden occurs when gross housing costs represent 50 percent or more of gross household income. For homeowners, gross housing costs include property taxes, insurance, energy payments, water and sewer service, and refuse collection. If the homeowner has a mortgage, the determination also includes principal and interest payments on the mortgage loan. For renters, this figure represents monthly rent plus utility charges.

According to 2000 Census data, 13.5 percent of households in non-entitlement areas of Mississippi experienced a cost burden at that time. An additional 11.0 percent of households experienced a severe cost burden. By 2012, some 15.9 percent of households were cost-burdened, and the share of households experiencing a severe cost burden had grown to 13.0 percent. This is shown in Table IV.11, on the following page.

Table IV.11
Cost Burden and Severe Cost Burden by Tenure
Non-Entitlement Area of Mississippi
2000 Census & 2013 Five-Year ACS Data

Data Source	Less Than 30%		31%-50%		Above 50%		Not Computed		Total
	Households	% of Total	Households	% of Total	Households	% of Total	Households	% of Total	
Owner With a Mortgage									
2000 Census	205,135	73.1%	43,069	15.3%	29,683	10.6%	2,872	1.0%	280,759
2013 Five-Year ACS	246,516	67.2%	68,890	18.8%	48,928	13.3%	2,492	0.7%	366,826
Owner Without a Mortgage									
2000 Census	148,656	84.7%	12,780	7.3%	8,869	5.1%	5,114	2.9%	175,419
2013 Five-Year ACS	268,965	84.7%	26,541	8.4%	17,068	5.4%	5,132	1.6%	317,706
Renter									
2000 Census	110,338	50.7%	35,073	16.1%	35,701	16.4%	36,625	16.8%	217,737
2013 Five-Year ACS	103,800	39.1%	55,880	21.1%	57,441	21.6%	48,198	18.2%	265,319
Total									
2000 Census	464,129	68.9%	90,922	13.5%	74,253	11.0%	44,611	6.6%	673,915
2013 Five-Year ACS	619,281	65.2%	151,311	15.9%	123,437	13.0%	55,822	5.9%	949,851

As seen above, the most common housing problems are cost burdens. A total of 28.9 percent of Mississippi households in non-entitlement areas were estimated to have a cost burden or severe cost burden in 2013.

E. Lead-Based Paint Hazards and Actions to Overcome Hazards

Lead-Based Paint Hazards

Older homes, particularly those built prior to 1978, have a greater likelihood of lead-based paint hazards than homes built after 1978, when lead as an ingredient in paint was banned. Indeed, environmental issues play an important role in the quality of housing. Exposure to lead-based paint, which is more likely to occur in these older homes, is one of the most significant environmental threats posed to homeowners and renters.

Medical understanding of the harmful effects of lead poisoning on children and adults in both the short- and long-term is increasing. Evidence shows that lead dust is a more serious hazard than ingestion of lead-based paint chips. Dust from surfaces with intact lead-based paint is pervasive and poisonous when inhaled or ingested. Making the situation more difficult is the fact that lead dust is so fine that it cannot be collected by conventional vacuum cleaners.

Lead-based paint was banned from residential use because of the health risk it posed, particularly to children. Homes built prior to 1980 have some chance of containing lead-based paint on interior or exterior surfaces. The chances increase with the age of the housing units. HUD has established estimates for determining the likelihood of housing units containing lead-based paint. These estimates are as follows:

- 90 percent of units built before 1940;
- 80 percent of units built from 1940 through 1959; and
- 62 percent of units built from 1960 through 1979.

Other factors used to determine the risk for lead-based paint problems include the condition of the housing unit, tenure and household income. Households with young children are also at greater risk because young children have more hand-to-mouth activity and absorb lead more readily than adults. The two factors most correlated with higher risks of lead-based paint hazards are residing in rental or lower-income households. Low-income residents are less likely to be able to afford proper maintenance of their homes, leading to issues such as chipped and peeling paint, and renters are not as likely or are not allowed to renovate their rental units.

National Efforts to Reduce Lead-Based Paint Hazards

In 1991 Congress formed HUD's Office of Healthy Homes and Lead Hazard Control to eradicate lead-based paint hazards in privately-owned and low-income housing in the U.S. One way it has done this is by providing grants for communities to address their own lead paint hazards. Other responsibilities of this office are enforcement of HUD's lead-based paint regulations, public outreach and technical assistance, and technical studies to help protect children and their families from health and safety hazards in the home.[7]

Then in 1992, to address the problem more directly, Congress passed the Residential Lead-Based Paint Hazard Reduction Act, also known as Title X, which developed a comprehensive federal strategy for reducing lead exposure from paint, dust and soil, and provided authority for several rules and regulations, including the following:

1. **Lead Safe Housing Rule** – mandates that federally-assisted or owned housing facilities notify residents about, evaluate, and reduce lead-based paint hazards.
2. **Lead Disclosure Rule** – requires homeowners to disclose all known lead-based paint hazards when selling or leasing a residential property built before 1978. Violations of the Lead Disclosure Rule may result in civil money penalties of up to $11,000 per violation.[8]
3. **Pre-Renovation Education Rule** – ensures that owners and occupants of most pre-1978 housing are given information about potential hazards of lead-based paint exposure before certain renovations happen on that unit.
4. **Lead Renovation, Repair and Painting Program Rule** – establishes standards for anyone engaging in target housing renovation that creates lead-based paint hazards.[9]

A ten-year goal was set in February 2000 by President Clinton's Task Force on Environmental Health Risks and Safety Risks to Children to eliminate childhood lead poisoning in the U.S. as a major public health issue by 2010. As a means to achieve this goal, they released the following four broad recommendations in their "Eliminating Childhood Lead Poisoning: A Federal Strategy Targeting Lead Paint Hazards," report:

1. **Prevent lead exposure in children** by, among other actions, increasing the availability of lead-safe dwellings through increased funding of HUD's lead hazard control program,

[7] "About the Office of Healthy Homes and Lead Hazard Control." 21 February 2011. U.S. Department of Housing and Urban Development. 12 May 2014 <http://www.hud.gov/offices/lead/about.cfm>.
[8] "Lead Programs Enforcement Division - HUD." *Homes and Communities - U.S. Department of Housing and Urban Development (HUD)*. 12 May 2014 <http://www.hud.gov/offices/lead/enforcement/index.cfm>.
[9] "Lead: Rules and Regulations | Lead in Paint, Dust, and Soil | US EPA." *U.S. Environmental Protection Agency*. 31 Dec. 2008 <http://www.epa.gov/lead/pubs/regulation.htm>.

controlling lead paint hazards, educating the public about lead-safe painting, renovation and maintenance work, and enforcing compliance with lead paint laws.
2. **Increase early intervention to identify and care for lead-poisoned children** through screening and follow-up services for at-risk children, especially Medicaid-eligible children, and increasing coordination between federal, state and local agencies who are responsible for lead hazard control, among other measures.
3. **Conduct research** to, for example, develop new lead hazard control technologies, improve prevention strategies, promote innovative ways to decrease lead hazard control costs, and quantify the ways in which children are exposed to lead.
4. **Measure progress and refine lead poisoning prevention strategies** by, for instance, implementing monitoring and surveillance programs.

Continuing these efforts, the U.S. Department of Health and Human Services launched Healthy People 2020, which included the goal of eliminating childhood blood lead levels $\geq 10\ \mu g/dL$.[10] As part of the National Center for Environmental Health, the program works with other agencies to address the problem of unhealthy and unsafe housing through surveillance, research and comprehensive prevention programs.[11]

In 2010, the Environmental Protection Agency (EPA) enacted the Lead Renovation, Repair, and Painting Rule (RRP). This rule requires that any firms performing renovation, repair, and painting projects that disturb lead-based paint in homes, child care facilities and pre-schools built before 1978 must be certified by the EPA.[12]

Lead-Based Paint Hazards for Children

Children's exposure to lead has decreased dramatically over the past few decades due to federal mandates that lead be phased out of items such as gasoline, food and beverage cans, water pipes, and industrial emissions. However, despite a ban in 1978 on the use of lead in new paint, children living in older homes are still at risk from deteriorating lead-based paint and its resulting lead contaminated household dust and soil. Today lead-based paint in older housing remains one of the most common sources of lead exposure for children[13].

Thirty-eight million housing units in the United States had lead-based paint during a 1998 to 2000 survey, down from the 1990 estimate of 64 million. Still, 24 million housing units in the survey contained significant lead-based paint hazards. Of those with hazards, 1.2 million were homes to low-income families with children under 6 years of age.[14]

National Efforts to Reduce Lead Exposure in Children

There have been a number of substantive steps taken by the U.S. to reduce and eliminate blood lead poisoning in children. The Lead Contamination Control Act (LCCA) of 1988

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[10] http://www.cdc.gov/nceh/Lead/
[11] http://www.cdc.gov/nceh/eehs/
[12] http://www2.epa.gov/lead/renovation-repair-and-painting-program
[13] "Protect Your Family". March 2014. *EPA*. Environmental Protection Agency. Web. 2 May 2014. <http://www2.epa.gov/lead/protect-your-family#sl-home>.
[14] Jacobs, David E., Robert P. Clickner, Joey Y. Zhou, Susan M. Viet, David A. Marker, John W. Rogers, Darryl C. Zeldin, Pamela Broene, and Warren Friedman. "The Prevalence of Lead-Based Paint Hazards in U.S. Housing." *Environmental Health Perspectives* 110 (2002): A599-606. *Pub Med.* 12 May 2014 <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1241046&blobtype=pdf>.

authorized the Centers for Disease Control and Prevention (CDC) to make grants to state and local agencies for childhood lead poisoning prevention programs that develop prevention programs and policies, educate the public, and support research to determine the effectiveness of prevention efforts at federal, state, and local levels. The CDC has carried out these activities through its Childhood Lead Poisoning Prevention Program.[15] One of the most significant actions the CDC has taken to lower blood lead levels (BLLs) in children over the past few decades is their gradual changing of the definition of an EBLL. For example, during the 1960s the criteria for an EBLL was ≥60 micrograms per deciliter (μg/dL). It then dropped to ≥40 μg/dL in 1971, to ≥30 μg/dL in 1978, ≥25 μg/dL in 1985, and most recently, ≥ 10 μg/dL in 1991.[16]

Roughly 14 out of every 1,000 children in the United States between the ages of 1 and 5 have blood lead levels greater than 10 micrograms of lead per deciliter of blood. This is the level at which public health actions should be initiated according to the Centers for Disease Control and Prevention.

Results of National Efforts

All of these coordinated and cooperative efforts at the national, state and local levels have created the infrastructure needed to identify high-risk housing and to prevent and control lead hazards. Consequently, EBLLs in U.S. children have decreased dramatically. For example, in 1978 nearly 14.8 million children in the U.S. had lead poisoning; however, by the early 90s that number had dropped substantially to 890,000.[17] According to data collected by the CDC, this number is dropping even more. In 1997, 7.6 percent of children under 6 tested had lead levels ≥10 μg/dL. By 2012, even after the number of children being tested had grown significantly, only 0.62 percent had lead levels ≥10 μg/dL.[18]

Amidst all of this success, a debate exists in the field of epidemiology about the definition of EBLLs in children. A growing body of research suggests that considerable damage occurs even at BLLs below 10 μg/dL. For example, inverse correlations have been found between BLLs <10 μg/dL and IQ, cognitive function and somatic growth.[19] Further, some studies assert that some effects can be more negative at BLLs below 10 μg/dL than above it.[20]

While the CDC acknowledges these associations and does not refute that they are, at least in part, causal, they have yet to lower the level of concern below 10 μg/dL. The reasons

[15] "Implementation of the Lead Contamination Control Act of 1988." Editorial. *Morbidity and Mortality Weekly Report* 01 May 1992: 288-90. 05 Aug. 1998. Centers for Disease Control. 12 May 2014 <http://www.cdc.gov/mmwr/preview/mmwrhtml/00016599.htm>.
[16] Lanphear, MD MPH, Bruce P et al. "Cognitive Deficits Associated with Blood Lead Concentrations" *Public Health Reports* 115 (2000): 521-29. Pub Med. 12 May 2014 <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1308622&blobtype=pdf>.
[17] *Eliminating Childhood Lead Poisoning: A Federal Strategy Targeting Lead Paint Hazards*. Feb. 2000. President's Task Force on Environmental Health Risks and Safety Risks to Children. 12 May 2014 <http://www.cdc.gov/nceh/lead/about/fedstrategy2000.pdf>.
[18] http://www.cdc.gov/nceh/lead/data/StateConfirmedByYear1997-2012.htm
[19] *Preventing Lead Poisoning in Young Children*. Aug. 2005. Centers for Disease Control and Prevention. 12 May 2014 <http://www.cdc.gov/nceh/lead/Publications/PrevleadPoisoning.pdf>.
[20] Matte, MD, MPH, Thomas D., David Homa, PhD, Jessica Sanford, PhD, and Alan Pate. *A Review of Evidence of Adverse Health Effects Associated with Blood Lead Levels < 10 μg/dL in Children*. Centers for Disease Control and Prevention, Work Group of the Advisory Committee on Childhood Lead Poisoning Prevention. 12 May 2014 <http://www.cdc.gov/nceh/lead/ACCLPP/SupplementalOct04/Work%20Group%20Draft%20Final%20Report_Edited%20October%207,%202004%20-%20single%20spaced.pdf>.

the CDC gives for this decision are as follows: it is critical to focus available resources where negative effects are greatest, setting a new level would be arbitrary since no exact threshold has been established for adverse health effects from lead, and the ability to successfully and consistently reduce BLLs below 10 μg/dL has not been demonstrated. [21]

LEAD-BASED PAINT HAZARDS IN MISSISSIPPI

Table IV.12, below, presents data regarding the vintage of households, broken down by presence of children age 6 and under and income. There were 31,232 units built prior to 1940, of which some 3,337 had children present under the age of 6. In addition, there were 275,861 households in units built between 1940 and 1979, with 29,611 households containing children under the age of 6.

Table IV.12
Vintage of Owner-Occupied Households by Income and Presence of Young Children
Non-Entitlement Areas of Mississippi
2007–2011 HUD CHAS Data

Income	One or more children age 6 or younger	No children age 6 or younger	Total
Built 1939 or Earlier			
30% HAMFI or less	255	3,000	3,255
30.1-50% HAMFI	361	3,650	4,011
50.1-80% HAMFI	440	4,565	5,005
80.1%-100.0% HAMFI	360	2,390	2,750
100.1% HAMFI and above	1,921	14,290	16,211
Total	3,337	27,895	31,232
Built 1940 to 1979			
30% HAMFI or less	2,540	22,610	25,150
30.1-50% HAMFI	2,726	32,180	34,906
50.1-80% HAMFI	4,750	42,635	47,385
80.1%-100.0% HAMFI	3,445	23,935	27,380
100.1% HAMFI and above	16,150	124,890	141,040
Total	29,611	246,250	275,861
Built 1980 or Later			
30% HAMFI or less	3,560	21,960	25,520
30.1-50% HAMFI	5,041	26,275	31,316
50.1-80% HAMFI	9,810	42,320	52,130
80.1%-100.0% HAMFI	6,910	27,045	33,955
100.1% HAMFI and above	46,340	196,850	243,190
Total	71,661	314,450	386,111
Total			
30% HAMFI or less	6,355	47,570	53,925
30.1-50% HAMFI	8,128	62,105	70,233
50.1-80% HAMFI	15,000	89,520	104,520
80.1%-100.0% HAMFI	10,715	53,370	64,085
100.1% HAMFI and above	64,411	336,030	400,441
Total	**104,609**	**588,595**	**693,204**

[21] *Preventing Lead Poisoning in Young Children*. Aug. 2005. Centers for Disease Control and Prevention. 12 May 2014. <http://www.cdc.gov/nceh/lead/Publications/PrevleadPoisoning.pdf>.

Table IV.13, below, shows households at risk of lead-based paint by tenure and income. There were 23,010 households at or below 80 percent HAMFI with children aged 6 or younger in units at risk of lead based paint exposure.

Table IV.13
Vintage of Renter-Occupied Households by Income and Presence of Young Children
Non-Entitlement Areas of Mississippi
2007–2011 HUD CHAS Data

Income	One or more children age 6 or younger	No children age 6 or younger	Total
Built 1939 or Earlier			
30% HAMFI or less	740	2,735	3,475
30.1-50% HAMFI	330	2,080	2,410
50.1-80% HAMFI	610	2,345	2,955
80.1%-100.0% HAMFI	230	1,000	1,230
100.1% HAMFI and above	625	2,985	3,610
Total	2,535	11,145	13,680
Built 1940 to 1979			
30% HAMFI or less	8,045	21,840	29,885
30.1-50% HAMFI	5,315	18,125	23,440
50.1-80% HAMFI	5,820	16,320	22,140
80.1%-100.0% HAMFI	1,920	8,045	9,965
100.1% HAMFI and above	5,705	22,095	27,800
Total	26,805	86,425	113,230
Built 1980 or Later			
30% HAMFI or less	9,550	21,245	30,795
30.1-50% HAMFI	6,280	16,960	23,240
50.1-80% HAMFI	6,265	18,390	24,655
80.1%-100.0% HAMFI	2,995	9,455	12,450
100.1% HAMFI and above	8,040	28,940	36,980
Total	33,130	94,990	128,120
Total			
30% HAMFI or less	18,335	45,820	64,155
30.1-50% HAMFI	11,925	37,165	49,090
50.1-80% HAMFI	12,695	37,055	49,750
80.1%-100.0% HAMFI	5,145	18,500	23,645
100.1% HAMFI and above	14,370	54,020	68,390
Total	**62,470**	**192,560**	**255,030**

MISSISSIPPI LEAD REMOVAL EFFORTS

The Mississippi State Department of Health published the Childhood Lead Poisoning in Mississippi: Surveillance Report 2004-2009.[22] The report discussed the number of children tested in Mississippi with elevated blood lead levels. In 2009, some 0.48 percent of children aged six and under had elevated blood lead levels. This was a decrease from 0.87 percent in 2004. The Mississippi State Department of Health's Childhood Lead Poisoning Prevention Program reported that this had decreased even further by 2011, with 0.31 percent of children tested with elevated blood levels.[23]

[22] http://msdh.ms.gov/msdhsite/_static/resources/4509.pdf
[23] http://msdh.ms.gov/msdhsite/_static/resources/5394.pdf

This program has been successful in reducing elevated blood lead levels by providing primary prevention and care coordination services to families of children less than six years of age. Through partnerships with state and federal organizations, universities, and community-based organizations, the program has provided lead and healthy homes primary prevention to connect parents and their families to health services and other resources.

F. Public and Assisted Housing

The state does not have a statewide public housing authority. MDA does not own or operate any public housing units. However, HUD and MDA are concerned about the number of public housing units and their underlying contracts that are at risk of expiring. If this were to happen, some 13,441 public housing units in the state would be eliminated from the affordable housing stock, as indicated in Table IV.14.

Table IV.14
Expiring Multifamily Housing
Non-Entitlement Areas of Mississippi
HUD Multifamily Contracts Database

Expiration Year	Expiring Contracts	Units at Risk
2015	75	2,657
2016	35	1,052
2017	12	355
2018	6	150
2019	15	711
2020+	135	8,516
Total	278	13,441

These housing units that are at risk in Mississippi are distributed throughout the state, as shown in Map IV.5, on the following page. Some of these units are set to expire in 2015, as shown in red.

Map IV.5
Expiring Section 8 Contracts
Non-Entitlement Areas of Mississippi
HUD Multi-Family Assisted Housing Contract Database

ARKANSAS
MISSISSIPPI
LOUISIANA

Legend

HUd Multifamily Projects and Poverty

Data Source: 2013 Five-Year ACS

2009-2013 poverty rates in non-entitlement areas of the State of Mississippi = 21.9%
Disproportionate Share Threshold = 31.9% (A disproportionate share exists where the poverty rate in a given Census tract is ten percentage points higher than the study area average.)

HUD MF Project Expiration Year

2015 2016 2017 2018 2019+

Poverty Rates

1.2% - 21.9%
22% - 31.9%
Disproportionate Share Threshold
32% - 46.3%
46.4% - 60.8%
60.9% - 75.2%

0 20 40 Miles

G. Institutional Barriers to Affordable Housing

The 2015 Housing and Community Development Survey included a question about barriers to affordable housing. Table IV.15, below, shows the responses received. The top responses include the following:

- Cost of land or lot
- Cost of materials
- Cost of Labor
- Not In My Back Yard (NIMBY) mentality
- Lack of affordable development policies

Table IV.15
Do any of the following acts as barriers to the development or preservation of housing?
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Barrier	Number of Citations
Cost of land or lot	56
Cost of materials	44
Cost of labor	44
Not In My Back Yard (NIMBY) mentality	43
Lack of Affordable housing development policies	39
Lack of other infrastructure	28
Lack of available land	27
Lack of sewer system	24
Lack of qualified contractors or builders	24
Construction fees	24
Permitting process	20
Building codes	20
Lack of water system	18
Permitting fees	18
Lot size	18
Density or other zoning requirements	16
ADA codes	13
Impact fees	11
Lack of water	5
Other Barriers	6

H. Summary

In 2000, the Mississippi had 1,161,953 total housing units. Since that time, the total housing stock increased each year, reaching 1,283,165 units in 2013. According to the American Community Survey in 2013, Mississippi's non-entitlement housing stock included 794,855 single family units, and 188,292mobile home units. Of the 1,109,503 housing units counted in non-entitlement areas of Mississippi in the 2010 census, 975,525 units were occupied, with 703,764 counted as owner-occupied and 271,761 counted as renter-occupied. The vacancy rate for non-entitlement areas of the state was 12.1 percent in 2010, an increase of 35.3 percent since 2000. The construction value of single-family dwellings generally increased from 1980 through 2013, reaching close to $160,000.

V. HOUSING AND HOMELESS NEEDS ASSESSMENT

A. INTRODUCTION

This section addresses housing and homeless needs in Mississippi. Specific needs and the priority level of these needs were determined based on data from the 2015 Housing and Community Development Survey, focus groups, public input meetings, and from consultation with representatives of various state and local agencies throughout Mississippi.

B. HOUSING NEEDS ASSESSMENT

The 2014 Housing and Community Development Needs Survey was conducted as part of the process of evaluating housing needs in Mississippi. A total of 132 responses were received from stakeholders throughout non-entitlement areas of the state. One of the first survey questions asked respondents to identify how they would allocate housing and community development resources in the state. Table V.1 shows that human services was the primary focus for funding, with respondents indicating that this category should receive over 23 percent of funding. This was followed by housing at over 20 percent of funding, water systems at almost 14 percent of funding, economic development at 14 percent, infrastructure at 13 percent, public facilities at 12 percent, and all other at less than one percent.

Table V.1
How would allocate your resources among these areas?
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Area	Percentage Allocated
Human Services	23.47%
Housing	20.72%
Water Systems	14.74%
Economic Development	14.22%
Infrastructure	13.33%
Public Facilities	12.60%
All Other	.91%
Total	**100.0%**

Survey respondents were asked to rate the need for a variety of rental and homeowner housing activities. Using the same rating scale as that needed for the Consolidated Plan, respondents were asked to rank the needs as none, low, medium, or high need.

Expressed Housing Needs

Table V.2, on the following page, shows the ranking for several housing activities. First time homebuyers assistance, homeowner housing rehabilitation, energy efficient retrofits and rental housing for very low-income households were seen as the highest priority.

Table V.2
Please rate the need for the following Housing activities.
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
First-time home-buyer assistance	2	9	30	66	42	149
Homeowner housing rehabilitation		15	28	62	44	149
Energy efficient retrofits	1	16	29	61	42	149
Rental housing for very low-income households	2	18	26	60	43	149
Retrofitting existing housing to meet seniors' needs		13	34	59	43	149
Construction of new rental housing	3	16	30	57	43	149
Rental housing rehabilitation	6	9	34	57	43	149
Construction of new for-sale housing	2	13	36	56	42	149
Senior-friendly housing	1	16	33	56	43	149
Supportive housing		14	38	56	41	149
Homeownership in communities of color	4	14	33	54	44	149
Housing demolition	1	16	38	52	42	149
Rental assistance	6	18	32	48	45	149
Preservation of federal subsidized housing	5	19	34	48	43	149
Mixed use housing	3	30	34	39	43	149
Mixed income housing	3	25	38	38	45	149
Downtown housing	3	29	37	35	45	149
Other Housing activities	2	1	1	6	139	149

An additional question was sked regarding how the respondent would allocate housing funds. The results are shown in Table V.3, below. The highest amount of funding would go to owner-occupied rehabilitation, followed by developing singe family housing and down-payment assistance.

Table V.3
How would allocate housing funds among these areas?
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Area	Percentage Allocated
Owner occupied homeowner rehabilitation	21.70%
Development of single family housing	20.38%
Down payment assistance	17.26%
Development of rental housing	14.62%
Rental assistance	13.60%
Rehabilitation of rental housing	12.45%
Total	**100.0%**

C. Unmet Housing Needs

Households that experience one or more housing problems are considered to have unmet housing needs. Housing problems, as presented earlier in this document, include overcrowding, lacking complete kitchen or plumbing facilities, and cost burden. Householders with unmet need can be of any income level, race, ethnicity or family type.

For the purposes presented herein, these data have been segmented by tenure, renters and homeowners, and by percent of median family income.

Table V.4 presents owner-occupied households with housing problems by income as well as family type. A table with the complete data set can be found in Appendix C. In addition, in Appendix C, there are two additional tables that break housing needs down by renter and owner occupied households. There were an estimated 286,647 households with housing problems in 2011. Large families face the highest rate of housing problems, with 35.8 percent of these households facing housing problems in 2011, with a disproportionate share of housing problems at all income levels.

There were 223,992 households under 80 percent median family income (MFI) with housing problems in 2011 in the non-entitlement areas of Mississippi. Some 57.2 percent of households below 80 percent MFI face some sort of housing problem.

Table V.4
Households by Income and Family Status
Non-Entitlement Areas of Mississippi
2007–2011 HUD CHAS Data

Income	Elderly Family	Small Family	Large Family	Elderly Non-Family	Other Household	Total
Housing Problem						
30% HAMFI or less	4,322	32,070	7,386	16,435	22,670	82,883
30.1-50% HAMFI	6,347	28,920	7,780	15,805	16,150	75,002
50.1-80% HAMFI	6,710	30,340	8,135	7,172	13,750	66,107
80.1% HAMFI or more	6,180	30,605	10,785	3,895	11,190	62,655
Total	23,559	121,935	34,086	43,307	63,760	286,647
Total						
30% HAMFI or less	6,021	43,321	9,034	24,543	35,185	118,104
30.1-50% HAMFI	12,648	40,205	9,317	33,970	23,190	119,330
50.1-80% HAMFI	25,710	61,700	14,380	24,673	27,845	154,308
80.1% HAMFI or more	85,290	311,540	48,000	30,590	81,115	556,535
Total	**129,669**	**456,766**	**80,731**	**113,776**	**167,335**	**948,277**

The household type that faces the greatest rate of housing problems is large families, which face housing problems at a rate of 22.5 percent versus 11.2 percent for the total population. Additionally, the lower the income level, the higher the rate of housing problems. At 30 percent MFI or lower, some 70 percent of households faced housing problems.

D. Disproportionate Needs

A disproportionate need exists when the percentage of persons experiencing a housing problem in a group is at least 10 percentage points higher than the jurisdiction's percentage of persons experiencing a housing problem as a whole. Table V.5, on the following page, presents the disproportionate need of households by income and race. The table with the complete data set is provided in Appendix C. Asian households have disproportionate need at income levels between 30 percent and 80 percent MFI. "Other" race households

have disproportionate need of housing problems for households at income levels between 30 and 50 percent MFI, and between 80 and 100 percent MFI. Pacific Islander households also have disproportionate share of housing problems between 0 and 30 percent MFI, although this only represents 35 total households. Hispanic households face a disproportionate share of housing problems at incomes between 30 and 50 percent MFI. Black households also face a disproportionate share of housing problems overall.

Table V.5
Total Households with Housing Problems by Income and Race
Non-Entitlement Areas of Mississippi
2007–2011 HUD CHAS Data

Income	Non-Hispanic by Race/Ethnicity						Hispanic (Any Race)	Total
	White	Black	Asian	American Indian	Pacific Islander	Other Race		
With Housing Problems								
30% HAMFI or less	33,510	46,565	511	261	15	735	1,275	82,872
30.1-50% HAMFI	34,745	37,020	405	280	20	697	1,831	74,998
50.1-80% HAMFI	34,895	28,265	655	286	0	535	1,445	66,081
80.1-100% HAMFI	13,465	7,760	336	125	0	191	395	22,272
100.1% HAMFI or more	28,050	10,420	391	135	0	244	1,185	40,425
Total	144,665	130,030	2,298	1,087	35	2,402	6,131	286,648
Total								
30% HAMFI or less	49,273	64,837	772	375	15	981	1,830	118,083
30.1-50% HAMFI	61,970	53,280	511	490	20	938	2,146	119,355
50.1-80% HAMFI	90,495	58,130	1,100	722	0	1,072	2,771	154,290
80.1-100% HAMFI	56,460	28,680	541	405	20	422	1,217	87,745
100.1% HAMFI or more	361,815	92,550	3,736	1,605	45	2,679	6,405	468,835
Total	**620,013**	**297,477**	**6,660**	**3,597**	**100**	**6,092**	**14,369**	**948,308**

E. Priority Housing Needs Rankings

Since the Consolidated Plan guidelines were first requested by HUD in the mid 1990's, Mississippi has ranked and prioritized its housing needs, set goals for meeting these needs, and estimated unmet housing needs. This has been expressed by the Consolidated Plan Table 2A. In establishing its five-year priorities and assigning priority need levels, the state considered both of the following:

- Categories of lower- and moderate-income households most in need of housing,
- Activities and sources of funds that can best meet the needs of those identified households.

Priority need rankings were assigned to households to be assisted according to the following HUD categories:

High Priority: Activities to address this need will be funded by the MDA during the five-year period. Identified by use of an 'H.'

Medium Priority: If funds are available, activities to address this need may be funded by the MDA during the five-year period. Also, the MDA may take other actions to help other entities locate other sources of funds. Identified by use of an 'M.'

Low Priority: The MDA will not directly fund activities to address this need during the five-year period, but other entities' applications for federal assistance might be supported and found to be consistent with this Plan. In order to commit CDBG, HOME or ESG Program monies to a Low Priority activity, the MDA would have to amend this Consolidated Plan through the formal process required by the Consolidated Plan regulations at 24 CFR Part 91. Identified by use of an 'L.'

No Such Need: The MDA finds there is no need or that this need is already substantially addressed. The MDA will not support applications for federal assistance for activities where no need has been identified. Shown by use of an 'N.'

PRIORITY NEEDS ANALYSIS AND STRATEGIES

Rankings have been assigned to each of the required categories for HUD Housing Priority Needs Table 2A, on the following page. The size of each group having unmet needs, coupled with input received at the public input meetings as well as the degree of need expressed during the 2014 Housing and Community Development Survey, guided the ranking process for the MDA. No groups received less than a medium need.

Table 2A
State of Mississippi
Priority Housing Needs Table for 2015-2019 Consolidated Plan

PRIORITY HOUSING NEEDS (Households)			Priority	Unmet Need
Renter	Small Related	0-30%	H	18,860
		31-50%	H	14,980
		51-80%	H	12,035
	Large Related	0-30%	H	4,485
		31-50%	H	4,325
		51-80%	H	2,965
	Elderly	0-30%	H	5,517
		31-50%	H	5,466
		51-80%	H	2,967
	All Other	0-30%	H	14,185
		31-50%	H	10,035
		51-80%	H	7,315
Owner	Small Related	0-30%	M	13,210
		31-50%	M	13,940
		51-80%	H	18,305
	Large Related	0-30%	H	2,901
		31-50%	H	3,455
		51-80%	H	5,170
	Elderly	0-30%	H	15,240
		31-50%	H	16,686
		51-80%	H	10,915
	All Other	0-30%	M	8,485
		31-50%	M	6,115
		51-80%	H	6,435
Non-Homeless Special Needs	Elderly	0-80%	H	39,247
	Frail Elderly	0-80%	H	25,766
	Severe Mental Illness	0-80%	H	91
	Alcohol/Drug Abuse	0-80%	H	380
	HIV/AIDS	0-80%	H	14
	Victims of Domestic Violence	0-80%	H	175

F. Homeless Needs Assessment

Homeless Overview

According to HUD, a national focus on homeless rights during the Reagan administration helped to form much of the way homeless needs are addressed today. During the early 1980s, the administration determined that the needs of the homeless were best handled on a state or local level rather than a national level. In 1983, a federal task force was created to aid local and regional agencies in their attempts to resolve homeless needs, and in 1986, the Urgent Relief for the Homeless Act was introduced, which chiefly established basic emergency supplies for homeless persons such as food, healthcare and shelter. The act was later renamed the McKinney-Vento Act, after the death of one of its chief legislative sponsors, and was signed into law in 1987.

HUD has historically defined the term "homeless" according to the McKinney-Vento Act, which states that a person is considered homeless if he/she lacks a fixed, regular and adequate night-time residence. A person is also considered homeless if he/she has a primary night time residence that is:

- A supervised publicly or privately operated shelter designed to provide temporary living accommodations.
- An institution that provides a temporary residence for individuals intended to be institutionalized.
- A public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings.[24]

Within this context, homelessness can be defined as the absence of a safe, decent, stable place to live. A person who has no such place to live stays wherever he or she can find space, such as an emergency shelter, an abandoned building, a car, an alley or any other such place not meant for human habitation.

Homeless sub-populations tend to include those with substance abuse and dependency issues, those with serious mental illness, persons living with HIV/AIDS, women and other victims of domestic violence, emancipated youth, and veterans.

The recent rise in homeless population finds cause in many areas. These include declines in personal incomes, losing jobs, the lack of affordable housing for precariously-housed families and individuals who may be only a paycheck or two away from eviction. It takes only one additional personal setback to precipitate a crisis that would cause homelessness for those at risk of homelessness. Furthermore, deinstitutionalization of patients from psychiatric hospitals without adequate community clinic and affordable housing support creates situations primed for homelessness. Personal vulnerabilities also have increased, with more people facing substance abuse problems, diminished job prospects, or health difficulties while lacking medical coverage.

[24] The term "homeless individual" does not include any individual imprisoned or otherwise detained pursuant to an Act of Congress or a state law (42 U.S.C. § 11302(c)). HUD also considers individuals and families living in overcrowded conditions to be "at risk" for homelessness.

Satisfying the needs of the homeless population therefore represents both a significant public policy challenge as well as a complex problem due to the range of physical, emotional and mental service needs required.

HEARTH ACT

On May 20, 2009, President Obama signed into law a bill to reauthorize HUD's McKinney-Vento Homeless Assistance Programs. The McKinney-Vento reauthorization provisions are identical to the Homeless Emergency Assistance and Rapid Transition to Housing Act (HEARTH) Act. The HEARTH Act was included by amendment to the Helping Families Save Their Homes Act.

Due to the HEARTH Act, HUD's homeless assistance programs now place greater emphasis on homeless prevention and rapid re-housing, especially for homeless families and continued emphasis on creating permanent supporting housing for people experiencing chronic homelessness. Additionally, rural communities now have the option to apply for funding under different guidelines, which offer more flexibility for the unique circumstances of rural homelessness.

Additionally, HUD's definition of homelessness has changed; it now includes those at imminent risk of homelessness. HUD previously defined homelessness more narrowly as persons in literal homeless situations. Immanent risk of homelessness now includes situations where a person must leave his or her current housing within the next 14 days, with no other place to go and no resources or support networks to obtain housing.

The Emergency Shelter Grant is now known as the Emergency Solutions Grant (ESG), signifying the grant program's ability to fund homeless prevention and re-housing programs, as well as traditional emergency shelters. The HEARTH Act authorized programs such as, short- or medium-term rental assistance, legal services, credit repair, final month's rental assistance, moving or relocation activities, and stabilization services may now be funded using ESG funds. At least 40 percent of ESG funds now must be dedicated to prevention and re-housing activities, although grantees do not have to reduce financial support for traditional shelter and outreach services previously using ESG funds. [25]

In December, 2011, HUD continued its implementation of the HEARTH Act by proposing standards related to Homeless Management Information Systems (HMIS). These proposed standards would provide for: uniform technical requirements of HMIS, consistent collection of data and maintenance of the database, and confidentiality of the information in the database.[26]

Homeless Prevention and Rapid Re-housing Program

The American Recovery and Reinvestment act of 2009 was signed into law by President Obama, on February 17, 2009. It included $1.5 billion for a Homeless Prevention Fund called the Homeless Prevention and Rapid Re-housing Program (HPRP). Allocation of

[25] National Alliance to End Homelessness, www.endhomelessness.org
[26] https://www.onecpd.info/resource/1967/hearth-proposed-rule-for-hmis-requirements/

HPRP funds are based on the same formula used to allocate the Emergency Solutions Grants (ESG) program. HPRP was intended to provide financial assistance and services to either prevent individuals and families from becoming homeless or help those who are experiencing homelessness to be quickly re-housing and stabilized. The program ended on September 30, 2012. HPRP funds are no longer available.

Rapid Re-housing and Housing First

Rapid Re-housing is a model of addressing homelessness that is aimed at moving a family or individual experiencing homelessness into permanent housing as quickly as possible. Short to medium term rental assistance is offered to persons to combat short-term financial crises.[27] Funding for rapid re-housing is available through Emergency Solutions Grants (ESG) and Continuum of Care (CoC) Programs.

There has been a recent trend in homeless prevention toward Housing First. This approach to homelessness provides permanent housing options as quickly as possible, before providing supportive services to retain the housing. The theory behind Housing First is that housing provides the foundation necessary for individual recovery and stability. Housing is offered with minimum barriers, such as sobriety or income. This is a move away from the Transitional Housing approach that provides temporary housing accompanied with, and dependent upon consuming supportive services. Housing First utilizes a standard lease agreement without requiring participation in supportive services. This tactic may reduce costs by reducing the amount of assistance to individuals and families that require minimal support to regain self-sufficiency.[28] However, it has some complicating features that may make it difficult to house people or keep them housed. Capacity to meet need is severely limited, much the same with other approaches, leaving much of the need unattended. In addition, communication and coordination among different service agencies remains crucial to serving those most in need.

MISSISSIPPI CONTINUUM OF CARE

HUD refocused national homeless efforts through advocation of Continuum of Care programs for homeless needs. According to HUD, a Continuum of Care (CoC) exists to serve the needs of homeless persons on city or county levels. The main goals of CoCs are to offer housing assistance, support programs and shelter services to homeless persons and to ultimately break the cycle of homelessness. CoCs collaborate with different community organizations and local homeless advocate groups to identify homeless needs on a community level and in turn develop the best means of addressing these issues and optimize self-sufficiency.[29] For example, a CoC in one area may identify a high number of homeless persons with HIV/AIDS who have no access to support programs. The CoC could then tailor their efforts to offer programs that would benefit this group.

[27] http://www.endhomelessness.org/library/entry/rapid-re-housing-a-history-and-core-components
[28] http://www.endhomelessness.org/pages/housing_first
[29] https://www.onecpd.info/coc/

There are three Continuums of Care in the State of Mississippi. For the purpose of this Consolidated Plan, the data presented will relate to two, the Gulf Port/Gulf Coast Regional CoC and the Balance of State CoC. There is an additional CoC in Jackson.

POPULATION

Compiling accurate homeless counts is a complex challenge faced by communities across the nation. The most common method used to count homeless persons is a point-in-time count. The CoC relies on point-in-time surveys to count the number of homeless individuals and families in the state. Point-in-time counts involve counting all the people who are literally homeless on a given day or series of days and are designed to be statistically reliable and produce unduplicated numbers.

However, the National Coalition for the Homeless has pointed out that because point-in-time studies give just a "snapshot" picture of homelessness, they may miss people who are homeless at other times during the year. Other people may be missed because they are not in places researchers can easily find. These unsheltered or "hidden" homeless may be living in automobiles or campgrounds, for instance, or doubling up temporarily with relatives, friends, or others. Additionally, may counts rely on persons accessing services on the day of the count, which many homeless persons may not utilize on an on-going basis.

Despite the limitations, the point-in-time counts done by the Mississippi CoCs provides a helpful estimation of the homeless population in the state. It was estimated that 1,380 persons were homeless in the areas covered by the Gulf Port/Gulf Coast Regional CoC and Balance of State CoC in 2014, as shown in Table V.6. This is compared to the 1,643 persons estimated to be homeless in the state in 2013.

Table V.6
Homeless Point in Time Count
Gulf Port/Gulf Coast Regional CoC and Balance of State CoC
US Department of Housing and Urban Development

Status	2005	2007	2009	2011	2012	2013	2014
Emergency Shelter	629	171	389	349	401	365	500
Transitional Housing	179	240	406	317	261	398	394
Total in Shelter	808	411	795	666	662	763	894
Unsheltered	328	248	1080	814	714	880	486
Total Homeless	**1,136**	**659**	**1,875**	**1,480**	**1,376**	**1,643**	**1,380**

In 2014, some 64.8 percent of the counted homeless population was sheltered throughout the state. Some 46.4 percent of the homeless population was sheltered in 2013.

The point-in-time counts also gathered additional data household type, veteran status, and subpopulation information for each homeless person counted. As seen in Table V.7, there were 355 persons in households with at least one adult and one child in the State of Mississippi during the 2014 count. Of these households, 88.7 percent were sheltered. There were an additional 20 households with only children. Some 55.6 percent of households without children were sheltered during the count.

Table V.7
Homeless Count 2014
Gulf Port/Gulf Coast Regional CoC and Balance of State CoC
US Department of Housing and Urban Development

Household Type	Emergency Shelter	Transitional Housing	Unsheltered	Total
Households without Children	357	197	444	998
Persons in households without children	362	197	446	1005
Households with at least one adult and one child	43	69	14	126
Persons in households with at least one adult and one child	118	197	40	355
Households with only children	17	0	0	17
Persons in households with only children	20	0	0	20
Total Homeless	**500**	**394**	**486**	**1,380**

Information about the various homeless subpopulations was collected during the 2014 count. Data was collected regarding the following six subpopulations:

- Chronically homeless
- Severely Mentally Ill
- Chronic Substance Abuse
- Veterans
- Persons with HIV/AIDS
- Victims of Domestic Violence

Table V.8
Homeless Subpopulations 2014
Gulf Port/Gulf Coast Regional CoC and Balance of State CoC
U.S. Department of Housing and Urban Development

Homeless Attributes	Sheltered	Unsheltered	Total
Chronically Homeless Individuals	29	75	104
Chronically Homeless Persons in Families	0	2	2
Severely Mentally Ill	38	53	91
Chronic Substance Abuse	243	137	380
Veterans	98	37	135
HIV/AIDS	8	6	14
Victims of Domestic Violence	137	38	175
Persons not otherwise classified	341	138	479
Total Homeless Persons	**894**	**486**	**1,380**

Table V.8 shows the various subpopulations for the homeless within the state. The largest subpopulation group was those with chronic substance abuse, with 380 persons. The next largest subpopulation group was victims of domestic violence. There were 135 veterans counted in 2014, accounting for 9.8 percent of the total homeless population. Veterans were sheltered at a rate of 72.6 percent during the count. According to the Department of Housing and Urban Development's 2013 Annual Homeless Assessment Report, veterans account for just over 12 percent of all homeless adults in the United States, with an average of 60 percent being sheltered during 2013 counts across the nation.[30]

HOUSEHOLDS AT RISK OF HOMELESSNESS

According to the National Alliance to End Homelessness, there are various factors that contribute to an increased risk of homelessness. These housing characteristics include

[30] https://www.onecpd.info/resources/documents/ahar-2013-part1.pdf

households that are doubled up, or living with friends or family, persons recently released from prison, and young adults out of foster care. Economic factors include households with severe cost burden and households facing unemployment. There are a large number of households facing cost burdens and other housing problems that create instability and increase their risk of homelessness.

Households most likely to be at risk of becoming unsheltered are those that with extremely low incomes that are cost-burdened. There are 82,883 households at or below 30 percent MFI that have housing problems, as demonstrated by Table V.4 on page 73. Of these households, there are 7,386 large families and 32,070 small families. These households may be one financial crisis away from losing their housing.

SERVICES

There are currently a number of organizations in the State of Mississippi that offer a variety of services to both aid those who have become homeless and to prevent persons from becoming homeless. A partial list of the organizations providing services to the homeless population is provided in Table V.9. Services to aid the homeless include: health clinics, housing referrals, addiction aid, employment readiness skills training, domestic/sexual abuse support, and veteran support.

Table V.9
Homeless Service Organizations in Mississippi
State of Mississippi
U.S. Department of Housing and Urban Development[31]

Homeless Service Organization	City
Partners to End Homelessness	Jackson
Catholic Charities	Jackson
The Center for Violence Prevention	Pearl
Hinds County Human Resource Agency	Jackson
New Dimensions Development Foundation	Jackson
New Life for Women Inc.	Jackson
Stewpot Community Services	Jackson
Common Bond Association, Inc.	Jackson
Hinds Behavioral Health Services	Jackson
University of Southern MS- Inst for Disability	Jackson
Grace House	Jackson
Mountain of Faith Ministries	Vicksburg
The Salvation Army	Jackson
MS United to End Homelessness	Hattiesburg
AIDS Service Coalition	Hattiesburg
Multi-County Community Service Agency	Meridian
Bolivar County Community Action Agency	Cleveland
Recovery House	Columbus
Open Doors	Gulfport
Back Bay Mission	Biloxi
Mental Health Assoc of Mississippi	Gulfport
Gulf Coast Women's Center for Nonviolence	Biloxi
South Mississippi AIDS Task Force	Biloxi

[31] http://portal.hud.gov/hudportal/HUD?src=/states/mississippi/homeless/2006-12-27

Facilities

According to information from the Mississippi CoCs and the US Department of Housing and Urban Development, there are a number of facilities within the state that offer shelter and facilities to homeless persons in Mississippi. Organizations offering shelter facilities to homeless persons are listed in Table V.10, below.

Table V.10
MS-501 and MS-503 Continuum of Care (CoC) Shelters
2014 State of Mississippi
US Department of Housing and Urban Development

Agency	Description	City
MS-501 Mississippi Balance of State CoC[32]		
Catholic Charities Natchez	Emergency Shelter for Mixed Pop	Natchez
City of Tupelo	Emergency Shelter for Mixed Pop	Tupelo
Domestic Abuse Family Shelter	Emergency Shelter for Mixed Pop	Hattiesburg
House of Grace	Emergency Shelter for Mixed Pop	Vancleave
Meridian Domestic Violence	Emergency Shelter for Mixed Pop	Meridian
New Hope Village	Emergency Shelter for Mixed Pop	Holly Springs
Our House	Emergency Shelter for Mixed Pop	Greenville
Safe Haven, Inc.	Emergency Shelter for Mixed Pop	Columbus
Southwest Mississippi Christian Outreach	Emergency Shelter for Mixed Pop	Columbia
Coahoma Civic Center	Emergency Shelter for Adult Ind	Batesville
HOPE House	Emergency Shelter for Adult Ind	Hattiesburg
Life Church Meridian	Emergency Shelter for Adult Ind	Meridian
MCCSA	Emergency Shelter for Adult Ind	Meridian
Recovery House	Emergency Shelter for Adult Ind	Columbus
Safe Haven Outreach Ministries	Emergency Shelter for Adult Ind	Columbia
St. Andrews Mission	Emergency Shelter for Adult Ind	McComb
Team, Inc.	Emergency Shelter for Adult Ind	Hattiesburg
The Salvation Army-Hattiesburg	Emergency Shelter for Adult Ind	Hattiesburg
The Salvation Army-Laurel	Emergency Shelter for Adult Ind	Laurel
The Salvation Army-Meridian	Emergency Shelter for Adult Ind	Meridian
The Salvation Army-Tupelo	Emergency Shelter for Adult Ind	Tupelo
WWISCAA	Emergency Shelter for Adult Ind	Greenville
MS Children's Home Society, Inc.	Emergency Shelter for Youth	Hattiesburg
Sally Kate Winters	Emergency Shelter for Youth	West Point
Bolivar County CAA	Transitional Housing for Mixed Pop	Cleveland
Lighthouse Rescue Mission	Transitional Housing for Mixed Pop	Hattiesburg
Meridian Domestic Violence	Transitional Housing for Mixed Pop	Meridian
Recovery House	Transitional Housing for Mixed Pop	Columbus
AIDS Services Coalition	Transitional Housing for Adult Ind	Hattiesburg
Avante' House	Transitional Housing for Adult Ind	Columbus
Crosswind Ministries	Transitional Housing for Adult Ind	Corinth
Doors of Hope	Transitional Housing for Adult Ind	Oxford
Eve's House	Transitional Housing for Adult Ind	Hattiesburg
Gateway Rescue	Transitional Housing for Adult Ind	Magee
Grace Tabernacle	Transitional Housing for Adult Ind	Greenville
Hellfighters	Transitional Housing for Adult Ind	Laurel

[32] https://www.hudexchange.info/reports/CoC_HIC_CoC_MS-501-2014_MS_2014.pdf

Last House on the Block	Transitional Housing for Adult Ind	Columbus
MCCSA	Transitional Housing for Adult Ind	De Kalb
Region XII Commission on Mental Health	Transitional Housing for Adult Ind	Ellisville
Sally Kate Winters	Transitional Housing for Adult Ind	West Point
AIDS Services Coalition	Permanent Supportive Housing for Mixed Pop	Hattiesburg
Recovery House	Permanent Supportive Housing for Mixed Pop	Columbus
Mississippi Regional Housing Authority	Permanent Supportive Housing for Adult Ind	Columbus
Region XII Commission on Mental Health	Rapid Re-Housing for Adult Ind	Ellisville
MS-503 Gulf Port/Gulf Coast Regional CoC[33]		
Abundant Grace	Emergency Shelter for Mixed Pop	Hurley
The Salvation Army Gulfport	Emergency Shelter for Adult Ind	Gulfport
The Salvation Army Pascagoula	Emergency Shelter for Adult Ind	Pascagoula
Community Care Network	Transitional Housing for Mixed Pop	Ocean Springs
Gulf Coast Women's Center for Nonviole	Transitional Housing for Mixed Pop	Biloxi
South Mississippi AIDS Task Force	Transitional Housing for Adult Ind	Biloxi
Gulf Coast Women's Center for Nonviole	Permanent Supportive Housing for Mixed Pop	Biloxi
Back Bay Mission	Permanent Supportive Housing for Adult Ind	Biloxi
Mental Health Association of Mississippi	Permanent Supportive Housing for Adult Ind	Gulfport
South Mississippi AIDS Task Force	Permanent Supportive Housing for Adult Ind	Biloxi
Back Bay Mission	Rapid Re-Housing for Adult Ind	Biloxi
Hancock Resource Center	Rapid Re-Housing for Adult Ind	St. Louis

The Housing and Community Development Survey asked stakeholder respondents in Mississippi to identify the need for additional services and facilities for this population. Table V.11 shows that over half of respondents rated the need for services and facilities for homeless persons at a medium or high need.

Table V.11
Please rate the need for services and facilities for each of the following special needs groups.
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
Homeless persons	1	21	36	42	49	149

Additionally, the Housing and Community Development Survey asked how respondents would allocate emergency shelter funds among various activities for homeless households. As seen in Table V.12, on the following page, respondents indicated the highest need amount of funds should go to rapid re-housing, followed by operation and maintenance.

[33] https://www.hudexchange.info/reports/CoC_HIC_CoC_MS-503-2014_MS_2014.pdf

Table V.12
How would allocate emergency shelter funds among these areas?
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Area	Percentage Allocated
Rapid Re-Housing	32.28%
Operation and Maintenance	27.50%
Homeless prevention	24.83%
Street outreach	15.39%
Total	**100.0%**

G. Non-Homeless Special Needs Assessment

According to HUD, special needs populations are "not homeless but require supportive housing, including the elderly, frail elderly, persons with disabilities (mental, physical, developmental), persons with alcohol or other drug addiction, persons with HIV/AIDS and their families, public housing residents and any other categories the jurisdiction may specify."[34] Because individuals in these groups face unique housing challenges and are vulnerable to becoming homeless, a variety of support services are needed in order for them to achieve and maintain a suitable and stable living environment. Each of these special needs populations will be discussed in terms of their size and characteristics, services and housing currently provided, and services and housing still needed.

A portion of the 2015 Housing and Community Development Survey asked respondents to rank the need for services and facilities for non-homeless special needs groups in Mississippi. The responses to this question are tabulated in Table V.13. While most special needs groups were perceived to have a high level of need, the frail elderly, veterans and the elderly were seen to have the highest level of need.

Table V.13
Please rate the need for services and facilities for each of the following special needs groups.
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
The frail elderly (age 85+)	1	6	32	62	48	149
Veterans		11	32	58	48	149
The elderly (age 65+)		9	36	56	48	149
Persons with severe mental illness	1	9	38	54	47	149
Persons with physical disabilities		7	46	49	47	149
Persons with developmental disabilities	1	8	45	49	46	149
Persons with substance abuse addictions	1	14	40	47	47	149
Victims of domestic violence		13	46	42	48	149
Homeless persons	1	21	36	42	49	149
Persons recently released from prison	1	31	30	40	47	149
Persons with HIV/AIDS	3	29	40	28	49	149
Other groups	2		1	8	138	149

[34] *Consolidated Plan Final Rule 24 CFR Part 91.* United States Department of Housing and Urban Development. Community Planning and Development. 1995. 14.

ELDERLY AND FRAIL ELDERLY PERSONS

HUD provides a definition of "elderly" as persons age 62 or older. The U.S. National Center for Health Statistics (NCHS) notes that a number of older citizens have limitations caused by chronic conditions that constrain activities of daily living (ADLs). ADLs are divided into three levels, from basic to advanced. Basic ADLs involve personal care and include tasks such as eating, bathing, dressing, using the toilet, and getting in or out of bed or a chair. Intermediate, or instrumental, Activities of Daily Living (IADLs) are tasks necessary for independent functioning in the community. These include cooking, cleaning, laundry, shopping, using the telephone, using or accessing transportation, taking medicines, and managing money. Social, recreational and occupational activities that greatly affect the individual's quality of life are Advanced Activities of Daily Living (AADL). Playing bridge, bowling, doing crafts, or volunteering for one's church are examples of advanced ADLs. "Frail elderly" is defined as persons who are unable to perform three or more activities of daily living.[35]

Size and Characteristics

According to 2010 Census Bureau data, 340,063 residents in non-entitlement areas of Mississippi were age 65 or older. Table V.14 presents a breakdown of the elderly population by age at the time of the 2010 census. While elderly is defined as persons over 62, "extra elderly" persons are those over the age of 75. Within the elderly population in non-entitlement areas of Mississippi, an estimated 11.5 percent were extra elderly. The elderly population in non-entitlement areas of Mississippi grew 13.8 percent between 2000 and 2010. The two age groups with the greatest growth over this decade were those aged 65 to 66 and those aged 67 to 69, with an increase of 30.5 percent and 22.7 percent, respectively.

Table V.14
Elderly Population by Age
Non-Entitlement Area of Mississippi
2000 & 2010 Census SF1 Data

Age	2000 Census		2010 Census		% Change 00–10
	Population	% of Total	Population	% of Total	
65 to 66	35,336	11.8%	46,128	13.6%	30.5%
67 to 69	50,769	17.0%	62,270	18.3%	22.7%
70 to 74	76,233	25.5%	84,384	24.8%	10.7%
75 to 79	58,983	19.7%	62,416	18.4%	5.8%
80 to 84	40,282	13.5%	45,892	13.5%	13.9%
85 or Older	37,283	12.5%	38,973	11.5%	4.5%
Total	**298,886**	**100.0%**	**340,063**	**100.0%**	**13.8%**

Services and Housing Currently Provided

The Older Americans Act of 1965 has been the main instrument for delivering social services to senior citizens in the U.S. This Act established the federal Administration on

[35] http://law.justia.com/us/cfr/title24/24-4.0.2.1.12.2.3.2.html

Aging (AoA) and related state agencies to specifically address the many needs of the elderly U.S. population. Despite limited resources and funding, the mission of the Older Americans Act is broad: "to help older people maintain maximum independence in their homes and communities and to promote a continuum of care for the vulnerable elderly. "[36] The AoA encompasses a variety of services aimed at the elderly population, such as supportive services, nutrition services, family caregiver support, and disease prevention and health promotion.

In Mississippi, support for the elderly population is provided by the State's Aging and Adult Services Division, within the Department of Human Services. The mission of the Division of Aging and Adult Services is to protect the rights of older citizens while expanding their opportunities and access to quality services. Their vision is for older citizens to live the best life possible.[37] Services available for the elderly and frail elderly include nutrition, transportation, information outreach, legal assistance, employment programs, case management, in-home services and adult day care.

Services and Housing Needed

According to the Center for Housing Policy, housing will be a priority need for the elderly population. A growing number of older households will face severe housing costs burdens, and many will require assisted or long-term care housing and services.[38] In addition, as the Baby Boomer generation continues to grow, many will prefer to remain independent, requiring in-home services and adaptions to existing homes. Thus, there is a greater focus on in-home care and expanded home health services to meet the needs of a more independent elderly population. Because most elderly persons are on a fixed income, these increasing costs may fall on publically funded programs in the state.

PEOPLE WITH DISABILITIES (MENTAL, PHYSICAL, DEVELOPMENTAL)

HUD defines a person with a disability as any person who has a physical or mental impairment that substantially limits one or more major life activities. Physical or mental disabilities include hearing, mobility and visual impairments, chronic alcoholism, chronic mental illness, AIDS, AIDS related complex, and mental retardation that substantially limits one or more major life activities. Major life activities include walking, talking, hearing, seeing, breathing, learning, performing manual tasks and caring for oneself.[39] HUD defers to Section 102 of the Developmental Disabilities Assistance and Bill of Rights Act of 2000 for the definition of developmental disability: a severe, chronic disability of an individual that is attributable to a mental or physical impairment or combination of mental and physical impairments.

[36] http://www.nhpf.org/library/the-basics/Basics_OlderAmericansAct_02-23-12.pdf
[37] http://www.mdhs.state.ms.us/aging-adult-services/
[38] Lipman, Barbara., Jeffery Lubell, Emily Salmon. "Housing an Aging Population: Are We Prepared?" *Center for Housing Policy* (2012). 21 May 2014 <http://www.nhc.org/media/files/AgingReport2012.pdf>.
[39] http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/disabilities/inhousing

Many persons with disabilities require support services in order to maintain healthy lifestyles. The services that are required often depend on the individual and the type of disability. For example, a person with a mental disability may require medication assistance, weekly counseling sessions or job placement assistance. Specialized transport services and physical therapy sessions are services that might be required for a person with a physical disability.

Many people with disabilities live on fixed incomes and thus face financial and housing challenges similar to those of the elderly. Without a stable, affordable housing situation, persons with disabilities can find daily life challenging. In addition, patients from psychiatric hospitals and structured residential programs have a hard time transitioning back in to mainstream society without a reasonably priced and supportive living situation. The U.S. Conference of Mayors 2013 Hunger and Homeless Survey found that mental illness was cited 44 percent of the time as a cause of homelessness among unaccompanied individuals. Likewise, they reported that 30 percent of homeless adults in their cities had severe mental illness.[40]

Size and Characteristics

Data from the 2013 Five-Year American Community Survey for Mississippi showed a total population of persons with disabilities of 419,994 in non-entitlement areas, with an overall disability rate of 16.5 percent. Table V.15 presents a tally of disabilities by age and gender. The age group with the highest disability rate is persons aged 75 and older. Males had a slightly lower disability rate at 16.4 percent, than females, at 16.5 percent. Children under 5 had the lowest disability rate, at 0.6 percent.

Table V.15
Disability by Age
Non-Entitlement Area of Mississippi
2013 Five-Year ACS Data

Age	Male		Female		Total	
	Disabled Population	Disability Rate	Disabled Population	Disability Rate	Disabled Population	Disability Rate
Under 5	694	.8%	457	.5%	1,151	0.6%
5 to 17	19,118	7.9%	10,816	4.6%	29,934	6.3%
18 to 34	23,239	8.4%	19,520	6.7%	42,759	7.5%
35 to 64	93,335	19.9%	98,778	19.1%	192,113	19.5%
65 to 74	33,743	36.8%	37,605	35.2%	71,348	35.9%
75 or Older	30,491	56.9%	52,198	60.4%	82,689	59.0%
Total	**200,620**	**16.4%**	**219,374**	**16.5%**	**419,994**	**16.5%**

Table V.16 breaks down disabilities by disability type for persons aged 5 and older, from the 2000 census data. The most common disability is a physical disability, followed by an employment disability. The third most common disability type is a go-outside-home disability.

[40] http://www.usmayors.org/pressreleases/uploads/2013/1210-report-HH.pdf

Table V.16
Total Disabilities Tallied: Aged 5 and Older
Non-Entitlement Area of Mississippi
2000 Census SF3 Data

Disability Type	Population
Sensory disability	108,628
Physical disability	253,454
Mental disability	145,050
Self-care disability	87,055
Employment disability	219,156
Go-outside-home disability	200,838
Total	**1,014,181**

Services and Housing Currently Provided

The Mississippi Developmental of Rehabilitation Services provides resources for disabled Mississippians. The state agency provides resources to help Mississippians with disabilities find new careers, live more independently, overcome obstacles, and face new challenges.[41] The following are offices within the agency:

- Office of Vocational Rehabilitation provides economic opportunities for persons with disabilities.
- Office of Vocational Rehabilitation for the Blind specializes in working with individuals with blindness and low vision.
- Office of Special Disability Programs provides services to individuals with the most severe disabilities who do not necessarily demonstrate immediate potential for competitive employment.
- Office of Disability Determination Services establishes eligibility for Mississippians with severe disabilities who apply for Social Security Disability Insurance and/or Supplemental Security Income.

Services and Facilities Needed

The Housing and Community Development Survey also asked participants to rank the need for services and facilities for persons with disabilities. The results, shown in Table V.17, indicate a strong need for housing for both persons with physical disabilities and developmental disabilities, with over 65 percent of respondents indicating a medium to high level of need for services and facilities for both groups.

Table V.17
Please rate the need for services and facilities for each of the following special needs groups.
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
Persons with physical disabilities		7	46	49	47	149
Persons with developmental disabilities	1	8	45	49	46	149

[41] http://www.mdrs.ms.gov/About/Pages/default.aspx

PEOPLE WITH ALCOHOL OR OTHER DRUG ADDICTIONS

According to the National Coalition for the Homeless, for persons "just one step away from homelessness, the onset or exacerbation of an addictive disorder may provide just the catalyst to plunge them into residential instability."[42] For persons suffering from addictions to drugs and alcohol, housing is complicated. Persons who have stable housing are much better able to treat their addictions. However, obtaining stable housing while suffering from addiction can be quite difficult, and the frustrations caused by a lack of housing options may only exacerbate addictions. According to the 2013 U.S. Conference of Mayors Hunger & Homelessness Report, substance abuse is one of the most cited causes of homelessness.[43]

Size and Characteristics

In their 2014 Annual Report, the Mississippi Department of Health reported to serve over 17,000 persons with their drug and alcohol services.[44] In addition, the Trust for America's Health found that Mississippi had the 30th highest rate of drug overdose mortality rate in the United States in 2013, with 11.4 per 100,000 people suffering drug overdose fatalities.[45]

Services and Housing Currently Provided

The Mississippi Department of Mental Health offers a variety of drug and alcohol services. These services are offered through a statewide network which includes state-operated facilities, regional community health centers, and other nonprofit community based programs.[46] A variety of outpatient and community-based residential alcohol and drug abuse prevention and treatment services are provided by Community Mental Health Centers. Substance abuse services provided include prevention services, employee assistance programs, counseling, outreach/aftercare services, primary residential services, transitional residential services, vocational counseling and emergency services.

Services and Housing Needed

According to the Healthy People 2020 national objectives, there were 22 million Americans struggling with a drug or alcohol problem in 2005. Of those with substance abuse problems, 95 percent are unaware of their problem.[47] Obtaining treatment is a primary concern for many, which often includes high costs and other impacts on the person's ability to obtain or retain an income and housing.

The National Coalition for the Homeless notes that other needs for persons living with addictions to drugs or alcohol include transportation and support services, including work

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42 http://www.nationalhomeless.org/publications/facts/addiction.pdf
43 http://www.usmayors.org/pressreleases/uploads/2013/1210-report-HH.pdf
44 http://www.dmh.ms.gov/wp-content/uploads/2012/07/DMH-FY14-Annual-Report1.pdf
45 http://healthyamericans.org/reports/drugabuse2013/release.php?stateid=MS
46 http://www.dmh.ms.gov/alcohol-and-drug-services/
47 http://www.healthypeople.gov/2020/TopicsObjectives2020/overview.aspx?topicId=40#star

programs and therapy access. Barriers also include programs that follow abstinence-only policies. These programs are often unrealistic for persons suffering from addictions because they fail to address the reality of relapses. A person living in supportive housing with an addiction problem who experiences a relapse may suddenly become a homeless person.[48]

Results from the 2014 Housing and Community Development Survey, presented in Table V.18, show that respondent indicated a medium to high need level for additional services and facilities for this special needs group.

Table V.18
Please rate the need for services and facilities for each of the following special needs groups.
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
Persons with substance abuse addictions	1	14	40	47	47	149

Victims of Domestic Violence

Domestic violence describes behaviors that are used by one person in a relationship to control the other. This aggressive conduct is often criminal, including physical assault, sexual abuse and stalking. The U.S. Department of Justice defines domestic violence as a pattern of abusive behavior in any relationship that is used by one partner to gain or maintain power and control over another intimate partner.[49] Victims can be of all races, ages, genders, religions, cultures, education levels and marital statuses. Victims of domestic violence are at risk of becoming homeless due to an unstable living environment. If domestic violence victims flee the home, they are often faced with finding emergency shelter and services for themselves and their children. Victims of domestic violence are predominantly women. However, children can also be affected as either victims of abuse or as witnesses to abuse. The U.S. Department of Justice found that throughout their lifetime, over 25 million women and 7 million men were victimized by an intimate partner.[50]

Size and Characteristics

Pinpointing a specific number of victims of domestic violence can be difficult because many cases go unreported. However, there are other means of gathering statistics, including tracking the numbers of cases that are reported to law enforcement. According to the statewide sexual and domestic violence coalition, the Mississippi Coalition against Domestic Violence (MCADV), one in four women have been a victim of severe physical violence by an intimate partner.[51] The 2014 Point-in-Time homeless count indicated 175

[48] http://www.nationalhomeless.org/publications/facts/addiction.pdf
[49] http://www.ovw.usdoj.gov/domviolence.htm
[50] https://www.ncjrs.gov/pdffiles1/nij/183781.pdf
[51] http://mcadv.org/2014/02/13/domestic-violence-statistics/

homeless victims of domestic violence, accounting for 12.7 percent of the homeless population counted.

Services and Housing Currently Provided

MCADV is a statewide domestic violence coalition. The mission of Mississippi Coalition against Domestic Violence is to bring about social change through advocacy, technical assistance and public awareness.[52]

Services for victims of domestic abuse are provided by a variety of non-profit and faith-based organizations across the state. Many of the shelters have 24-hour crisis lines and offer temporary housing, advocacy, referral programs, counseling, and transportation, as well as many other services. A partial list of domestic violence service providers is shown in Table V.19.

Table V.19
Domestic Violence Service Providers
State of Mississippi
MCADV

Homeless Service Organization	Location
Angel Wings Outreach Center	Mendenhall
Care Lodge	Meridian
Catholic Charities	Jackson
The Center for Violence Prevention	Pearl
Domestic Abuse Family Shelter	Laurel
Guardian Shelter	Natchez
Gulf Coast Women's Center for Nonviolence	Biloxi
Haven House	Vicksburg
House of Grace	Southaven
New Beginning Shelter	Greenville
S.A.F.E., Inc.	Tupelo
Safe Haven	Columbus
W.I.N.G.S. Domestic Violence Shelter	McComb

Services and Housing Needed

Results from the 2014 Housing and Community Development Survey indicated a medium to high need level for additional domestic violence facilities and services in Mississippi. These data are shown in Table V.20, below.

Table V.20
Please rate the need for services and facilities for each of the following special needs groups.
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
Victims of domestic violence		13	46	42	48	149

PEOPLE WITH HIV/AIDS AND THEIR FAMILIES

National research has demonstrated that housing is the greatest unmet service need among people living with HIV/AIDS. Part of this can be attributed to several personal and structural factors unique to this population: loss of income due to progressive inability to maintain employment, disease progression requiring accessible facilities, and policy requirements that limit residence in temporary or transitional programs. It is estimated that as many as half of all people living with HIV/AIDS will need housing assistance at some point in their illness.[53]

[52] http://mcadv.org/about/
[53] http://nationalaidshousing.org/legisadvocacy/hopwa/

In addition, homelessness is a barrier to outpatient care and HIV/AIDS specific therapies. The National Coalition for the Homeless reports that between one-third and one-half of all persons with HIV/AIDS are either homeless or at risk for becoming homeless.[54] Research shows that among people with HIV/AIDS, there is a strong correlation between housing and improved access to, ongoing engagement in, and treatment success with health care. When people are housed they can access and adhere to drug treatments and therapies, which may require fewer hospitalizations and emergency care.[55] This is partially due to the fact that complex medication regimens require that medicines be refrigerated and administered according to a strict schedule. Furthermore, homeless HIV positive individuals have a death rate that is five times greater than that of housed HIV positive people, 5.3 to 8 deaths per 100 people compared to 1 to 2 per 100 people.[56]

Size and Characteristics

According to the Mississippi State Department of Health, the HIV disease rates have declined from around 25.2 per 100,000 population in 2000 to 18.6 in 2010.[57] The State also reported that HIV infection rates were 7 times higher in African Americans than Whites, with African American accounting for 76 percent of newly reported HIV infections in 2013.[58] The counties with the highest number of HIV infections in 2013 included Hinds, Forrest, Harrison, Rankin and Coahoma. The Counties with the highest rate per 100,000 in 2013 were Coahoma, Leflore, Hinds, Forrest and Quitman. According to HIV Surveillance data, there are 8,997 persons in Mississippi living with HIV. The State has had 5,125 cumulative cased of AIDS reported.

Services and Housing Currently Provided

A combination of private non-profit providers and the Mississippi State Department of Health provide HIV/AIDS services in Mississippi. The Departments STD/HIV Program links people to services for disease prevention and control, including healthcare services for HIV.[59]

HIV testing and services are provided by numerous public health clinics throughout the state, including free HIV testing at all county clinics. In addition a variety of Service providers offer HIV testing along with a bevy of other services, such as case management, transitional housing, housing referrals, food pantries, direct financial assistance, support groups and mental health counseling. A partial list of HIV service providers in Mississippi is provided in Table V.21, on the following page.

[54] http://www.nationalhomeless.org/publications/facts/HIV.pdf
[55] http://nationalaidshousing.org/legisadvocacy/hopwa/
[56]http://www.nationalaidshousing.org/PDF/Housing%20&%20HIV-AIDS%20Policy%20Paper%2005.pdf
[57] http://msdh.ms.gov/msdhsite/_static/14,0,150,134.html
[58] http://msdh.ms.gov/msdhsite/_static/resources/6008.pdf
[59] http://msdh.ms.gov/msdhsite/index.cfm/14,0,150,html

Services and Housing Needed

Persons living with HIV/AIDS have multiple needs in terms of services. In addition to receiving regular medical attention, case management, and income support, many persons need access to permanent housing solutions. According to the Department of Housing and Urban Development, 9 out of 10 persons utilizing HOPWA benefits are extremely low to low income.[60] Increased funding for housing for persons living with HIV/AIDS is one of the greatest needs of the HIV/AIDS support programs. For example, there is generally a high need for increased scattered site housing availability, because traditional assisted housing options that involve grouping funding recipients in one site or complex are ineffective in that they can endanger the confidentiality of residents. Additionally, program recipients have a need for longer-term housing options. As the treatment of AIDS has advanced, people are living longer with the disease. Thus longer-term housing options are needed. However, the funding of these long-term housing options can be expensive.

Table V.21
HIV Service Providers
State of Mississippi
MSDH

Service Organization	Location
GA Carmichael Family Health Center	Belzoni
GA Carmichael Family Health Center	Yazoo
Mississippi State Dept of Health Crossroads Clinic	Greenville
Coastal Family Health Center, Inc.	Biloxi
Mississippi State Dept of Health Medical Arts Building	McComb
South MS AIDS Task Force	Biloxi
Southeast MS Rural Health Initiative	Hattiesburg
AIDS Service Coalition	Hattiesburg
Building Bridges, Inc.	Belzoni
Mississippi State Dept of Health	Jackson
My Brother's Keeper Wellness Center	Jackson
Jackson-Hinds Comprehensive Health Center	Jackson
Ethel James Ivory Homeless Clinic	Jackson

The Mississippi State Department of Health released a Statewide Comprehensive HIV Plan and Statewide Coordinated Statement of Need in 2012. The report issued statewide need that includes improving access to medical care, case management, and legal services.[61]

As seen on Table V.22, over 45 percent of respondents indicated a medium to high need level for services and facilities for persons with HIV/AIDS.

Table V.22
Please rate the need for services and facilities for each of the following special needs groups.
State of Mississippi
2014 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
Persons with HIV/AIDS	3	29	40	28	49	149

[60] https://www.onecpd.info/resources/documents/HOPWA-Fact-Sheet.pdf
[61] http://msdh.ms.gov/msdhsite/_static/resources/5714.pdf

H. Summary

There were 223,992 households below 80 percent MFI with housing need in 2011 throughout non-entitlement areas of Mississippi. In addition, large families and several racial/ethnic groups face disproportionate shares of housing problems.

Results from the 2015 Housing and Community Development Needs Survey showed that first time home-buyer assistance, homeowner housing rehabilitation and energy efficient retrofits were considered to have a high need for funding, along with rental housing for very low-income households.

Homeless needs in the non-entitlement area of the state are handled by three Continuum of Care organizations. The compilation from two CoCs, the Gulfport/Gulf Coast Regional CoC and the Balance of State CoC were used to assess the homeless needs for this Plan. A count of the homeless population showed that more than 1,380 persons were homeless in 2014, including 355 persons in homeless families with children and 106 chronically homeless persons.

Non-homeless special needs populations in the state include the elderly and frail elderly, persons living with disabilities, persons with alcohol or other drug addiction, victims of domestic violence, and persons living with HIV and their families. These populations are not homeless, but are at the risk of becoming homeless and therefore often require housing and service programs. The needs of the special needs groups are relative to the programs currently provided. The Housing and Community Development Needs Survey indicated the highest need for the frail elderly, veterans, the elderly, persons with severe mental illness and the disabled.

VI. Community Development Needs Assessment

A. Introduction

The community development needs for the state of Mississippi were determined based on research gathered from the 2015 Housing and Community Development Needs survey.

B. Community Development Needs Assessment

2014 Housing and Community Development Survey

As part of the process of evaluating community development needs in Mississippi, the 2015 Housing and Community Development Needs survey was distributed to stakeholders throughout the state. A total of 132 survey responses were received in non-entitlement areas of the state.

Survey participants were asked to identify which funding areas they would allocate their resources to. These results are presented in Table VI.1, below, and show that most respondents would prioritize resources to human services. This was followed by housing, water systems, economic development, infrastructure, public facilities, and all other.

Table VI.1
How would allocate your resources among these areas?
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Area	Percentage Allocated
Human Services	23.47%
Housing	20.72%
Water Systems	14.74%
Economic Development	14.22%
Infrastructure	13.33%
Public Facilities	12.60%
All Other	.91%
Total	**100.0%**

In terms of Business and Economic Development activities, the highest need was placed on the attraction of new businesses and the expansion of existing businesses, followed by provision of job training. These breakdowns are shown in Table VI.2, on the following page. The next top priorities were retention of existing businesses and enhancement of business infrastructure.

Table VI.2
Please rate the need for the following Business and Economic Development activities.
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
Attraction of new businesses		1	16	101	31	149
Expansion of existing businesses		1	20	95	33	149
Provision of job training	1	1	21	93	33	149
Retention of existing businesses		1	22	91	35	149
Enhancement of businesses infrastructure		7	32	78	32	149
Provision of job re-training, such as after plant or other closures	3	8	28	76	34	149
Foster businesses with higher paying jobs		6	29	74	40	149
Provision of technical assistance for businesses		8	46	64	31	149
Provision of venture capital	2	19	40	56	32	149
Investment as equity partners	2	17	46	50	34	149
Development of business parks	4	19	42	50	34	149
Other business activities	5	2	1	21	120	149

Additional question were asked about the need for infrastructure, public facilities, and public services. The following tables will illustrate the respondents ranking of various priorities.

Looking back at Table VI.1, respondents indicated that infrastructure should account for over 13 percent of resources and water systems themselves should account for almost 15 percent of resources. Table VI.3 demonstrates the highest ranking for street and road improvements. This was followed by sewer system improvements and water capacity improvements.

Table VI.3
Please rate the need for the following Infrastructure activities.
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
Street and road improvements		1	23	89	36	149
Sewer system improvements	2	11	35	66	35	149
Water system capacity improvements	2	13	33	64	37	149
Sidewalk improvements		12	35	63	39	149
Flood drainage improvements	1	18	39	56	35	149
Storm sewer system improvements	3	10	44	53	39	149
Bridge improvements	4	17	40	52	36	149
Bicycle and walking paths	3	24	33	52	37	149
Water quality improvements	3	19	44	46	37	149
Solid waste facility improvements	3	19	49	40	38	149
Other infrastructure activities	4	4	1	13	127	149

Community and Public facilities were also prioritized by respondents in the survey. According to allocation responses, public facilities should account for over 12 percent of resources. As seen in Table VI.4, on the following page, respondents indicated the highest level of need for youth centers, followed healthcare facilities and parks and recreation centers.

Table VI.4
Please rate the need for the following community and public facilities.
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
Youth centers	1	11	39	63	35	149
Healthcare facilities	2	9	44	59	35	149
Parks and recreational centers		12	46	58	33	149
Community centers	1	19	39	52	38	149
Senior centers	1	15	47	49	37	149
Residential treatment centers	1	20	47	48	33	149
Public buildings with improved accessibility		20	42	46	41	149
Childcare facilities	1	18	52	43	35	149
Other infrastructure activities	4	4	1	13	127	149

Table VI.5, below, shows the need for human and public services. The highest needs indicated were for healthcare services, employment services, and senior services. This was followed by youth centers, mental health/chemical dependency services, and transportation services.

Table VI.5
Please rate the need for the following human and public services
Non-Entitlement Areas of Mississippi
2015 Housing and Community Development Survey

Question	No Need	Low Need	Medium Need	High Need	Missing	Total
Healthcare services		11	27	76	35	149
Employment services		11	31	71	36	149
Senior services		8	40	64	37	149
Youth centers	1	11	39	63	35	149
Mental health/chemical dependency services		14	39	60	36	149
Transportation services	1	11	39	59	39	149
Homebuyer education	2	9	46	55	37	149
Childcare services	1	14	43	53	38	149
Crime awareness education	1	19	40	52	52	149
Fair housing activities	4	14	47	45	39	149
Fair housing education	4	17	45	45	38	149
Tenant/Landlord counseling	3	22	44	43	37	149
Mitigation of asbestos hazards	4	38	42	26	39	149
Mitigation of lead-based paint hazards	7	46	35	22	39	149
Mitigation of radon hazards	8	46	36	21	38	149
Other public services	3	3	2	5	136	149

C. Priority Community Development Needs Rankings

Assignment of the ranking of the public facility needs, infrastructure, public service needs, special needs groups, and economic development are all presented in the Priority Needs Table 2B, below.

HUD Table 2B

Community Development Needs in Mississippi

PRIORITY COMMUNITY DEVELOPMENT NEEDS	Priority Need Level (High, Medium, Low, No Such Need)
Economic Development Activities	
Attract new businesses	H
Retain existing businesses	H
Expand existing businesses	H
Provide job training	H
Provide job re-training	M
Enhance business infrastructure	M
Provide working capital for businesses	M
Provide businesses with technical assistance	M
Invest as equity partners	M
Provide venture capital	M
Develop business incubators	M
Develop business parks	M
Human and Public Services	
Transportation services	M
Healthcare services	H
Youth centers	H
Senior services	H
Mental health/chemical dependency services	H
Childcare services	M
Employment services	H
Fair housing education	M
Fair housing activities	M
Homebuyer education	M
Tenant/Landlord counseling	M
Crime awareness education	M
Mitigation of radon hazards	M
Mitigation of asbestos hazards	M
Mitigation of lead-based paint hazards	M
Infrastructure	
Street and road improvements	H
Bicycle and walking paths	M
Sidewalk improvements	H
Water system capacity improvements	H
Flood drainage improvements	M
Sewer system improvements	H
Water quality improvements	M
Storm sewer system improvements	M
Solid waste facility improvements	M
Bridge improvements	M
Public Facilities	
Youth centers	H
Healthcare facilities	H
Childcare facilities	M
Community centers	H
Residential treatment centers	M
Public buildings with improved accessibility	M
Senior centers	M
Parks and recreational centers	H

D. Summary

The 2014 Housing and Community Development Survey also provided data on perceived community development needs. Respondents indicated that funding should be primarily devoted to human service, followed by housing, water systems, economic development, infrastructure, and public facilities. Attraction of new businesses, expansion of existing businesses and provision of job training were all top priorities in terms of economic development. Street and road improvements, sewer system improvements and water system capacity improvements were high priorities for infrastructure development. Respondents noted a high need for youth centers, healthcare facilities and park and recreation centers. In addition, there is a high need for healthcare, employment and senior services.

VII. STRATEGIC PLAN

A. OVERVIEW OF CONSOLIDATED PLAN NATIONAL GOALS

The goals of the Mississippi Consolidated Plan are to provide decent housing, provide a suitable living environment and expand economic opportunities for its low- and moderate-income residents. The MDA strives to accomplish these goals by affectively maximizing and utilizing all available funding resources to conduct housing and community development activities that will serve the economically disadvantaged residents of the non-entitlement areas of the state. By addressing need and creating opportunity at the individual and neighborhood levels, the MDA and participating communities hope to improve the quality of life for residents. These goals are further explained as follows:

- *Provide decent housing* by helping homeless persons obtain appropriate housing and assisting those at risk of homelessness; preserving the affordable housing stock; increasing availability of permanent housing that is affordable to low- and moderate-income persons without discrimination; and increasing the supply of supportive housing.

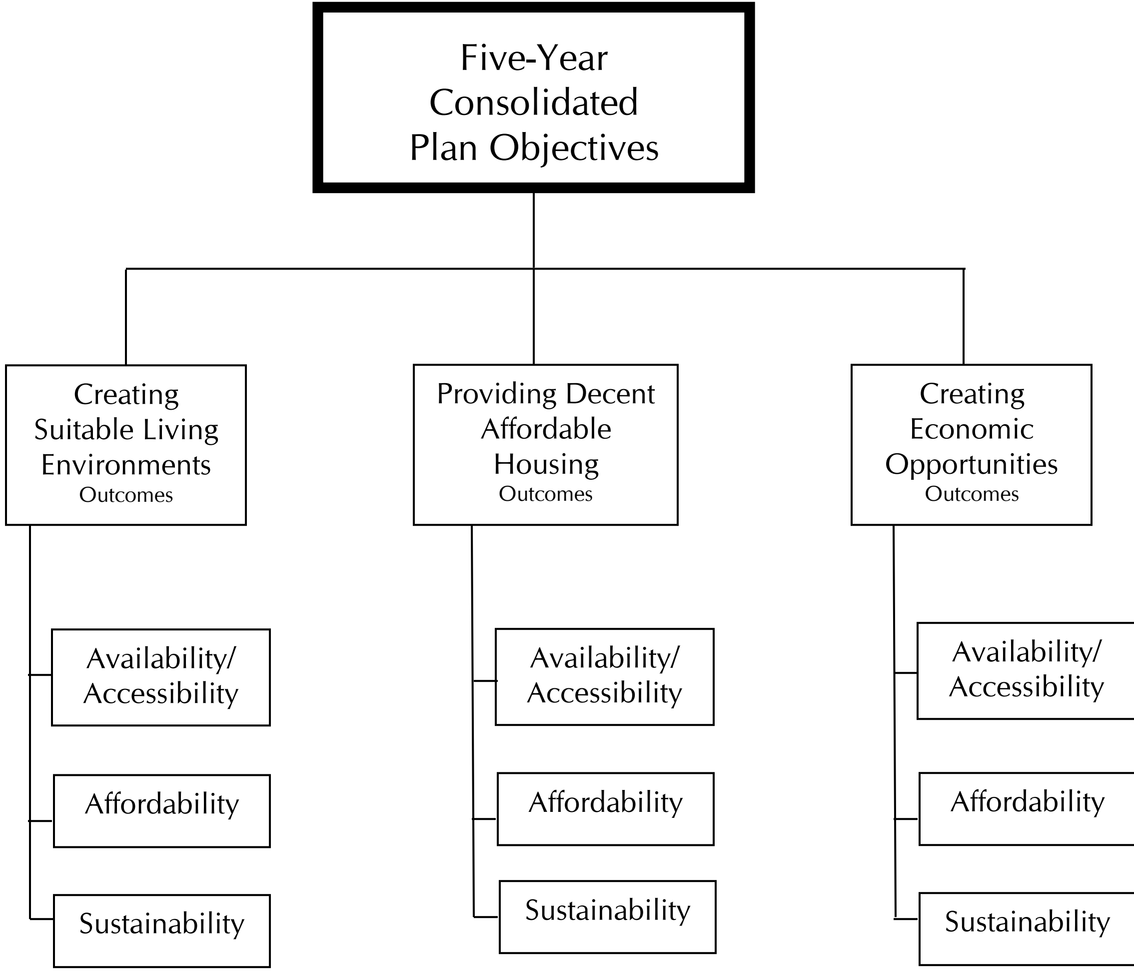
- *Provide a suitable living environment* by improving the safety and livability of neighborhoods; increasing access to quality facilities and services and infrastructure; and reducing the isolation of income groups within an area through de-concentration of low-income housing opportunities.

- *Expand economic opportunities* by creating jobs accessible to low- and moderate-income persons; making mortgage financing available for low- and moderate-income persons at reasonable rates; providing access to credit for development activities that promote long-term economic and social viability of the community; and empowering low-income persons to achieve self-sufficiency to reduce generational poverty in federally assisted and public housing.

B. Context in Which Activities will be Conducted

Performance Measurement Criteria

The results of the state's resource expenditures will be in terms that are quantifiable; in terms that are measurable; and that were originally cited as a goal. These objectives, and their outcomes, are best illustrated in the following diagram:



C. Geographic Priorities

The State of Mississippi does not allocate resources geographically. Funds are available statewide to eligible non-entitlement entities.

D. Priority Needs

The Strategic Plan must identify Mississippi's general priorities for activities and HUD-supported investments to address affordable housing needs; homelessness; the needs of non-homeless persons who require supportive housing and services; and non-housing community and economic development needs. These general and relative priorities will help guide HUD-supported housing and community development initiatives in Mississippi for 2015 through 2019.

Priorities were established using a variety of tools including the 2015 Housing and Community Development survey, public input meetings and consultation with state and outside agencies. The priority needs shown below are a reflection of Tables 2A and 2B on pages 76 and 99 in this Plan.

MDA has identified 7 priority development areas to meet the greatest needs of residents in the participating cities and non-entitlement areas of Mississippi. It will invest its CDBG, HOME, ESG, HOPWA and other resources to address needs in the following priority areas:

- Low-income Renter households
- Low-income Owner households
- Persons with Disabilities
- Special Needs Populations, including persons with HIV/AIDS
- Homelessness
- Public Facilities
- Retaining and Expanding Existing Businesses, and Attracting New Businesses

MDA plans to utilize available resources, including HOME, CDBG, HOPWA and ESG funds to address the priority needs established in this Plan. The priorities identified in this Strategic Plan focus on meeting housing and community development needs, primarily those of low-income households and neighborhoods.

E. Influence of Market Conditions

MDA acknowledges that market conditions influence the way funds will be delivered and will influence the use of funds available. Below is a narrative of market characteristics that will the influence the use of funds available for housing types.

Tenant-Based Rental Assistance

As shown by the pervious sections, the demand for rental has increased and is expected to continue to increase throughout the course of this Plan. This state expects to see the need for TBRA to continue as the number of cost-burdened families continues to grow.

TBRA for Non-Homeless Special Needs

The Non-Homeless Special Needs populations within the state have a variety of housing needs throughout the state. The increase in demand for rentals and the increase in the

price of rentals will place a high need for special need populations within the state. These increases make rentals unaffordable to many special needs populations.

New Unit Production

As shown by this Market Analysis section, housing production has not been keeping pace with demand, resulting in an increase in price. New unit production will increase the number of affordable units available to Mississippi households. The 2015 Housing and Community Development Survey results indicated a high level of need for new unit production, both rental and for-sale.

Rehabilitation

The state of Mississippi has seen a growth in the need for housing, and an increase in cost burdens. This combination calls for rehabilitation of existing units, especially homeowner, in order to meet the needs of households throughout the state. The results of the 2015 Housing and Community Development Survey also indicated a high level of need for unit rehabilitation.

Acquisition, including preservation

As shown previously in this Plan, there are a number of subsidized units at risk of expiring. As the demand for affordable rental units continues to increase, the loss of these units will place additional households in need. This, in addition to survey results, has indicated a high level of need for preservation of affordable units.

F. ANTICIPATED RESOURCES

For the Strategic Plan years 2015 through 2019, the Mississippi Housing Corporation anticipates receiving CDBG, HOME, ESG and HOPWA funds. Table VII.1, below, represents the anticipated resources for the State of Mississippi.

Table VII.1
Anticipated Resources
State of Mississippi

Program	Source of Funds	Expected Amount Available at Year 1			Total
		Annual Allocation	Program Income	Prior Year Resources	
CDBG	public- federal	$23,051,271	$650,000		$23,701,271
HOME	public- federal	$6,567,447			$6,567,447
ESG	public- federal	$2,247,444			$2,247,444
HOPWA	public- federal	$988,917			$988,917

Leveraging

Community Development Block Grant (CDBG) - Local units of government will provide matching funds for the public facilities projects and economic development projects. On economic development projects, tier 1 and 2 counties are required to provide a 10%

match and tier 3 counties are required to make best offer up to 10% match. For public facilities projects, local units of government with 3,500 or greater population may provide a match to increase their funding chances in the competitive process. CDBG State Administration will be up to 3% of the allocation plus the first $100,000 or $780,000 Federal funds. State of Mississippi will provide 1:1 match for State Administration except for the first $100,000 Federal Funds. HOME Investment Partnerships Program Grant (HOME)- Due to fiscal distress, HUD exempts the matching requirement for the State of Mississippi. HUD's exemptions are listed on the website:

Potential buyers must qualify for a mortgage and HOME funding will be used for down payment assistance and closing costs. HOME State Administration will be up to 10% of the allocation or $700,000. Emergency Solutions Grant (ESG) - Sub recipients will provide the dollar for dollar match funds. The matching funds will be shown at the time of application. ESG State Administration will be up to 7.5 of the allocation or $150,000. The Mississippi Department of Health will use up to 3% of the allocation or $28,904 HOPWA funds for State Administration.

Mississippi Development Authority administers all the Low-Income Housing Tax Credits for the State of Mississippi. Low-Income Housing Tax Credits are not applicable to 2015 Action Plan.

G. Institutional Delivery Structure

Mississippi will meet its responsibility to provide decent and affordable housing, and the State will aid in the development of viable communities with suitable living environments and expanded economic and community development opportunities. This will be done with the help and support of a network of public institutions, nonprofit organizations, and private industries, of which many will be discussed below. The State is fortunate to have a strong working relationship with and between its service agencies. The Mississippi Development Authority will be responsible for administering CDBG funds. The Mississippi Home Corporation will be responsible for administering HOME, ESG and HOPWA funds. Working collaboratively, the State has the institutional delivery structure in place to implement the goals and objectives outlined in this Consolidated Plan.

Strengths and Gaps of the Institutional Delivery System

The MHC and MDA will continue to work closely with Mississippi agencies, the state's CoCs, and other statewide and local entities to ensure the needs of the state are being met. MHC will continue to coordinate efforts with other state agencies, being responsive the needs of the residents of the State of Mississippi.

SERVICES TARGETED TO HOMELESS PERSONS AND PERSONS WITH HIV

The three Continuums of Care within the state serve to coordinate care across the state. Utilizing HMIS to best assess and address needs, the service providers within the State are able to coordinate to provide persons with HIV and homeless persons with the best suited services for their needs. There are varying levels of services provided in the state, with more services being available in more urban areas. Nonetheless, the CoCs serve to help fill these gaps by coordinating state efforts to improve access to services across the state. Services, such as employment training, healthcare and mental health counseling are a part of the network of care the CoCs promote throughout the state.

The State will continue to fund efforts throughout the state to meet the needs of special needs populations and the homeless. These efforts are constrained by the amount of need and the lack of funds available. Meeting needs are stifled by the availability of services and the capacity of service providers throughout the state. In statewide networks of care, every attempt is made to serve the needs of the population. Through the coordination of local service providers, and a statewide strategy, efforts to address needs are done in a strategic way to help address both individual and system wide needs.

Availability and Targeting of Services

Table VIII.2
Availability and Targeting of Services
State of Mississippi
MDA

Homelessness Prevention Service	Available in the Community	Targeted to Homeless	Targeted to People with HIV
Homelessness Prevention Services			
Counseling/Advocacy	X	X	X
Legal Assistance	X		
Mortgage Assistance	X		X
Rental Assistance	X	X	X
Utilities Assistance	X	X	X
Street Outreach Services			
Law Enforcement	X	X	
Mobile Clinics	X	X	
Other Street Outreach Services	X	X	
Supportive Services			
Alcohol & Drug Abuse	X	X	X
Child Care	X	X	X
Education	X	X	X
Employment and Job Training	X	X	X
Healthcare	X	X	X
HIV/AIDS	X	X	X
Life Skills	X	X	X
Mental Health Counseling	X	X	X
Transportation	X	X	X

H. Strategic Goals of the Mississippi Consolidated Plan

The following list presents the overriding strategies and goals of the Mississippi Five-Year Consolidated Plan for Housing and Community Development, including selected performance criteria associated with each strategy and goal. Furthermore, there may be a need to direct such housing resources by use of project selection criteria, which may be updated annually, based upon year-to-year need and local circumstances.

The strategies the state will pursue over the next five years are as follows:

Housing Strategies:

5. Enhance the quality affordable housing through new construction and substantial rehabilitation
6. Preserve the affordable housing stock through rehabilitation
7. Enhance availability of affordable housing by promoting homeownership
8. Promote Homeownership for the Disabled with the Disabled Housing Initiative

Community Development Strategies:

3. Encourage economic development opportunities that retain and expand existing businesses and attract new businesses in Mississippi
4. Enhance the quality of Mississippi's public facilities

Homelessness and HIV Strategies:

5. Provide for emergency shelters
6. Provide for rapid re-housing assistance for those at risk of homelessness
7. Enhance homeless prevention and HMIS
8. Enhance housing and services for persons with HIV/AIDS

Each of the priorities identified above, as well as the objectives consistent with each strategy are discussed in greater detail below. Performance measurement criteria are presented at the end of each priority narrative.

Housing Strategies

The population throughout Mississippi continues to have unmet housing needs. The MDA is striving to answer the call for affordable housing throughout the state. Through various means, the State will encourage the increased availability, accessibility and sustainability of decent affordable housing for Mississippians.

1. Enhance quality affordable housing through new construction and substantial rehabilitation

The State will promote the construction of new multi-family housing and substantial renovation through CHDO set-asides

Outcome: Availability/Accessibility

Objective: Provide Decent Affordable Housing

Annual Funding: HOME $1,040,000

Five-Year Goal:

Rental Units Added 220 Households Housing Units

2. Preserve the affordable housing stock through Rehabilitation

The State will promote provide funds for homeowner rehabilitation to eliminate substandard owner-occupied housing for very-low and low income citizens by rehabilitating safe, decent and affordable housing.

Outcome: Sustainability

Objective: Provide Decent Affordable Housing

Annual Funding: HOME $3,427,477

Five-Year Goal:

Homeowner Housing Rehabilitated 290 Housing Units

3. Enhance availability of affordable housing by promoting homeownership

The State will promote homeownership through funding homeowner assistance, including down-payment assistance and closing costs.

Outcome: Affordability

Objective: Provide Decent Affordable Housing

Annual Funding: HOME $1,000,000

Five-Year Goal:

Direct Financial Assistance to Homebuyers 785 Households Assisted

4. Promote Homeownership for the Disabled with the Disabled Housing Initiative

The State will promote homeownership for disabled households through the Disabled Housing Initiative: Home of Your Own (HOYO) Homebuyer Assistance

Outcome: Affordability

Objective: Provide Decent Affordable Housing

Annual Funding: HOME $450,000

Five-Year Goal:

Direct Financial Assistance to Homebuyers 350 Households Assisted

COMMUNITY DEVELOPMENT STRATEGIES

The State of Mississippi is committed to helping to encourage economic growth and improve the quality of public facilities in the state to meet the needs of residents.

1. Encourage economic development opportunities

The State will encourage economic development opportunities that retain and expand existing businesses in the State of Mississippi, as well as retain or add new jobs for low to moderate income residents.

Outcome: Sustainability

Objective: Create Economic Opportunities

Annual Funding: CDBG $11,000,000

Five-Year Goal:

Jobs created/retained 3,100 Jobs

2. Enhance the quality of Mississippi's public facilities

The State will fund local units of government and other entities to improve public facilities.

Outcome: Sustainability

Objective: Create Suitable Living Environment

Annual Funding: CDBG $11,291,271

Five-Year Goal:

Public Facility or Infrastructure Activities other than Low/Moderate Income Housing Benefit 387,500 households assisted

HOMELESSNESS AND HIV STRATEGIES

The State of Mississippi is committed to working towards reducing and ultimately ending homelessness within the State. MDA will commit ESG funds to combat homeless and provide for persons who are homeless or are at risk of homelessness. The State is also committed to meeting the needs of persons with HIV/AIDS and their families. The State

will dedicate HOPWA resources to meet the housing and supportive service needs of this population.

1. Provide for emergency shelters

The State will provide financial support for emergency shelters that serve the homeless population throughout the State.

Outcome: Availability/accessibility

Objective: Provide decent affordable housing

Annual Funding: ESG $900,000

Five-Year Goal:

Homelessness Prevention 18,250 Persons Assisted

2. Provide for rapid re-housing assistance for those at risk of homelessness

The State will provide for rapid re-housing assistance for homeless persons in the State of Mississippi.

Outcome: Affordability

Objective: Provide decent affordable housing

Annual Funding: ESG $640,000
Five-Year Goal:

Rapid Re-housing 1,250 Households Assisted

4. Enhance homeless prevention activities and HMIS

The State will provide support, including services and outreach for persons at imminent risk of becoming homeless

Outcome: Sustainability

Objective: Create Suitable Living Environments

Annual Funding: ESG $557,444

Five-Year Goal:

Homeless Prevention 500 Persons Assisted

5. Enhance housing and services for persons with HIV

The State will enhance the housing and services available to persons with HIV/AIDS and their families through the HOPWA program. HOPWA program components include STRMU, TBRA, short-term supportive housing, master leasing, permanent housing

placement, housing information, supportive services, resource identification and technical assistance.

Outcome: Availability/Accessibility

Objective: Create Suitable Living Environments

Annual Funding: HOPWA

Five-Year Goal:

Homelessness Prevention	1,500 Persons Assisted
HIV/AIDS Housing Operations	2,025 Households Housing Units

APPENDIX A: CITIZEN PARTICIPATION PLAN

Mississippi Citizen Participation Plan

INTRODUCTION

The State of Mississippi has developed and will follow a detailed **Citizen Participation Plan** in accordance with the requirements found in Section 104 (a)(2) and (a)(3) of Title I of the Housing and Community Development Act of 1974, as amended, 24 CFR Part 570.486 of the State CDBG Regulations, and the State Consolidated Plan Regulations at 24 CFR Part 91.115, which provides for, and encourages, Citizen Participation and which emphasizes participation by persons of low and moderate income, particularly residents of predominantly low and moderate income neighborhoods, slum or blighted areas, and areas in which the State of Mississippi proposes to use Federal funds.

In order to provide economic opportunities for low and moderate income persons, the State of Mississippi actively seeks to build partnerships in which those citizens most affected and participate in the development and implementation of the Federal programs administered by the State. This Citizen Participation Plan is intended to establish the policy and procedures for Citizen Participation in compliance with 24 CFR 91.115 and will:

- provide citizens with reasonable and timely access to local meetings, information, and records related to the Mississippi Development Authority's proposed and actual use of funds;
- provide for public hearings to obtain citizens' views and to respond to proposals and questions at all stages of the HUD Federally-funded programs, including at least the development of needs, review of proposed activities, and review of program performance;
- provide for timely written responses to written comments, complaints, and grievances;
- identify how the needs of non-English speaking residents will be met in the case of public hearings where a significant number of non-English speaking residents can be reasonably expected to participate.

NON-COMPETITIVE SET-ASIDE PROGRAMS

For non-competitive set-aside awards, which are conducted in accordance with the State's citizen participation process, through either the Consolidated Plan or the Annual Action Plan processes, the State will not require a duplicative citizen participation process of initial or second public hearing for the non-competitive set aside Sub-recipients.

Examples of the non-competitive awards are: The **Home of Your Own (HOYO)** Program at the University of Southern Mississippi Institute for Disability Studies and The **Home Loan Plus (HLP)** Program at the Mississippi Development Authority. These set-aside funds are available

statewide to program eligible applicants except those who reside within the Consortium of Biloxi/Gulfport and the Entitlements of Hattiesburg and Jackson.

DEVELOPMENT OF THE CONSOLIDATED PLAN AND ONE-YEAR ACTION PLAN

Before the State of Mississippi adopts the Consolidated Plan and One-Year Action Plan, citizens, local units of government, public agencies (businesses, developers, community-based organizations, faith-based organizations), and other interested parties are given an opportunity to provide input on housing and community development needs and priorities as part of the preparation of the Consolidated Plan and One-Year Action Plan. Citizens will also have an opportunity to participate in the development of the Consolidated Plan and One-Year Action Plan, during the Public Hearings and through written comments.

At the Public Hearings, citizens receive information about the programs involved in the Plan, including the amount of assistance the State of Mississippi expects to receive and the range of activities that may be undertaken, including the estimated amount that will benefit persons of low and moderate income and the plans to minimize displacement of persons and to assist any persons displaced, along with a proposed timeline.

The State of Mississippi will publish notices regarding the schedule of Public Hearings for the Consolidated Plan and Action Plan through statewide and regional newspapers of general circulation and other publications directed to, or reaching minorities, along with Community Services Division Instructions. MDA will publish a notice of the Public Hearing(s) not less than fourteen (14) days and no more than twenty (20) days prior to the date of the Public Hearing(s) in the legal or non-legal section of a newspaper of general circulation. Public Hearing announcements will also be published on the Mississippi Development Authority's (MDA) website, www.mississippi.org/csd.

All Public Hearings will be held at times and locations accessible and convenient to potential and actual beneficiaries. The Mississippi Development Authority will make a translator available at all Public Hearings based upon individual(s) request or where a significant number of non-English speaking persons or interest groups notify MDA's Community Services Division Compliance Bureau at least three (3) business days prior to the Public Hearing and request appropriate translation service. MDA will make special arrangements for the attendance of persons with disabilities who notify MDA at least three (3) business days prior to the Public Hearings and identify and request the special accommodations needed. However, all Public Hearings will be held at accessible locations.

To afford the public and/or citizens the opportunity to examine and comment regarding the Draft Consolidated Plan/One Year Action Plan, the State of Mississippi will publish a notice in statewide and regional newspapers of general circulation and other publications directed to, or reaching minorities, and will utilize various social media outlets, along with Community Services Division Instructions. The State of Mississippi will establish a 30-day public review and comment period. The notice will encourage all interested parties to participate and provide their comments and input on the Draft Consolidated Plan/One Year Action Plan. All public

comments must be submitted in writing to MDA. The Draft Consolidated Plan/One Year Action Plan will also be published on the Mississippi Development Authority's website, www.mississippi.org/csd.

Upon request, the Mississippi Development Authority will make available free copies of the Draft Consolidated Plan/One Year Action Plan. The comment section of the Plan(s) shall include said commentary and provide information regarding how the comment(s) was addressed or incorporated into the Plan(s). Following the 30-day comment period, the Mississippi Development Authority will consider any comments or views of citizens received in writing while preparing the final Consolidated Plan. A summary of these comments or views will be attached to the Consolidated Plan.

CONSOLIDATED PLAN AND ONE- YEAR ACTION PLAN AMENDMENTS

The State of Mississippi has defined Substantial Amendments to the Plan(s) as those proposed changes that require the following decisions:

- Addition or deletion of the established priorities of the Plan(s)
- Any change in the purpose or location of an identified project
- Any change in the scope of work of a project which will negatively impact the originally proposed results
- The allocation or re-allocation of more than 10%, unless provided for otherwise in the Plan
- Change in the planned beneficiaries

Those amendments which meet the definition of a Substantial Amendment are subject to public notification and public comment procedures. Citizens and Local Units of Government will be provided with reasonable notice and an opportunity to comment on proposed Substantial Amendments to the Plan(s). A notice and copy of the proposed Substantial Amendments will be available on the MDA website www.mississippi.org/csd. In the event that Substantial Amendments to the Plan(s) are found necessary, a notice will be published by the aforementioned same procedures for a 30-day comment period and Public Hearings will be held at locations and times accessible and convenient to citizens, Local Units of Government, public agencies, community-based organizations, faith-based organizations, and other interested parties.

PERFORMANCE REPORTS

The State of Mississippi will submit all required Performance Reports to HUD prior to the deadline dates and times. The availability of the Performance Reports for public comment will be published throughout statewide and regional newspapers of general circulation and other publications directed to, or reaching minorities, along with Community Services Division Instruction and will be made available on the MDA website at www.mississippi.org/csd. All comments received will be reviewed by MDA and a written response will be mailed to each citizen submitting a comment within 15 business days of receipt. A summary of the comments and responses will be included with the submitted Performance Reports.

AVAILABILITY TO THE PUBLIC

The Consolidated Plan, One-Year Action Plan, and other Performance Reports are made available to the public and can be obtained online at www.mississippi.org/csd. Copies may be obtained from the Community Services Division located in the Woolfolk State Building, 501 North West Street, Suite #501, Jackson, MS 39201. Public access includes the availability of materials in a form accessible to persons with disabilities, upon request. In addition, a translator will be made available for non-English speaking residents in accessing information, upon request.

ACCESS TO RECORDS

The Plan(s) provides for full and timely disclosure of program records and information consistent with applicable State and Federal laws regarding personal privacy and obligations of confidentiality. Documents relevant to the programs shall be made available at the Mississippi Development Authority's Community Services Division located in the Woolfolk State Building, 501 North West Street, Suite #501, Jackson, MS 39201, during regular office hours of 8:00 a.m. to 5:00 p.m., for citizen review upon a written public records request. Such documents include:

1. All mailings and promotional materials
2. Records of Public Hearings
3. All pertinent documents, including prior applications on hand, letters of approval, grant agreements, the Citizen Participation Plan, CAPERs, other Performance Reports required by HUD, and the proposed and approved application for the current year
4. Copies of the regulations and issuances governing the program(s)
5. Documents regarding other important program requirements, such as contracting procedures, environmental policies, fair housing and other equal opportunity requirements, and relocation provisions

COMPLAINTS

Any citizen desiring to file a complaint regarding the Consolidated Plan, One-Year Action Plan, Performance Reports, and any Amendments to these plans, may do so. The Mississippi Development Authority's Community Services Division will provide a written response to all complaints received in writing within fifteen (15) business days. A record of complaints received will include the nature of the complaint, referrals made, and the final disposition. If the complainant is unable to file a complaint due to a disability, alternative filing methods will be allowed. All complaints and responses will be maintained with the program records for at least five years. This record will be included with the final document(s) submitted to HUD.

If an interpreter/translator or any other accommodations are needed, please contact Ray Robinson, Jr., Compliance Bureau Manager, at 601.359.9273.

All correspondence should be addressed to: Mississippi Development Authority, Community Services Division, Post Office Box 849, Jackson, Mississippi 39205-0849.

CITIZEN PARTICIPATION REQUIREMENTS

LOCAL UNITS OF GOVERNMENT, NON-PROFIT ORGANIZATIONS AND COMMUNITY DEVELOPMENT ORGANIZATIONS (CHDOS)

Each Local Unit of Government and Non-Profit Organizations/CHDOs seeking Federal funds from CSD shall meet the following requirements as required by the State set forth at 24 CFR 91.115(e) of the Housing and Community Development Act of 1974. All Local Units of Government and Non-Profit Organizations/CHDOs must meet all citizen participation requirements prior to submittal of an application for Federal funds. It will be the Local Unit of Government's/Non-Profit Organization's responsibility to provide documentation to CSD demonstrating these requirements have been met and have a written adopted *Citizen Participation Plan* that:

- Encourages *Citizen Participation* with particular emphasis on participation by persons of low and moderate income, who are residents of areas in which the HUD funds are proposed to be used, and in the case of a grantee described in Section 106(a) of the Act, provides for participation of residents in low and moderate income neighborhoods as defined by the local jurisdiction;

- Provides citizens with reasonable and timely access to local meetings, information, and records relating to the written complaints and grievances;

- Provides for technical assistance to groups representing persons of low and moderate income who request assistance in developing proposals with the level and type of assistance to be determined;

- Provides for reasonable opportunities to obtain citizens' views, comments and responses to proposals, and questions at all stages of the program, including at least the development of needs, the review of proposed activities, and review of program performance. In order to comply with the *Citizen Participation* requirement, information must be posted on the applicant's/grantee's official website;

  If applicant/grantee does not have an official website, the information must be posted in public places in the jurisdiction with directions as to where the information may be inspected. In addition to the web posting or advertising, the public can also be made aware of grant information by public service announcements and bulletins posted at public places. All comments must be responded to, in a timely manner and maintained;

- Provides for a timely written answer to written complaints and grievances, within fifteen (15) business days; and

- Identifies how the needs of non-English speaking residents will be met where a significant number of non-English speaking residents can be reasonably expected to participate.

The provision and implementation of a *Citizen Participation Plan* may not be construed to restrict the responsibility or authority of the potential grantee for the development and execution of its community development program(s). All applicants/grantees must adopt a *Citizen Participation Plan* and provide documentation of compliance throughout the term of the grant agreement. The components of the *Citizen Participation Plan* and the kind of information necessary to meet the requirements are discussed in the following section.

The Initial Public Hearing

- An initial Public Hearing must be conducted in the proposed project area to inform the local citizens of the applicant's intention to apply for funds and to obtain local citizens' input. The Public Hearing will be held no less than **seven (7) days** prior to the 1st due date of an application submittal, at times and locations accessible and convenient to potential and actual beneficiaries.

- The applicant must publish a notice of the initial Public Hearing not less than **fourteen (14) days and no more than twenty (20) days** prior to the date of the Public Hearing in the **legal or non-legal** section of a newspaper of general circulation. This notice must specify the **actual activities proposed** to be undertaken, should the project be funded. In addition to the newspaper publication, the applicants must make every effort and is encouraged to use additional methods of informing the public of the Public Hearing, especially those citizens residing in low to moderate income neighborhoods.

- During the Public Hearing, the applicant must furnish information to the citizens concerning the amount of funding available statewide for proposed community development activities, the types of eligible activities that may be undertaken, amount of CDBG/HOME funds expected to benefit low to moderate income persons, the proposed CDBG/HOME activities likely to result in displacement, and the applicant's plans to minimize displacement of persons and to assist displaced persons.

- The applicant must inform citizens that written comments will be accepted regarding the proposed use of funds and areas to be targeted for assistance and must provide a reasonable time period and location for submittal of written comments. Technical assistance must be provided to representatives of persons of low to moderate income as appropriate in developing program input.

- The applicant must ensure that local files contain documentary evidence that the Public Hearing was held, including the actual notice, original proof of publication of the notice, the attendance roster and detailed minutes of the meeting. Copies of these documents must be submitted to the State with the application. The applicant must also retain the attendance roster and minutes of the meeting in the file for public review. All pertinent records, including written citizens' comments must be maintained and made available for review by the State at the primary office of the applicant. Should the applicant receive an on-site visit, this information must be available for review. The Chief Elected Official or Executive Director of the applicant must sign the written minutes of the Public Hearing.

- In determining the proposed project location and needs to be addressed by the proposed project, the applicant must consider both citizen input that was received during the public meeting and the written comments that were received within the designated time frame after the public hearing.

- The State encourages the establishment of a local task force composed of residents from the project area. In the event that local interest is not sufficient to establish a task force, the recipient must still conduct a Public Hearing during the project's implementation.

- The recipient must document its citizen participation process. Such documentation should describe the method used to obtain citizen input throughout its project and include records of all Public Hearings.

The Second Public Hearing

- After notification of funding award, a second Public Hearing must be conducted during the life of the project to provide a review of program performance. The Public Hearing should be held at times and locations accessible and convenient to potential and actual beneficiaries. **MDA recommends that all Second Public Hearings be held prior to 50% of project completion.**

- The same method of notifying the public of the initial Public Hearing must be used for the second Public Hearing. Recipients are encouraged to use additional methods to notify persons in the area where the project is on-going.

- Records of the meeting must be retained in the local files. These records must include a copy of the actual notices, the attendance roster, and a copy of the minutes of the Public Hearing that bear the signature of the recipient's Chief Elected Official or Executive Director.

- The State encourages the establishment of a local task force composed of residents from the project area. In the event that local interest is not sufficient to establish a task force, the recipient must still conduct a Public Hearing during the project's implementation.

- The recipient must document its citizen participation process. Such documentation should describe the method used to obtain citizen input throughout its project and include records of all Public Hearings.

CALCULATION OF TIME FOR PUBLIC HEARINGS

In calculating any period of publication required under a CDBG/HOME project, the first day of the advertisement **shall not** be counted in the calculation.

Publication Example: For a 14 to 20 day Citizen Participation Public Hearing scheduled for February 10th, the Sub-recipient should calculate as follows:

Earliest possible advertisement date: January 20th (20 Days)
Latest possible advertisement date: January 26th (14 Days)

Applicants/Sub-recipients **shall not** schedule hearings or bid openings on Sundays or legal holidays. Whenever a public comment period ends on a Saturday, Sunday, or legal holiday, grantees shall accept comments until the end of the next day that is not a Saturday, Sunday, or legal holiday.

PHIL BRYANT
GOVERNOR

March 13, 2015

Ms. Donna L. Wickes, Director
Community Planning and Development
U.S. Department of Housing and Urban Development
Dr. A.H. McCoy Federal Building
100 W. Capitol Street, Suite 910
Jackson, MS 39269-1096

Dear Ms. Wickes:

Pursuant to the requirements of Title 1 of the Housing and Community Development Act of 1974, as amended, I hereby designate the following agencies of the State of Mississippi to administer each respective formula grant program beginning with Program Year 2015:

> Community Development Block Grant (24 CFR part 570) shall be administered by the Mississippi Development Authority. The Executive Director, or designee, shall serve as the authorized representative and have full authority to act on behalf of the State of Mississippi.
>
> HOME Investment Partnerships Program (24 CFR part 92) shall be administered by the Mississippi Home Corporation. The Executive Director, or designee, shall serve as the authorized representative and have full authority to act on behalf of the State of Mississippi.
>
> Emergency Solutions Grant (24 CFR part 576) shall be administered by the Mississippi Home Corporation. The Executive Director, or designee, shall serve as the authorized representative and have full authority to act on behalf of the State of Mississippi.
>
> Housing Opportunities for Persons with Aids (24 CFR part 574) shall be administered by the Mississippi Home Corporation. The Executive Director, or designee, shall serve as the authorized representative and have full authority to act on behalf of the State of Mississippi.

Additionally, I hereby designate the Mississippi Home Corporation as the lead agency for the purposes of the Analysis of Impediments to Fair Housing Choice, Consolidated Plan for Housing and Community Development, Consolidated Annual Performance and Evaluation Report, etc.

STATE OF MISSISSIPPI • OFFICE OF THE GOVERNOR
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Ms. Donna L. Wickes
March 13, 2015
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As Governor of the State of Mississippi, I express my gratitude for the partnership that we share with the U.S. Department of Housing and Urban Development. Our joint efforts have resulted in community development and housing programs and policies that benefit and serve low- and moderate-income persons in our state. If there are any questions, please contact Steve Hardin, Director of the Community Services Division at the Mississippi Development Authority at 601-359-2366.

Sincerely,

Phil Bryant
GOVERNOR

cc: Brent Christensen
Dr. Mary Currier
Scott Spivey
Manning McPhillips
Steve Hardin

APPENDIX B: 2014 ANALYSIS OF IMPEDIMENTS

The Mississippi Development Authority conducted an Analysis of Impediments in 2014. The following represents the summary of the 2014 Analysis of Impediments.

ANALYSIS OF IMPEDIMENTS TO FAIR HOUSING CHOICE - PURPOSE AND PROCESS

As a requirement of receiving funds under the Community Development Block Grant (CDBG), the HOME Investment Partnerships (HOME), and the Emergency Solutions Grant (ESG), entitlement jurisdictions must submit certification of affirmatively furthering fair housing to the U.S. Department of Housing and Urban Development (HUD). This certification has three elements:

1. Complete an Analysis of Impediments to Fair Housing Choice (AI),
2. Take actions to overcome the effects of any impediments identified, and
3. Maintain records reflecting the actions taken in response to the analysis.

In the *Fair Housing Planning Guide*, page 2-8, HUD provides a definition of impediments to fair housing choice as:

- Any actions, omissions, or decisions taken because of race, color, religion, sex, disability, familial status, or national origin which restrict housing choices or the availability of housing choices [and]
- Any actions, omissions, or decisions which have [this] effect.[62]

The list of protected classes included in the above definition is drawn from the federal Fair Housing Act, which was first enacted in 1968. However, state and local governments may enact fair housing laws that extend protection to other groups, and the AI is expected to address housing choice for these additional protected classes as well.

The AI process involves a thorough examination of a variety of sources related to housing, the fair housing delivery system, and housing transactions, particularly for persons who are protected under fair housing law.

The development of an AI also includes public input and review via direct contact with stakeholders, public meetings to collect input from citizens and interested parties, distribution of draft reports for citizen review, and formal presentations of findings and impediments, along with actions to overcome the identified impediments.

IMPEDIMENTS TO FAIR HOUSING CHOICE AND SUGGESTED ACTIONS

Private Sector Impediments, Suggested Actions, and Measurable Objectives

[62] U.S. Department of Housing and Urban Development, Office of Fair Housing and Equal Opportunity. *Fair Housing Planning Guide*. Vol. 1, p. 2-8. http://www.hud.gov/offices/cpd/about/conplan/fairhousingexs/Module5_TopSevenAFFH.pdf

***Impediment 1*: More frequent denial of home purchase loans to black, Hispanic, and female applicants:** The perception that black, Hispanic, and female applicants found it more difficult to secure a home loan was cited by a number of survey respondents. This impression was shared by participants in fair housing forum discussion, and the perception was borne out in an analysis of home loan denials in non-entitlement areas of the state. Just over 30 percent of loan applications were denied to all applicants, but when those applicants were black the denial rate climbed to 45.2 percent. Hispanic applicants were denied 34.6 percent of the time, compared to a 28.4 percent denial rate for non-Hispanic applicants. Likewise, 36.1 percent of home loan applications from female applicants were denied, while 26.6 of applications from male applicants were denied.

Action 1.1: Educate buyers through credit counseling and home purchase training
Measurable Objective 1.1: Number of outreach and education activities conducted

***Impediment 2*: Predatory style lending falls more heavily on black borrowers:** This impediment was identified in review of home loan data collected under the Home Mortgage Disclosure Act and in results of the 2014 Fair Housing Survey. Predatory style lending refers to loans with high annual percentage rates (HALs).[63] While 24.7 percent of those who took out a home loan were issued a loan that was predatory in nature, the percentages of HALs to black and Hispanic borrowers were 38.7 and 27.3 percent, respectively.

Action 2.1: Educate buyers through credit counseling and home purchase training
Measurable Objective 2.1: Increase number of outreach and education activities conducted

***Impediment 3*: Discriminatory terms and conditions and refusal to rent:** This impediment was identified through review of the results of the fair housing survey, the fair housing forum discussion in Hattiesburg, and fair housing studies profiled in the literature review. Perception of discriminatory refusal to rent was relatively common among survey respondents, who cited race as the basis for this perceived discrimination. In addition, discrimination was identified as more common in the rental industry during the fair housing forum in Hattiesburg, and national fair housing studies focus on the persistence of discrimination in the rental housing industry.

Action 3.1: Enhance testing and enforcement activities and document the outcomes of enforcement actions
Measurable Objective 3.1: Increase number of testing and enforcement activities conducted
Action 3.2: Continue to educate landlords and property management companies about fair housing law
Measurable Objective 3.2: Increase number of outreach and education activities conducted
Action 3.3: Continue to educate housing consumers in fair housing rights

[63] See **Section V** for a more complete discussion of HALs.

Measurable Objective 3.3: Increase number of outreach and education activities conducted

***Impediment 4*: Failure to make reasonable accommodation or modification:** Discrimination on the basis of disability was one of the most common complaints that HUD received from Mississippi from 2004 through the beginning of 2014, and the refusal on the part of housing providers to make a reasonable accommodation for residents with disabilities was a relatively common accusation. Fair housing forum discussions turned at points to the difficulties that persons with disabilities face in convincing landlords to allow reasonable modifications or in finding accessible apartments, as well as to the difficulties that those in construction and property management face in interpreting accessibility requirements. These concerns were also reflected in commentary submitted with the fair housing survey. Finally, two of the six DOJ complaints filed against Mississippi housing providers in the last five years alleged discrimination on the basis of disability.

Action 4.1: Enhance testing and enforcement activities and document the outcomes of enforcement actions
Measurable Objective 4.1: Increase number of testing and enforcement activities conducted
Action 4.2: Educate housing providers about requirements for reasonable accommodation or modification
Measurable Objective 4.2: Increase number of training sessions conducted
Action 4.3: Conduct audit testing on newly constructed residential units
Measurable Objective 4.3: Number of audit tests completed

Public Sector Impediments, Suggested Actions, and Measurable Objectives

***Impediment 1*: Insufficient understanding of fair housing laws:** This impediment was identified through a review of the fair housing survey and the minutes taken at the four fair housing forums. Survey respondents and forum participants alike continually cited a need for more education of fair housing law and policies, as well as the types of actions that could constitute unlawful violations of the Fair Housing Act. In addition, results from the fair housing survey indicate some confusion among respondents on several matters relating to fair housing policy, including the extent of protections offered under the Fair Housing Act. Finally, nearly a quarter of fair housing survey respondents who reported their level of awareness of fair housing laws professed to know "very little" about such laws.

Action 1.1: Conduct outreach and education to the public for several perspectives related to fair housing
Measurable Objective 1.1: The number of outreach and education actions taken in regard to the value of having housing available to all income groups in the state, thereby encouraging neighborhoods to be more willing to accept assisted housing facilities
Measurable Objective 1.2: Participate in sponsorship or co-sponsorship of public meetings during April, Fair Housing Month

Measurable Objective 1.3: Request on a periodic basis fair housing complaint data from the Mississippi Center for Justice and HUD and publish this information to teach others about fair housing

***Impediment 2*: Insufficient fair housing testing and enforcement in non-entitlement areas of Mississippi:** This impediment was identified in the results of the 2014 Fair Housing Survey. Of those who answered the survey question concerning awareness of fair housing testing, only about a fifth were aware of any such testing. Furthermore, a majority of respondents who registered their opinion on current levels of fair housing testing thought that they were insufficient.

Action 2.1: Initiate an inventory of Fair Housing Initiative Program (FHIP) grantees or prospective grantees in Mississippi
Measurable Objective 2.1: Compile the inventory
Measurable Objective 2.2: Conduct outreach and exploratory discussions with FHIP entities who might be able to perform testing and enforcement activities in the State
Action 2.2: Number of contacts made with FHIP entities

***Impediment 3*: Fair Housing Infrastructure largely lacking:** This impediment was identified through review of the fair housing structure as well as the minutes from the Hattiesburg Fair Housing Forum. There is no state level agency that is charged with enforcing fair housing law in the state, just as there is no fair housing statute at the state level. The lack of such an agency, and the difficulties this presents for affirmatively furthering fair housing, were a dominant theme in the Hattiesburg Fair Housing Forum.

Action 3.1: Initiate an inventory of Fair Housing Initiative Program (FHIP) grantees or prospective grantees in Mississippi
Measurable Objective 3.1: Compile the inventory
Measurable Objective 3.2: Conduct outreach and exploratory discussions with FHIP entities who might be able to work in Mississippi
Action 3.2: Number of contacts made with FHIP entities

***Impediment 4*: Lack of understanding of the fair housing duties:** Just as housing consumers are often unaware and uninformed of their rights under the Fair Housing Act, housing providers can be unaware of their responsibilities under the Act. This lack of awareness often manifests itself as an unwillingness to make reasonable accommodations for residents with disabilities, though it can appear in other actions and omissions on the part of housing providers. The presence of this impediment was identified through review of the minutes of the fair housing forum and the results of the fair housing survey.

Action 4.1: Promote the Analysis of Impediments and Fair Housing Action Plans during Fair Housing Month in April
Measurable Objective 4.1: Actions taken to promote fair housing month and the Analysis of Impediments to Fair Housing Choice

Action 4.2: Hold quarterly meetings to promote public understanding of fair housing, affirmatively furthering fair housing, and key issues in lending
Measurable Objective 4.1: Number of meetings held

***Impediment 5*: Overconcentration of vouchers, assisted housing, and lower-income housing in selected areas of the State.** Geographic maps prepared that show the geographic dispersion of such housing is concentrated in selected non-entitlement areas of the State. Further analysis demonstrates that there is some correlation between locations of such housing and concentrations of poverty.

Action 5.1: Add additional criteria to assisted housing location and other investment decisions
Measurable Objective 5.1: Determine the additional criteria, such as concentration of poverty or concentration of racial or ethnic minority, and incorporate this in the decision process
Measurable Objective 5.2: Evaluate the implications of redevelopment and other investments in areas with high rates of poverty and/or higher concentrations of racial and ethnic minorities
Action 5.2: Facilitate the creation of certification classes for a small set of voucher holders so that they may qualify for enhanced value vouchers, a voucher that pays slightly higher than other vouchers
Measurable Objective 5.2: Facilitate education of prospective landlords about the qualities of certified holders of Housing Choice Voucher tenants
Action 5.3: Increase voucher use in moderate income neighborhoods
Measurable Objective 5.3: Facilitate education of prospective landlords about the qualities of Housing Choice Voucher
Action 5.4: In concert with Mississippi PHAs, open dialogue with HUD concerning elements of PHA operational and program requirements that may contribute to over-concentrations of assisted units in areas with high poverty rates and high concentrations of racial and ethnic minorities
Measurable Objective 5.4: Number of attempts to open dialogue, notes and recordings of meetings, recordings and notes about which changes can effect positive change to affirmatively further fair housing

Table C.1
Total Households with Housing Problems by Income and Race
Non-Entitlement Areas of Mississippi
2007–2011 HUD CHAS Data

Income	Non-Hispanic by Race/Ethnicity						Hispanic (Any Race)	Total
	White	Black	Asian	American Indian	Pacific Islander	Other Race		
With Housing Problems								
30% HAMFI or less	33,510	46,565	511	261	15	735	1,275	82,872
30.1-50% HAMFI	34,745	37,020	405	280	20	697	1,831	74,998
50.1-80% HAMFI	34,895	28,265	655	286	0	535	1,445	66,081
80.1-100% HAMFI	13,465	7,760	336	125	0	191	395	22,272
100.1% HAMFI or more	28,050	10,420	391	135	0	244	1,185	40,425
Total	144,665	130,030	2,298	1,087	35	2,402	6,131	286,648
Without Housing Problems								
30% HAMFI or less	8,591	10,522	60	80	0	121	170	19,544
30.1-50% HAMFI	27,225	16,260	106	210	0	241	315	44,357
50.1-80% HAMFI	55,600	29,865	445	436	0	537	1,326	88,209
80.1-100% HAMFI	42,995	20,920	205	280	20	231	822	65,473
100.1% HAMFI or more	333,765	82,130	3,345	1,470	45	2,435	5,220	428,410
Total	468,176	159,697	4,161	2,476	65	3,565	7,853	645,993
Not Computed								
30% HAMFI or less	7,172	7,750	201	34	0	125	385	15,667
30.1-50% HAMFI	0	0	0	0	0	0	0	0
50.1-80% HAMFI	0	0	0	0	0	0	0	0
80.1-100% HAMFI	0	0	0	0	0	0	0	0
100.1% HAMFI or more	0	0	0	0	0	0	0	0
Total	7,172	7,750	201	34	0	125	385	15,667
Total								
30% HAMFI or less	49,273	64,837	772	375	15	981	1,830	118,083
30.1-50% HAMFI	61,970	53,280	511	490	20	938	2,146	119,355
50.1-80% HAMFI	90,495	58,130	1,100	722	0	1,072	2,771	154,290
80.1-100% HAMFI	56,460	28,680	541	405	20	422	1,217	87,745
100.1% HAMFI or more	361,815	92,550	3,736	1,605	45	2,679	6,405	468,835
Total	**620,013**	**297,477**	**6,660**	**3,597**	**100**	**6,092**	**14,369**	**948,308**

Table
Households with Housing Problems by Income and Elderly Status
Non-Entitlement Areas of Mississippi
2007–2011 HUD CHAS Data

Income	Elderly	Extra-Elderly	Non-Elderly	Total
With Housing Problems				
30% HAMFI or less	13,285	9,690	59,885	82,860
30.1-50% HAMFI	14,665	10,055	50,260	74,980
50.1-80% HAMFI	11,297	6,021	48,780	66,098
80.1-100% HAMFI	3,730	1,165	17,350	22,245
100.1% HAMFI and above	6,776	1,795	31,845	40,416
Total	49,753	28,726	208,120	286,599
Without Housing Problems				
30% HAMFI or less	3,936	4,167	11,450	19,553
30.1-50% HAMFI	13,246	12,780	18,305	44,331
50.1-80% HAMFI	23,220	18,220	46,755	88,195
80.1-100% HAMFI	14,590	8,752	42,140	65,482
100.1% HAMFI and above	81,235	29,535	317,630	428,400
Total	136,227	73,454	436,280	645,961
Not Computed				
30% HAMFI or less	1,391	750	13,526	15,667
30.1-50% HAMFI	0	0	0	0
50.1-80% HAMFI	0	0	0	0
80.1-100% HAMFI	0	0	0	0
100.1% HAMFI and above	0	0	0	0
Total	1,391	750	13,526	15,667
Total				
30% HAMFI or less	18,612	14,607	84,861	118,080
30.1-50% HAMFI	27,911	22,835	68,565	119,311
50.1-80% HAMFI	34,517	24,241	95,535	154,293
80.1-100% HAMFI	18,320	9,917	59,490	87,727
100.1% HAMFI and above	88,011	31,330	349,475	468,816
Total	**187,371**	**102,930**	**657,926**	**948,227**

Table
Owner-Occupied Households by Cost Burden by Income and Family Status
Non-Entitlement Areas of Mississippi
2007–2011 HUD CHAS Data

Income	Elderly Family	Small Family	Large Family	Elderly Non-Family	Other Household	Total
Housing Problem						
30% HAMFI or less	3,575	13,210	2,901	11,665	8,485	39,836
30.1-50% HAMFI	5,286	13,940	3,455	11,400	6,115	40,196
50.1-80% HAMFI	5,635	18,305	5,170	5,280	6,435	40,825
80.1% HAMFI or more	5,855	26,445	8,605	3,035	8,335	52,275
Total	20,351	71,900	20,131	31,380	29,370	173,132
No Housing Problem						
30% HAMFI or less	661	1,080	236	3,761	1,375	7,113
30.1-50% HAMFI	5,620	6,225	981	13,875	3,335	30,036
50.1-80% HAMFI	17,560	19,915	4,185	14,805	7,250	63,715
80.1% HAMFI or more	74,930	238,860	31,950	23,265	43,235	412,240
Total	98,771	266,080	37,352	55,706	55,195	513,104
Not Computed						
30% HAMFI or less	506	2,265	155	1,036	3,030	6,992
30.1-50% HAMFI	0	0	0	0	0	0
50.1-80% HAMFI	0	0	0	0	0	0
80.1% HAMFI or more	0	0	0	0	0	0
Total	506	2,265	155	1,036	3,030	6,992
Total						
30% HAMFI or less	4,742	16,555	3,292	16,462	12,890	53,941
30.1-50% HAMFI	10,906	20,165	4,436	25,275	9,450	70,232
50.1-80% HAMFI	23,195	38,220	9,355	20,085	13,685	104,540
80.1% HAMFI or more	80,785	265,305	40,555	26,300	51,570	464,515
Total	**119,628**	**340,245**	**57,638**	**88,122**	**87,595**	**693,228**

Table

Renter-Occupied Households by Cost Burden by Income and Family Status

Non-Entitlement Areas of Mississippi
2007–2011 HUD CHAS Data

Income	Elderly Family	Small Family	Large Family	Elderly Non-Family	Other Household	Total
Housing Problem						
30% HAMFI or less	747	18,860	4,485	4,770	14,185	43,047
30.1-50% HAMFI	1,061	14,980	4,325	4,405	10,035	34,806
50.1-80% HAMFI	1,075	12,035	2,965	1,892	7,315	25,282
80.1% HAMFI or more	325	4,160	2,180	860	2,855	10,380
Total	3,208	50,035	13,955	11,927	34,390	113,515
No Housing Problem						
30% HAMFI or less	382	4,875	665	2,870	3,650	12,442
30.1-50% HAMFI	681	5,060	556	4,290	3,705	14,292
50.1-80% HAMFI	1,440	11,445	2,060	2,696	6,845	24,486
80.1% HAMFI or more	4,180	42,075	5,265	3,430	26,690	81,640
Total	6,683	63,455	8,546	13,286	40,890	132,860
Not Computed						
30% HAMFI or less	150	3,031	592	441	4,460	8,674
30.1-50% HAMFI	0	0	0	0	0	0
50.1-80% HAMFI	0	0	0	0	0	0
80.1% HAMFI or more	0	0	0	0	0	0
Total	150	3,031	592	441	4,460	8,674
Total						
30% HAMFI or less	1,279	26,766	5,742	8,081	22,295	64,163
30.1-50% HAMFI	1,742	20,040	4,881	8,695	13,740	49,098
50.1-80% HAMFI	2,515	23,480	5,025	4,588	14,160	49,768
80.1% HAMFI or more	4,505	46,235	7,445	4,290	29,545	92,020
Total	**10,041**	**116,521**	**23,093**	**25,654**	**79,740**	**255,049**

Table C.2
Real Earnings Per Job by Industry
State of Mississippi
BEA Data: Select Years 2001-2012, 2013 Dollars

NAICS Categories	2001	2006	2007	2008	2009	2010	2011	2012	2013	% Change 11-12
Farm employment	37,857	20,126	28,133	29,126	27,831	26,441	23,993	40,594	.	69.2%
Forestry, fishing, related activities, and other	37,741	38,053	35,536	33,015	32,335	38,302	35,262	37,200	.	5.5%
Mining	54,843	108,606	87,439	121,183	65,468	68,646	101,415	108,775	.	7.3%
Utilities	83,201	92,948	92,778	94,527	93,766	97,159	97,025	98,245	.	1.3%
Construction	41,727	43,995	42,152	44,346	44,754	46,536	46,875	50,109	.	6.9%
Manufacturing	47,372	52,456	53,371	54,490	55,356	56,139	56,600	58,956	.	4.2%
Wholesale trade	54,366	59,046	59,533	59,330	58,372	59,015	59,496	61,407	.	3.2%
Retail trade	27,292	30,052	28,834	27,833	28,362	29,057	28,909	29,606	.	2.4%
Transportation and warehousing	46,623	47,741	46,418	45,867	45,650	47,150	48,209	50,373	.	4.5%
Information	51,800	49,166	48,842	49,637	50,495	49,232	49,724	52,627	.	5.8%
Finance and insurance	47,031	50,061	44,842	43,199	44,718	46,428	42,731	43,197	.	1.1%
Real estate and rental and leasing	21,111	18,375	14,941	15,873	16,019	15,060	18,845	18,861	.	0.1%
Professional and technical services	50,698	50,069	50,124	53,975	52,223	49,560	50,163	51,053	.	1.8%
Management of companies and enterprises	76,108	78,486	82,967	76,531	82,948	80,723	83,768	88,253	.	5.4%
Administrative and waste services	21,289	23,775	23,073	23,348	22,846	23,349	22,758	23,800	.	4.6%
Educational services	23,882	25,365	25,106	25,768	26,710	26,512	27,198	28,696	.	5.5%
Health care and social assistance	46,890	48,315	47,513	48,762	48,807	48,302	46,919	47,831	.	1.9%
Arts, entertainment, and recreation	26,805	20,615	20,055	18,953	17,946	17,659	16,224	15,194	.	-6.3%
Accommodation and food services	22,232	21,997	22,156	21,880	21,423	21,618	21,763	21,940	.	0.8%
Other services, except public administration	28,633	30,466	29,276	28,112	28,100	28,825	27,224	27,443	.	0.8%
Government and government enterprises	43,999	50,699	51,215	52,340	53,023	53,555	53,195	52,811	.	-0.7%
Total	**39,306**	**41,487**	**40,934**	**41,715**	**41,393**	**41,690**	**41,516**	**42,812**	**.**	**3.1%**

Table C.3
Real Earnings by Industry
State of Mississippi
BEA Data: Select Years 2001-2013, 2013 Dollars

NAICS Categories	2001	2006	2007	2008	2009	2010	2011	2012	2013	% Change 12-13
Farm earnings	2,014,310	912,291	1,247,036	1,279,553	1,259,227	1,205,375	1,066,089	1,745,153	1,939,106	11.1%
Forestry, fishing, related activities, and other	584,682	555,465	510,900	472,253	437,167	521,331	486,047	515,924	571,637	10.8%
Mining	490,021	1,036,970	914,791	1,552,107	783,320	959,390	1,305,114	1,443,663	1,461,653	1.2%
Utilities	676,009	753,063	734,616	767,749	757,914	791,259	778,818	787,433	822,373	4.4%
Construction	3,569,996	4,556,136	4,483,896	4,661,541	4,152,883	4,091,281	4,076,666	4,287,085	4,906,547	14.4%
Manufacturing	9,696,460	9,425,390	9,264,541	8,914,060	8,080,866	7,863,065	7,934,753	8,370,867	8,429,739	0.7%
Wholesale trade	2,116,232	2,401,753	2,443,131	2,392,582	2,263,531	2,250,792	2,304,814	2,388,378	2,433,243	1.9%
Retail trade	4,642,425	5,186,879	4,988,678	4,709,137	4,643,240	4,684,737	4,735,199	4,863,465	4,915,817	1.1%
Transportation and warehousing	2,297,416	2,519,679	2,555,603	2,470,186	2,378,751	2,443,691	2,554,926	2,697,355	2,747,686	1.9%
Information	1,004,864	801,700	781,477	796,379	776,008	733,559	729,106	813,353	844,032	3.8%
Finance and insurance	2,210,286	2,424,440	2,308,119	2,312,712	2,504,312	2,551,538	2,464,731	2,526,850	2,606,064	3.1%
Real estate and rental and leasing	667,026	735,098	651,250	710,112	709,565	680,538	858,901	890,393	906,343	1.8%
Professional and technical services	2,361,445	2,725,761	2,826,524	3,106,920	2,883,836	2,735,979	2,775,651	2,819,290	2,842,671	0.8%
Management of companies and enterprises	832,703	791,769	859,622	844,211	908,277	876,648	945,068	996,111	1,019,321	2.3%
Administrative and waste services	1,175,747	1,773,933	1,799,825	1,848,895	1,740,679	1,925,488	1,979,599	2,154,383	2,351,550	9.2%
Educational services	420,638	544,046	556,162	595,578	630,407	663,958	678,895	737,024	755,584	2.5%
Health care and social assistance	5,133,239	6,136,432	6,359,940	6,649,934	6,815,503	6,938,325	6,979,447	7,200,666	7,301,468	1.4%
Arts, entertainment, and recreation	699,760	370,133	413,720	394,748	364,010	363,256	322,622	312,836	319,350	2.1%
Accommodation and food services	2,367,344	2,538,571	2,662,658	2,641,339	2,489,154	2,477,916	2,561,200	2,638,952	2,692,469	2.0%
Other services, except public administration	2,224,072	2,514,569	2,468,539	2,370,956	2,364,630	2,421,503	2,439,127	2,538,159	2,599,516	2.4%
Government and government enterprises	12,090,233	13,963,638	14,314,028	14,856,128	15,099,653	15,107,512	14,860,548	14,759,749	14,455,476	-2.1%
Total	**57,274,910**	**62,667,716**	**63,145,057**	**64,347,081**	**62,042,934**	**62,287,140**	**62,837,322**	**65,487,089**	**66,921,643**	**2.2%**

Table C.4
Total Employment and Real Personal Income
State of Mississippi
BEA Data 1969 Through 2013

Year	1,000s of 2013 Dollars						Per Capita Income	Total Employment	Average Real Earnings Per Job
	Earnings	Social Security Contributions	Residents Adjustments	Dividends, Interest, Rents	Transfer Payments	Personal Income			
1969	22,177,166	1,433,724	171,369	2,610,269	2,713,882	26,238,963	11,821	908,677	24,405
1970	22,550,904	1,451,665	168,998	2,792,190	3,219,587	27,280,013	12,281	916,796	24,599
1971	23,540,648	1,562,769	256,579	2,906,358	3,619,956	28,760,772	12,696	938,968	25,073
1972	25,944,180	1,797,165	310,074	3,039,932	3,913,141	31,410,162	13,613	978,740	26,509
1973	28,345,215	2,177,660	377,789	3,316,883	4,304,590	34,166,817	14,539	1,019,427	27,805
1974	27,921,603	2,284,809	455,276	3,617,984	4,867,297	34,577,351	14,539	1,031,293	27,075
1975	26,766,419	2,218,876	508,294	3,676,901	5,536,545	34,269,283	14,281	1,000,814	26,745
1976	29,479,835	2,436,533	585,184	3,767,560	5,722,403	37,118,448	15,272	1,038,827	28,378
1977	31,172,702	2,578,707	674,164	3,973,462	5,762,697	39,004,317	15,855	1,070,753	29,114
1978	32,400,221	2,784,511	789,354	4,298,613	5,928,288	40,631,965	16,330	1,100,550	29,440
1979	33,722,558	2,957,240	880,838	4,678,107	6,252,241	42,576,504	16,975	1,114,375	30,261
1980	31,998,376	2,918,168	1,019,152	5,464,840	6,871,322	42,435,522	16,804	1,111,313	28,794
1981	32,300,614	3,126,412	995,804	6,386,573	7,129,698	43,686,277	17,206	1,106,596	29,190
1982	31,400,479	3,099,570	974,919	6,819,598	7,383,050	43,478,476	17,004	1,079,218	29,096
1983	31,057,660	3,167,931	1,051,103	6,967,325	7,825,980	43,734,136	17,032	1,087,581	28,557
1984	33,278,165	3,403,943	1,136,743	7,568,334	7,818,680	46,397,979	17,997	1,117,040	29,792
1985	33,920,973	3,559,708	1,155,729	7,992,813	7,937,641	47,447,448	18,332	1,123,930	30,181
1986	34,431,267	3,705,059	1,104,543	8,033,739	8,241,020	48,105,510	18,547	1,130,753	30,450
1987	35,954,335	3,778,266	1,143,472	7,999,311	8,373,404	49,692,256	19,197	1,141,343	31,502
1988	37,286,284	4,086,463	1,173,656	8,264,020	8,620,005	51,257,501	19,865	1,169,037	31,895
1989	37,782,550	4,229,483	1,199,402	9,356,416	9,086,023	53,194,908	20,664	1,188,891	31,779
1990	38,556,642	4,482,411	1,194,399	9,160,574	9,499,514	53,928,717	20,912	1,202,603	32,061
1991	39,164,328	4,613,571	1,249,007	9,040,397	10,290,415	55,130,576	21,214	1,210,948	32,342
1992	41,310,887	4,810,033	1,247,913	8,957,493	11,283,674	57,989,935	22,102	1,233,701	33,485
1993	43,377,298	5,086,973	1,245,947	9,057,283	11,756,677	60,350,232	22,730	1,286,919	33,706
1994	46,449,658	5,477,629	1,215,941	9,664,129	12,205,977	64,058,076	23,823	1,334,700	34,801
1995	47,477,205	5,632,189	1,314,720	9,906,502	13,024,524	66,090,762	24,275	1,365,437	34,771
1996	49,127,896	5,710,696	1,348,839	10,508,467	13,682,849	68,957,355	25,093	1,389,237	35,363
1997	50,827,786	5,913,322	1,514,692	11,154,613	13,960,409	71,544,179	25,764	1,415,330	35,912
1998	53,968,234	6,232,995	1,604,187	12,259,619	13,928,539	75,527,583	26,927	1,452,518	37,155
1999	55,914,070	6,423,967	1,709,825	11,980,914	14,196,294	77,377,136	27,358	1,476,702	37,864
2000	56,797,340	6,459,078	1,924,271	12,707,773	14,928,889	79,899,194	28,051	1,481,524	38,337
2001	57,274,910	6,377,594	2,110,657	13,383,250	16,280,980	82,672,204	28,978	1,457,187	39,306
2002	57,425,248	6,535,343	2,088,685	12,845,572	17,224,045	83,048,206	29,051	1,456,124	39,437
2003	59,084,048	6,609,533	2,156,852	12,295,142	17,665,412	84,591,921	29,492	1,454,112	40,632
2004	61,501,762	6,817,973	2,254,016	11,846,500	18,488,110	87,272,415	30,208	1,473,065	41,751
2005	62,133,590	6,856,385	2,342,812	12,536,415	20,129,338	90,285,769	31,069	1,485,333	41,832
2006	62,667,716	7,194,391	2,475,552	13,793,352	19,716,985	91,459,215	31,484	1,510,533	41,487
2007	63,145,057	7,301,739	2,606,226	16,067,145	20,035,892	94,552,581	32,289	1,542,598	40,934
2008	64,347,081	7,394,759	2,688,369	15,490,364	21,925,122	97,056,177	32,925	1,542,564	41,715
2009	62,042,934	7,235,778	2,643,310	14,317,502	23,613,432	95,381,400	32,236	1,498,864	41,393
2010	62,287,140	7,254,949	2,721,046	13,645,103	25,039,476	96,437,817	32,480	1,494,047	41,690
2011	62,837,322	6,686,177	2,952,451	14,605,594	25,276,322	98,985,513	33,245	1,513,567	41,516
2012	65,487,089	6,779,368	3,170,944	15,026,206	25,060,383	101,965,254	34,160	1,529,661	42,812
2013	66,921,643	7,773,685	3,135,842	15,284,398	25,563,849	103,132,046	34,478	(NA)	(NA)

APPENDIX D: PUBLIC INVOLVEMENT PROCESS

The public involvement process followed the requirements specified in the Citizen Participation Plan, as noted in Appendix A. However, the following narrative and exhibits provide additional information about the outreach, notification, and public involvement opportunities offered to the citizen of Mississippi in the development of the 2015-2020 Mississippi Consolidated Plan for Housing and Community Development.

3/2/15 Flowood
No Audio

3/2/15 Marks

Comment 1: One thing I would like to see just as a citizen not as somebody who deals with the grant funds. I would like to see some kind of where ever there is homebuyer assistance or where ever there is a Home Program. I would like to see a class offered to help them learn about homeownership. Learn about if my sink is leaking how to get that fix instead of spending $200 on a plumber. Have some kind of basic homeowner education.

Rob Gaudin: I think that is an excellent idea. What do you think you need here, rehab?

Comment 2: I think what we need here is some rehab and new construction. Most of the house here are old houses and are beyond repair.

Rob Gaudin: So that would be like redevelopment where you tear down. So how many units do you think there are?

Comment 3: Probably (inaudible) need to be done. I would say probably about 30 to 40 houses.

Rob Gaudin: What about your water and sewer?

Comment 4: Water and sewer?

Rob Gaudin: How are you with capacity and the EPA?

Comment 5: We very badly need it. We just finished a water project about a year ago. We replaced some water lines and we need twice as many. (Inaudible)

3/3/15 McComb

Comment 1: I am an economics and I have done a few projections in my life. You have such a disproportionate representation in these non-entitled areas. This is almost meaningless to a small community, but you take from this region all the way to the Memphis line and try to draw conclusions about areas that are so different.

Rob Gaudin: You are absolutely correct.

Comment 2: That is a huge job here.

Rob Gaudin: You are absolutely correct and it is a challenge to be able to identify what the needs are uniformly. There are not uniform needs. This is why I want to hear from you about what your needs are. It is important to hear from McComb what is going on here. I can present the non-entitled as you suggest in less urbanized areas of the state and talk about what we see. These geographic maps that Ray showed you is all about Census tracts and certain things can really jump out when put in maps and you can really focus and they are all over the state. I am just showing you a few tables. I prepare maps too, but these things can go on for a long time. I do want to note that these things here regarding age are indisputable, because they are not my numbers. They are the Census bureau's numbers.

Comment 3: While we are discussing the population by age how the retired age groups have grown in numbers while the working age groups have either stayed the same or lowered. I think that is an indication of the state of the economy in this area. Your younger people are moving away to find jobs and if those numbers hold true than just like you said the 40 year olds will eventually become the 50 and 60 years old. The same is true about the 20 year olds becoming 30 and 40 years old. If the trend keeps on I mean we will end up being a community of just all retired people just hoping for the best I would like to see some more legislative effort putting monies into attracting businesses to this economy. Factories. We need to manufacture something in order to bring money into the area. Then your young people would quit leaving and the tax base will go up and then there is more money to do things with. Just a thought.

Rob Gaudin: The gentleman is absolutely right.

Comment 4: I am not an economist, but I did stay at the Holiday Inn one time.

(Laughter)

(Presentation)

Comment 5: Just going back to the original statement I made. I work and I service a lot of restaurants, a lot of businesses in the hospitality industry, hotels restaurants, and what not. Almost every one of those businesses without fail half of their employees are former factory workers who are now working at minimum wage where are they used to earn twice what

they do now. I think that is a lot of what we are seeing on these figures right here. It is not so much that minimum wage needs to be raised or anything likes that, but we need quality jobs.

Rob Gaudin: I agree with you.

Comment 6: Restaurants can only afford to pay just so much.

Rob Gaudin: Walmart recently announced that they were going to raise theirs and I didn't hear what it was. We are going to raise it from here to here. That is not a raise. You need to be above $21 just to get above the average. Our point is very well taken.

Comment 7: You know what is going to happen as an economist all of these restaurants and grocery stores are going to raise their sticker prices. So that little raise there they might have got on their minimum wage check might equate to an extra $40 a week after taxes, but they are going to spend an extra $50 a week just to try to make groceries. So it is actually a step backwards.

Rob Gaudin: I think I was at a Chili's one time and they had this device on the table where you can tap order your own food and I think that will eliminate some jobs when they computerize them.

Comment 8: I have heard talks about McDonalds.

Rob Gaudin: They will get rid of the jobs.

(Presentation)

Comment 9: I do have a little bit of info on that. I don't know if anyone in this room has tried to purchase a house in the last couple of years, but the banks are tight on their money. They raised the bar. It is way harder to qualify for a loan now then it was say ten years ago. You couple that will a stiff, a difficult economy and I feel like you have a lot of working class people that are going to have a hard time meeting the requirements to be able to borrow money to buy a new house or a used house or even a fixer upper house. So maybe when I was a child everybody went for the FHA program, the FHA houses or whatever. Maybe some sort of plan through HUD to fill in the gap between what the bank deems not good enough and the middle class people that don't quite qualify for banks.

Rob Gaudin: I think we do have some programs available for those individuals. I think it is incumbent upon us maybe we haven't done as good a job as we should in getting the word out about how those work. There are first-time homebuyer programs available from both the MDA and Home Corp. So there are two places at least where you can get these kinds of funds. I think we will have some discussion about that here shortly.

Comment 10: This is a mobile population. First homebuyer is not really the problem so much as this is a mobile population. People have to buy a house several times and they need mortgages every time.

(Presentation)

Comment 11: Well as a city administrator and dealing with development I think you do need areas where when you talk about economic development strategies where it goes to include all type of economic development. Because sometime you restrict economic development when we call and say can we get an economic development grant and we are telling you what we want, what is going up and you say oh we can't do it for something like that. Then you restrict us as a city as it relates to helping developers develop that for economic growth.

Rob Gaudin: I appreciate your commentary. I am not the expert in that particular filed, but I will say that there are federal guidelines that we need to follow and there are certain guidelines that are low/mod income households that need to benefit from economic development.

Comment 12: For an example for an economic development grant it says you must create X number of jobs. We recently went through this and I was told that we didn't qualify because of the type of economic development that was going on, but it is still economic development. You understand what I am saying?

Rob Gaudin: I do.

Comment 13: We may have three or four or five different economic development projects going on, but they didn't qualify for an economic development grant, because it wasn't a certain type of economic development. You are tying the cities hands when you are saying it has to be a specific type of economic development yet the three or four that are coming in that is going to bring in anywhere from 20 or 30 jobs, but you don't consider that as the proper type of economic development.

Comment 14: I will address that, because that is my baby. As far as the way MDA looks at economic development, it is by choice that we look at manufacturing, distribution, warehousing, the medical field only and one of the reasons is because they offer benefits and most of the time those jobs are not minimum wage. We don't look at retail or commercial because for the most part your retail or commercial are going to come regardless is we put a dime of money in that project or not. They are coming because the demographics are there for that particular type of project. So a Walmart is going to come whether we put money in or not. A Dollar General is going to come if the demographic are right for them to want to come there. Not because MDA is going to out in a water line or a sewer line. With our money being limited each year. You will look when we get to my part, our CDBG dollars have gone down. I can remember almost 20 years ago when we

would get about 48 or 50 million dollars a year. We are down to 23 million dollars a year. What we try to do is make the best advantage of those dollars as we can and we just do not feel that retail and commercial is the best fit for those dollars. You can chime in if you want to add something to that, but that is how we come to that.

Comment 15: I just want to agree with the lady. I don't feel like it benefits the citizens of Pike County to have another restaurant with minimum wage paying jobs. If we are going to spend money to attract business and spend money to build infrastructure to bring any kind of business it needs to be the larger industry type business and quality jobs.

Comment 16: On a city aspect like the City of McComb, our tax base is not based upon large industry. Our tax base is based upon our businesses, but what runs or turns the economic development in this city are the large businesses, it is the small business. We cannot open the door and help those then you are tying our hands as far as economic development for small cities.

Comment 17: You do go to the local planning and development district and they do have and most of them are loan funds. I do know that they have small business loans that those industry groups can go and offer funds that way.

Comment 18: Just to stay on the same subject here, City of McComb according to the newspaper is in the process of annexing Gateway Industrial Park area and there is also plenty of industrial areas down the railroad tracks from one end of the city to the other. There is a former factory down there that is sitting vacant right now. There are plenty of opportunity from the City of McComb to benefit from industry coming to McComb. Mc Comb was built on industry, railroad industry.

Rob Gaudin: I don't believe it is necessarily about the size of the CDBG grant, like whether we get five jobs or 15 jobs or 25. It is more about who benefits.

Comment 19: Not quite true, because we have CDBG which are federal funds which has a lot more rules and regulations we do require a minimum of 20, but we have state funded grant run programs where we only require ten jobs.

Rob Gaudin: Directly from the knowledgeable person.

(Presentation)

PUBLIC COMMENTS

APPENDIX E: GLOSSARY

Accessibility All new construction of covered multifamily buildings must include certain features of accessible and adaptable design. Units covered are all those in buildings with four or more units and one or more elevators, and all ground floor units in buildings without elevators.

Action Plan The Action Plan includes the following: An application for federal funds under HUD's formula grant programs (CDBG, ESG, HOME); Identification of federal and other resources expected to be used to address the priority needs and specific objectives in the strategic plan; Activities to be undertaken including the following; Activities to address Homeless and other special needs (persons with mental, physical or developmental disabilities, battered and abused spouses, victims of domestic violence, etc.); Activities to address other Actions (affordable housing, lead-based paint hazards, poverty reduction, public housing improvements, etc); and lastly; A description of the areas targeted given the rationale for the priorities for allocating investment geographically.

Affordable Housing That housing within the community which is decent and safe, either newly constructed or rehabilitated, that is occupied by and affordable to households whose income is very low, low, or moderate. Such housing may be ownership or rental, single family or multi-family, short-term or permanent. Achieving affordable housing often requires financial assistance from various public and private sources and agencies.

Agency Any department, agency, commission, authority, administration, board, or other independent establishment in the executive branch of the government, including any corporation wholly or partly owned by the United States that is an independent instrumentality of the United States, not including the municipal government of the District of Columbia.

Brownsfield Economic Development Initiative (BEDI) Grant Program BEDI is designed to help cities redevelop abandoned, idled, or underutilized industrial and commercial properties and facilities where expansion or redevelopment is complicated by real or perceived environmental contamination e.g., brownfields. BEDI accomplishes this by providing funding to local governments to be used in conjunction with Section 108 loan guarantees to finance redevelopment of brownfields sites. BEDI-funded projects must meet one of the CDBG program's national objectives.

Certification A written assertion based on supporting evidence that must be kept available for inspection by HUD, by the Inspector General of HUD, and by the public. The assertion shall be deemed to be accurate unless HUD determines otherwise, after inspecting the evidence and providing due notice and opportunity for comment.

<u>**Community Development Block Grant Program (CDBG)**</u> A Community Development Block Grant is a federal grant to states, counties or cities. It is used for housing and community development including housing construction and rehabilitation, economic development, and public services which benefit low- and moderate- income people. Grant funds can also be used to fund activities which eliminate slums and blight or meet urgent needs. CDBG-R refers funds granted through the American Recovery and Reinvestment Act of 2009.

<u>**Community and Housing Development Organization (CHDO)**</u> A federally defined type of nonprofit housing provider that must receive a minimum of 15 percent of all Federal HOME Investment Partnership funds. The primary difference between CHDO and other nonprofits is the level of low-income residents' participation on the Board of Directors.

<u>**Comprehensive Grant Program (CGP)**</u> HUD grant program via an annual formula to large public housing authorities to modernize public housing units.

<u>**Consolidated Annual Performance and Evaluation Performance Report (CAPER)**</u> The CAPER allows HUD, local officials, and the public to evaluate the grantees' overall performance, including whether activities and strategies undertaken during the preceding year actually made an impact on the goals and needs identified in the Consolidated Plan.

<u>**Consolidated Plan**</u> The Consolidated Plan services four separate, but integrated functions. The Consolidated Plan is: a planning document for the jurisdiction which builds on a participatory process with County residents; an application for federal funds under HUD's formula grant programs which are: CDBG, HOME, ESG, HOPWA; a three-year strategy to be followed in carrying out HUD programs; and lastly, an action plan describing individuals activities to be implemented.

<u>**Cost Burden**</u> The extent to which gross housing costs, including utility costs, exceeds 30 percent of gross income, based on data available from the U.S. Census Bureau.

<u>**Economic Development Initiative (EDI) Grant Program**</u> EDI is designed to enable local governments to enhance both the security of loans guaranteed through HUD's Section 108 Loan Guarantee Program and the feasibility of the economic development and revitalization projects that Section 108 guarantees finance. EDI accomplishes this by providing grants to local governments to be used in conjunction with Section 108 loan guarantees. A locality may use the grant to provide additional security for the loan (for example, as a loss reserve), thereby reducing the exposure of its CDBG funds (which by law must be pledged as security for the loan guarantees). A locality may also use the EDI grant to pay for costs associated with the project, thereby enhancing the feasibility of the 108-assisted portion of the project. EDI-funded projects must meet one of the CDBG program's national objectives.

Elderly: The CDBG low- and moderate-income limited clientele national objective at 570.208(a)(2)(i)(A) includes the elderly as a presumptive group. However, the CDBG regulations do not define the term "elderly". Therefore, a grantee can use its own definition of elderly for non-housing activities. As such, the County defines elderly as 55 years of age or older. With regard to housing activities, the Consolidated Plan requires identification of housing needs for various groups, including the elderly, which is defined as 62 years of age or older at 24 CFR 91.5 and 24 CFR 5.100. Because of this, housing activities to be counted toward meeting a Consolidated Plan goal of housing for the elderly must use the definition in 24 CFR 5.100, 62 years or older.

Emergency Solutions Grant (ESG) Formerly the Emergency Shelter Grant Program, the ESG is a federally funded program designed to help, improve and maintain the quality of existing emergency shelters for the homeless. ESG helps emergency shelters meet the costs of operating emergency shelters and of providing certain essential social services to homeless individuals so that these persons have access to a safe and sanitary shelter, and to the supportive services and other kinds of assistance they need to improve their situations. The program is also intended to prevent the increase of homelessness through the funding of preventive programs and activities.

Emergency Shelter Any facility with overnight sleeping accommodations, the primary purpose of which is to provide temporary shelter for the homeless in general or for specific populations of the homeless.

Entitlement An underlying formula governing the allocation of Block Grant funds to eligible recipients. Entitlement grants are provided to larger urban cities (i.e. population greater than 50,000) and larger urban counties (greater than 200,000).

Federal National Mortgage Association (Fannie Mae) A federally chartered, stockholder owned corporation which supports the secondary market for both conventional mortgages and mortgages insured by the FHA and guaranteed by VA.

Financing Functions necessary to provide the financial resources to fund government operations and federal assistance including the functions of taxation, fee and revenue generation, public debt, deposit funds, and intra governmental collections.

First-time Homebuyer An individual or family who has not owned a home during the three-year period preceding the assisted purchase of a home that must be occupied as the principal residence of the homebuyer. Any individual who is a displaced homemaker or a single parent may not be excluded from consideration as a first-time homebuyer on the basis that the individual, while a homemaker or married, owned a home with his or her spouse or resided in a home owned by the spouse.

Fiscal Year Any yearly accounting period, regardless of its relationship to a calendar year.

Full Time Equivalent (FTE) One FTE is 2,080 hours of paid employment. The number of FTEs is derived by summing the total number of hours (for which included categories of employees) are paid by the appropriate categories of employees and dividing by 2,080 hours (one work-year). Appropriate categories include, but are not limited to, overtime hours, hours for full-time permanent employees, temporary employees, and intermittent employees who may not have been paid for an entire reporting period.

Grant A federal grant may be defined as a form of assistance authorized by statute in which a federal agency (grantor) transfers something of value to a party (the grantee) usually, but not always, outside the federal government, for a purpose, undertaking, or activity of the grantee which the government has chosen to assist, to be carried out without substantial involvement on the part of the federal government. The "thing of value" is usually money, but may, depending on the program legislation, also includes property or services. The grantee, again depending on the program legislation, may be a state or local government, a nonprofit organization, or a private individual or business entity.

HOME The Home Investment Partnership Program, which is authorized by Title II of the National Affordable Housing Act. This federally funded program is designed to expand the housing, for very low-income people. And, to make new construction, rehabilitation, substantial rehabilitation, and acquisition of such housing feasible, through partnerships among the federal government, states and units of general local government, private industry, and nonprofit organizations able to utilize effectively all available resources.

HOME Funds Funds made available under the HOME Program through allocations and reallocations, plus all repayments and interest or other return on the investment of these funds.

Homeless According to the HEARTH Act of 2009, the term "homeless", "homeless individual", and "homeless person" means:
(1) an individual or family who lacks a fixed, regular, and adequate nighttime residence;
(2) an individual or family with a primary nighttime residence that is a public or private place not designed for or ordinarily used as a regular sleeping accommodation for human beings, including a car, park, abandoned building, bus or train station, airport, or camping ground;
(3) an individual or family living in a supervised publicly or privately operated shelter designated to provide temporary living arrangements (including hotels and motels paid for by Federal, State, or local government programs for low-income individuals or by charitable organizations, congregate shelters, and transitional housing);
(4) an individual who resided in a shelter or place not meant for human habitation and who is exiting an institution where he or she temporarily resided;
(5) an individual or family who—

    (A) will imminently lose their housing, including housing they own, rent, or live in without paying rent, are sharing with others, and rooms in hotels or motels not paid

for by Federal, State, or local government programs for low-income individuals or by charitable organizations, as evidenced by—

(i) a court order resulting from an eviction action that notifies the individual or family that they must leave within 14 days;

(ii) the individual or family having a primary nighttime residence that is a room in a hotel or motel and where they lack the resources necessary to reside there for more than 14 days; or

(iii) credible evidence indicating that the owner or renter of the housing will not allow the individual or family to stay for more than 14 days, and any oral statement from an individual or family seeking homeless assistance that is found to be credible shall be considered credible evidence for purposes of this clause;

(B) has no subsequent residence identified; and

(C) lacks the resources or support networks needed to obtain other permanent housing; and

(6) unaccompanied youth and homeless families with children and youth defined as homeless under other Federal statutes who--

(A) have experienced a long term period without living independently in permanent housing,

(B) have experienced persistent instability as measured by frequent moves over such period, and

(C) can be expected to continue in such status for an extended period of time because of chronic disabilities, chronic physical health or mental health conditions, substance addiction, histories of domestic violence or childhood abuse, the presence of a child or youth with a disability, or multiple barriers to employment.

Homeless Family Family that includes at least one parent or guardian and one child under the age of 18, a homeless pregnant woman, or a homeless person in the process of securing legal custody of a person under the age of 18.

Homeless Subpopulation Include but are not limited to the following categories of homeless persons: severely mentally ill only, alcohol/drug addicted only, severely mentally ill and alcohol/drug addicted, fleeing domestic violence, youth and persons with HIV/AIDS.

HOPWA Housing Opportunities for People With AIDS is a federal program designed to provide States and localities with resources and incentives to devise long-term comprehensive strategies for meeting the housing needs of persons with acquired immunodeficiency syndrome (AIDS) or related diseases and their families. The program authorizes entitlement grants and competitively awarded grants for housing assistance and services.

Household Household means all the persons who occupy a housing unit. The occupants may be single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements.

HUD Created as part of President Lyndon B. Johnson's War on Poverty, the Department of Housing and Urban Development (HUD) was established as a Cabinet Department by the Department of Housing and Urban Development Act (42 U.S.C. 3532-3537), effective November 9, 1965. It consolidated a number of other older federal agencies. The Department of Housing and Urban Development is the Federal agency responsible for national policy and programs that: address America's housing needs; improve and develop the Nation's communities; and enforce fair housing laws. HUD's mission is helping create a decent home and suitable living environment for all Americans. It has given America's cities a strong national voice at the Cabinet level.

HUD Income Levels Income levels serve as eligibility criteria for households participating in federally funded programs.

Extremely Low-income Family whose income is between 0 and 30 percent of the median income for the area, as determined by HUD with adjustments for smaller and larger families, except that HUD may establish income ceilings higher or lower than 30 percent of the median for the area on the basis of HUD's findings that such variations are necessary because of prevailing levels of construction costs or fair market rents, or unusually high or low family incomes.

Low-income Low-income families whose income does not exceed 50 percent of the median income for the area, as determined by HUD with adjustments for smaller and larger families, except that HUD may establish income ceilings higher or lower than 50 percent of the median for the area on the basis of HUD's findings that such variations are necessary because of prevailing levels of construction costs or fair market rents, or unusually high or low family incomes.

Middle Income Family whose is between 80 percent and 95 percent of the median area income for the area, as determined by HUD, with adjustments for smaller and larger families, except that HUD may establish income ceilings higher or lower than 95 percent of the median for the area on the basis of HUD's findings that such variations are necessary because of prevailing levels of construction costs or fair market rents, or unusually high or low family incomes.

Moderate-income Family whose income does not exceed 80 percent of the median income for the area, as determined by HUD, with adjustments for smaller and larger families, except that HUD may establish income ceilings higher or lower than 80 percent of the median for the area on the basis of HUD's findings that such variations

are necessary because of prevailing levels of construction costs or fair market rents, or unusually high or low family incomes.

Jurisdiction A State or unit of general local government.

Large Family Family of five or more persons.

Lead-based paint hazards Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-contaminated pain that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as established by the appropriate Federal agency.

Letter of Credit Line of credit to a grant recipient established at a time of approval of application.

Liability Assets owed for items received, services received, assets acquired, construction performed (regardless of whether invoices have been received), an amount received but not yet earned, or other expenses incurred.

Neighborhood Stabilization Program (NSP) Created to aid communities affected by foreclosure and abandonment through purchase and redevelopment. NSP1 refers to grants to state and local governments given on a formula basis and authorized under Division B, Title III of the Housing and Economic Recovery Act of 2008. NSP2 refers to funds allocated to states, local governments, nonprofits and consortiums on a competitive basis through funds authorized from the American Recovery and Reinvestment Act of 2009.

Overcrowded For purposes of describing relative housing needs, a housing unit containing more than one person per room, as defined by U.S. Census Bureau, for which the Census Bureau makes data available.

Person with a Disability A person who is determined to:

1) Have a physical, mental or emotional impairment that:
    - i) Is expected to be of long-continued and indefinite duration;
    - ii) Substantially impedes his or her ability to live independently; and
    - iii) Is of such a nature that the ability could be improved by more suitable housing conditions;

    Or
2) Have a developmental disability, as defined in section 102(7) of the Developmental Disabilities Assistance and Bill of Rights Act (42 U.S.C. 6001-6007); or
3) Be the surviving member or members of any family that had been living in an assisted unit with the deceased member of the family who had a disability at the time of his or her death.

Private Non-profit Organization A secular or religious organization described in section 501 (c) of the Internal Revenue Code of 1988 which: (a) is exempt from taxation under subtitle A of the Code; (b) has an accounting system and a voluntary board; and (c) practices nondiscrimination in the provision of assistance.

Program An organized set of activities directed toward a common purpose or goal that an agency undertakes or proposes to carry out its responsibilities.

Program Income Program income is the gross income received by the recipient and its subrecipients* directly generated from the use of CDBG funds. For those program income-generating activities that are only partially assisted with CDBG funds, such income is prorated to reflect percentage of CDBG funds that were used. Reference 24 CFR 570.500(a).

Examples: (Note: This list in NOT exclusive and therefore other types of funds may also constitute CDBG program income.)

- proceeds from the disposition by sale or long-term lease (15 years or more) of real property purchased or improved with CDBG funds.
- proceeds from the disposition of equipment bought with CDBG funds.
- gross income from the use or rental of real property that has been constructed or improved with CDBG funds and that is owned (in whole or in part) by the recipient or subrecipient. Costs incidental to the generation of the income are deducted from the gross income.
- payments of principal and interest on loans made using CDBG funds.
- proceeds from the sale of loans made with CDBG funds.
- proceeds from the sale of obligations secured by loans made with CDBG funds.
- any interest earned on funds held in a revolving fund account.
- any interest earned on program income pending its disposition.
- funds collected through special assessments that are made against properties owned and occupied by non-low and moderate- income households where the assessments have been made to recover some or all of the CDBG portion of a public improvement.

Reference: 570.500(a)(1)

Program income does not include the following examples:

- interest earned on grant advances from the U.S. Treasury. Any interest earned on grant advances is required to be returned to the U.S. Treasury.
- proceeds from fund-raising activities carried out by subrecipients that are receiving CDBG assistance to implement eligible activities.
- funds collected through special assessments that have been made to recover the non-CDBG portion of a public improvement.
- proceeds from the disposition by the grantee of real property that has been acquired or improved with CDBG funds when the disposition occurs after grant closeout for entitlement grantees.

- proceeds from the disposition of real property that has been acquired or improved with CDBG funds where the disposition occurs within a five year period (or more if so determined by the grantee) after the expiration of the agreement between the grantee and subrecipient for that specific agreement where the CDBG funds were provided for the acquisition or improvement of the subject property.

Note: This list is not all-inclusive.

*****Subrecipient*** *means a public or private nonprofit agency, authority, or organization or an authorized for-profit entity receiving CDBG funds from the recipient or another subrecipient to undertake activities eligible for such assistance. The term excludes an entity receiving CDBG funds from the recipient unless the grantee explicitly designates it as a subrecipient. The term includes a public agency designated by a unit of general local government to receive a loan guarantee, but does not include contractors providing supplies, equipment, construction, or services subject to the procurement requirements as applicable.*

Project A planned undertaking of something to be accomplished, produced, or constructed, having a finite beginning and finite end. Examples are a construction project or a research and development project.

Rehabilitation Labor, materials, tools, and other costs of improving buildings, including repair directed toward an accumulation of deferred maintenance; replacement of principal fixtures and components of existing buildings; installation of security devices; and improvement through alterations or incidental additions to, or enhancement of, existing buildings, including improvements to increase the efficient use of energy in buildings, and structural changes necessary to make the structure accessible for persons with physical handicaps.

Rehabilitation also includes the conversion of a building to an emergency shelter for the homeless, where the cost of conversion and any rehabilitation costs do not exceed 75 percent of the value of the building before conversion. Rehabilitation must meet local government safety and sanitation standards.
For projects of 15 or more units where rehabilitation costs are 75 percent or more of the replacement cost of the building, that project must meet the accessibility requirement of Section 504 of the Rehabilitation Act of 1973; or where rehabilitation costs are less than 75 percent of the replacement cost of the building, that project must meet the requirements of 24 CFR 8.23b.

Rental Assistance Rental assistance payments provided as either project-based rental assistance or tenant-based rental assistance. Otherwise known as the Section 8 Rental Assistance Payments Program and variations thereof.

Renovation Rehabilitation that involves costs of 75 percent or less of the value of the building before rehabilitation.

Request for Proposals (RFP) A RFP is the instrument used to solicit proposals/offers for proposed contracts using the negotiated procurement method.

Section 108 Loan Guarantee Program The Section 108 Loan Guarantee Program involves a federal guarantee on local debt allowed under Section 108 of the Housing and Community Development Act of 1974, as amended. This section of the Act allows public entities to issue promissory notes through HUD to raise money for eligible large-scale community and economic development activities. HUD guarantees these notes, which are sold on the private market in return for a grantee's pledge of its future CDBG funds and other security for the purpose of debt repayment. Section 108 activities must satisfy CDBG eligibility and national objective criteria as well as Section 108 regulations and guidelines.

Senior A person who is at least 55 years of age. For senior housing activities, a senior is a person who is at least 62 years of age. (Seniors and "elderly" are terms that are often interchangeable.)

Shelter Plus Care A federally funded McKinney Act Program designed to provide affordable housing opportunities to individuals with mental and/or physical disabilities.

SRO (Single Room Occupancy) A unit for occupancy by one person, which need not but may contain food preparation or sanitary facilities, or both.

State Any State of the United States and the Commonwealth of Puerto Rico.

Subsidy Generally, a payment or benefit made where the benefit exceeds the cost to the beneficiary.

Substantial Rehabilitation Rehabilitation of residential property at an average cost for the project in excess of $25,000 per dwelling unit.

Supportive Housing Services provided to residents of supportive housing for the purpose of facilitating the independence of residents. Some examples are case management, medical or psychological counseling and supervision, childcare, transportation, and job training.

Supportive Housing Program (SHP) The Supportive Housing Program promotes the development of supportive housing and supportive services, including innovative approaches that assist homeless persons in the transition from homelessness and enable them to live as independently as possible. SHP funds may be used to provide transitional housing, permanent housing for persons with disabilities, innovative supportive housing, supportive services, or safe havens for the homeless.

Transitional Housing Is designed to provide housing and appropriate supportive services to persons, including (but not limited to) deinstitutionalized individuals with disabilities, homeless individuals with disabilities, and homeless families with children. Also, it is housing with a purpose of facilitating the movement of individuals and families to independent living within a time period that is set by the County or project owner before occupancy.

Appendix H: Mississippi Transportation Infrastructure Report

Mississippi's Transportation Infrastructure: Paving Everyone's Road to Success

Jeremy Robinson[1], Monica Ramsey[2], Carl V. Pittman[3], Rachel Booth[4], Isaac L. Howard[5]

Executive Summary

The ability to move goods, services, and people throughout Mississippi is integral to the overall survival of the state. Mississippi (MS) has an extensive system of highways, bridges, rails, airports, and ports that are a significant financial asset. This paper investigates the value of MS transportation infrastructure, deterioration trends, economic implications from existing funding levels, and survey results of hundreds in the transportation industry to assess factors including the satisfaction of the MS transportation infrastructure workforce. The survey revealed that 93% of surveyed employees were either satisfied or very satisfied with their job. The cumulative efforts of this paper highlight the challenges and opportunities of adequately valuing transportation infrastructure in a way that paves Mississippi's way to short and long term economic prosperity.

White Paper Number CMRC WP 19-1, May 2019

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Introduction

Transportation infrastructure plays an integral role in the overall well-being of all MS residents. When valued appropriately it is an economic development engine fueling rewarding careers in numerous professions. Mississippi has developed a strong, diverse intermodal infrastructure system defined by an extensive network of highways, bridges, rails, water ports, and commercial airports which facilitates movement of people, goods, and services. Some of these assets were developed from the "1987 Highway Program"; a $1.6 billion long-range bill calling for the construction of over 1,000 miles of four-lane highways.

Fast-forward 30 years and MS is at a crossroads with a large portion of roadway infrastructure rapidly deteriorating. These critical assets are at an increasing risk of complete failure while construction costs have increased, and funding levels have remained stagnant. Aging infrastructure causes concern for reliability, safety, and security for all Mississippians. Damaged roads cost MS drivers time and vehicle wear (e.g. bent alignments, flat tires) and ultimately could lead to accidents from poor infrastructure conditions. Closed roads or bridges could also delay emergency response activities. The inability to maintain infrastructure affects labor forces, future economic development, and the ability to entice students to pursue careers in the transportation industry. Mississippians are faced with the challenge of protecting the massive aging infrastructure to meet the demands of future generations.

This paper aims to draw attention to the individual and interconnected importance of transportation infrastructure and the workforce that makes infrastructure possible. To achieve this objective, data concerning the condition of roads and bridges and the economic impact of delaying maintenance and preservation treatments are analyzed considering the state government perspective (Mississippi Department of Transportation, or MDOT), industry perspectives (roadway contractors, material suppliers, consultants), and the state chamber of commerce advocacy group (Mississippi Economic Council, or MEC). This paper also includes work by the Construction Materials Research Center (CMRC) to generate transportation infrastructure interest in elementary and high school students (K12). A survey was administered to a group of MS infrastructure workers to understand their perspective and to relate that perspective to K12 (the next possible generation of workers). The ultimate goal of this paper is to show how vital "Mississippi's Transportation Infrastructure" is to "Paving Everyone's Road to Success".

Overview of National and State Infrastructure

Since 1998, the American Society of Civil Engineers (ASCE) has published a national infrastructure report card (IRC) every four years for reference by decision makers and everyday American citizens (ASCE 2017) using a letter grade format to evaluate the condition of America's infrastructure. With each publication, the report card has grown in depth and sophistication. The two most recent reports (i.e. 2013 and 2017) evaluated 16 infrastructure components. Table 1 summarizes national infrastructure letter grades from 2013 and 2017 and the financial need (defined as the investment required to raise the infrastructure component in question to a B grade). As seen in Table 1, the nation was assigned an overall grade of D+ with roads being assigned a D and bridges a C+. The total needed investment has grown from $3.6 trillion in 2013 to $4.6 trillion in 2017.

Table 1. National Infrastructure Letter Grades from 2013 and 2017.

<table>
<tr><th rowspan="2">Infrastructure Component</th><th rowspan="2">2013 Grade</th><th rowspan="2">2017 Grade</th><th colspan="3">2016-2025 Funding (billions)</th></tr>
<tr><th>Expected</th><th>Needed</th><th>Gap</th></tr>
<tr><td>Bridges</td><td>C+</td><td>C+</td><td rowspan="3">$941</td><td rowspan="3">$2,042</td><td rowspan="3">$1,101</td></tr>
<tr><td>Roads</td><td>D</td><td>D</td></tr>
<tr><td>Transit</td><td>D</td><td>D-</td></tr>
<tr><td>Drinking Water</td><td>D</td><td>D</td><td rowspan="2">$45</td><td rowspan="2">$150</td><td rowspan="2">$105</td></tr>
<tr><td>Wastewater</td><td>D</td><td>D+</td></tr>
<tr><td>Energy</td><td>D+</td><td>D+</td><td>$757</td><td>$934</td><td>$177</td></tr>
<tr><td>Aviation</td><td>D</td><td>D</td><td>$115</td><td>$157</td><td>$42</td></tr>
<tr><td>Inland Waterways</td><td>D-</td><td>D</td><td rowspan="2">$22</td><td rowspan="2">$37</td><td rowspan="2">$15</td></tr>
<tr><td>Ports</td><td>C</td><td>C+</td></tr>
<tr><td>Dams</td><td>D</td><td>D</td><td>$5.6</td><td>$45</td><td>$39.4</td></tr>
<tr><td>Hazardous Waste</td><td>D</td><td>D+</td><td rowspan="2">$4</td><td rowspan="2">$7</td><td rowspan="2">$3</td></tr>
<tr><td>Solid Waste</td><td>B-</td><td>C+</td></tr>
<tr><td>Levees</td><td>D-</td><td>D</td><td>$10</td><td>$80</td><td>$70</td></tr>
<tr><td>Parks and Recreation</td><td>C-</td><td>D+</td><td>$12.1</td><td>$114.4</td><td>$102.3</td></tr>
<tr><td>Rail</td><td>C+</td><td>B</td><td>$124.7</td><td>$154.1</td><td>$29.4</td></tr>
<tr><td>Schools</td><td>D</td><td>D+</td><td>$490</td><td>$870</td><td>$380</td></tr>
<tr><td>Overall</td><td>D+</td><td>D+</td><td>$2,526</td><td>$4,590*</td><td>$2,064</td></tr>
</table>

*Estimated needed funding in 2013 was $3,600 billion

To address the national infrastructure funding gap, the Fixing America's Surface Transportation (FAST) act of 2015 was initiated, which was a $305 billion federal initiative with the possibility of up to $500 billion dollars being invested into infrastructure projects in the near future (Shuster 2017). Shuster (2017) quoted a former ASCE President who noted that "it requires leadership on the part of our elected officials to make that [infrastructure improvements] happen and to frankly not kick the can down the road for the next group of elected officials. Because the longer we wait to make these improvements on our infrastructure, the more costly it is going to be." Shuster (2017) also discussed one of ASCE's three initiatives known as the Grand Challenge which is to "significantly enhance the performance and value of infrastructure projects over their life cycles by 2025". Landers (2018) also discusses federal government priorities relative to infrastructure, especially those concerning life cycle cost analysis. As previously mentioned, in 1987 MS initiated the construction of over 1,000 miles of four-lane highway; however, no economic tools were put in place for maintenance of such a system. Landers (2018) considers the possibility of conducting 20-year life cycle analyses for significant projects assessing future costs associated with operation and maintenance. This approach could help prevent the maintenance funding gap currently faced by MS.

The 2017 ASCE-IRC gave MS infrastructure an overall rating of C-. Data extracted from the report card for MS and its surrounding states (ASCE 2017) are presented in Table 2 which shows that MS has similar infrastructure deterioration as a large part of the Southeast United States. While the National Report Card is a vital tool of reference for national lawmakers, certain aspects of the report card may not be of extreme importance or relevance within each state. As such, many state sections of ASCE produce a version of the report card for their specific state.

Table 2. Regional Infrastructure Report Card Data (ASCE 2013).

Category	Bridges		Roads				
STATE	Total	Structurally Deficient	Public Roads (miles)	Major Roads (miles)	Poor[1] Condition (%)	Total Cost to Motorists Billion ($)	Cost/ motorist/yr ($)
Mississippi	17,044	2,274	75,181	8,327	8	0.9	464
Alabama	16,078	1,405	101,811	10,401	6	1.2	321
Louisiana	13,050	1,827	61,326	6,559	19	1.3	464
Tennessee	20,058	1,157	95,523	10,401	6	1.0	225
Arkansas	12,748	880	100,123	8,044	14	1.1	497

[1]Note individual state's definition of "poor" condition may vary.

The last MS state report card was released in 2012 and included sections on dams, drinking water, roads and bridges (as a single section), and wastewater with corresponding letter grades of D, C-, C, and C, respectively (MS-ASCE 2012). The 2018 report card, which is planned for release in October, is expected to be expanded from the 2012 report card. Infrastructure components expected to be of interest for 2018 are aviation, bridges, dams, drinking water, energy, inland waterways, levees, ports, rails, roads, solid waste, and wastewater. While the focus of this article is roads and bridges in MS, there are other infrastructure components (e.g. rails systems and ports and waterways) within the state which face the same threat of deterioration exacerbated by stagnant funding. For example, the importance of rails, ports, and waterways to the MS economy is described below.

Rails. Rail transportation in MS is important to sustaining trade, manufacturing, and commerce. The railroad system is comprised of five Class I railroads (i.e. annual gross freight revenue of $250 million or more) and 23 local railroads for a total of 2,841 miles of track. This rail system transported an estimated 1.7 million tons of freight in 2006; approximately 20% of which was either inbound or outbound with outbound goods overvaluing inbound goods by $3.5 billion. Also, the rail system in MS provides jobs to approximately 2,200 Mississippians (MEC 2012). Based on the 2017 national ASCE-IRC, the rail system in MS improved from the 2013 grade of C+ to a B.

Ports and Waterways. Mississippi's 15 ports and 870 miles of inland waterways contribute greatly to the state economy. According to MEC (2012), 5 MS ports ranked in the top 150 in the country in 2000, considering tonnage. The Port of Gulfport and the Port of Pascagoula are two of the major deep-water Ports in the country. Considering containerized ports across the country, The Port of Gulfport is the 23rd busiest in the U.S. and the 3rd busiest in the Gulf of Mexico. The Port of Pascagoula is in the Top 20 U.S. ports in annual tonnage of foreign cargo, supporting 19,730 jobs, and generating $902 million in employee income and $50 million in state tax revenue, annually. Considering all ports in MS, they provide a $1.4 billion economic impact and account for 3 percent of the State's gross domestic product (GDP). MEC (2012) estimates that ports provide 34,000 jobs, which result in a total of $765 million in employee compensation. In 2008, MS ports transported approximately 52 million tons of freight, 19 million tons of which were outbound and 33 million tons of which were inbound (MEC 2012).

Mississippi Road Conditions

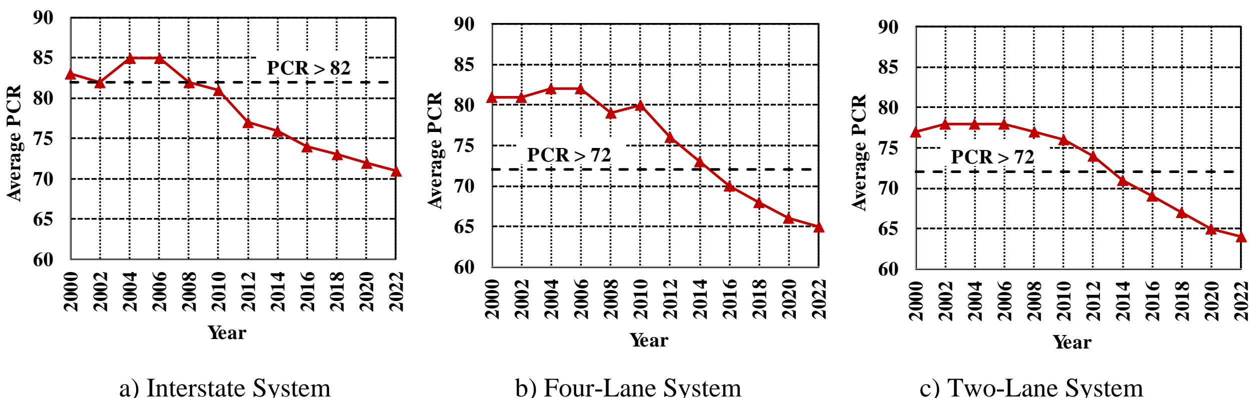
In 1987, the MS legislature enacted a funding bill calling for the construction of over 1,000 miles of four-lane highways. At the time, it was one of the most comprehensive highway funding bills in the country. Since 1988, the number of lane miles maintained by MDOT has increased 3,800 miles from 24,278 to 28,078 miles. In the mid-1990s, MDOT began maintaining some rural roads, creating a network of farm to market routes, vital to the agricultural industry. In order to maintain a database of the road system and monitor road condition, MDOT established a pavement management system (PMS) with the first condition survey conducted in 1991. A PMS consists of a standard, repeatable, and comprehensive method of measuring pavement distresses, such as rutting, potholes, and cracking, to calculate a numerical rating on a scale of 0 (worst) to 100 (best) referred to as a Pavement Condition Rating (PCR). Descriptions of the various conditions for interstate, four-lane, and two-lane highway systems are presented in Table 3.

Figure 1 shows pavements in varying conditions ranging from relatively new construction with little to no damage (Figure 1a), to a pavement with significant structural distress, rutting, and extensive cracking (Figure 1d). Figure 2 summarizes measured PCR data provided by MDOT from 2000 to 2014 and projected PCR data up to 2022. Figure 2a displays PCR trends for the MS interstate system, Figure 2b shows PCR changes for the four-lane state-maintained system, and Figure 2c displays PCR data for the two-lane state-maintained system.

Table 3. Pavement condition ranges for highway system.

Type	Description	Interstate PCR Range	4-lane & 2-lane PCR Range
Very Good	New or almost new, will not require improvement for some time	≤ 89	≤ 82
Good	Will not require improvement in near future	82 ≤ x < 89	72 ≤ x < 82
Fair	Will likely need improvement in the near future	73 ≤ x < 82	62 ≤ x < 72
Poor	Needs improvement in the near future, to preserve usability	63 ≤ x < 73	52 ≤ x < 62
Very Poor	Needs immediate improvement to restore serviceability	< 63	< 52

Figure 1. Pavement Conditions: (a) very good, (b) fair, (c) poor, and (d) very poor.



a) Interstate System b) Four-Lane System c) Two-Lane System

Figure 2. Decline in MDOT pavement network condition – Data from 2000 to 2014 is measured and data from 2014 to 2022 is forecasted

The average interstate PCR fell below the desired score of 82 in 2008 (Figure 2a) with a continuous decline thereafter. As of 2012, 37% of interstate lane miles were in good to very good condition (PCR > 82) while approximately 1,798 of 2,882 (62%) interstate lane miles needed some form of repair. The four-lane highway system average PCR fell below the desired value of 72 around 2014 (Figure 2b) and approximately 2,244 miles required repair. Similarly, around 2014 the average PCR for state-maintained two-lane road system fell below 72 (Figure 2c). Pavement condition data from 2012 indicated that 54% of the two-lane roads had a PCR>72; approximately 7,534 miles out of 16,420 miles needed repair even a few years ago. The data clearly show that Mississippi's highway network is deteriorating.

Maintaining a pavement system above a threshold condition depends on the timing of preventative maintenance and rehabilitation. Shahin (2006) determined that pavements which are rehabilitated while still in fair or better condition can cost 4 to 5 times less to repair than pavement which have deteriorated to very poor or worse. These numbers are not exact and would be expected to vary from source to source. For example, MDOT collected data on the cost of delaying roadway repairs. Figure 3 shows that delaying improvements could increase repair costs by 6 to 14 times as pavement condition worsens.

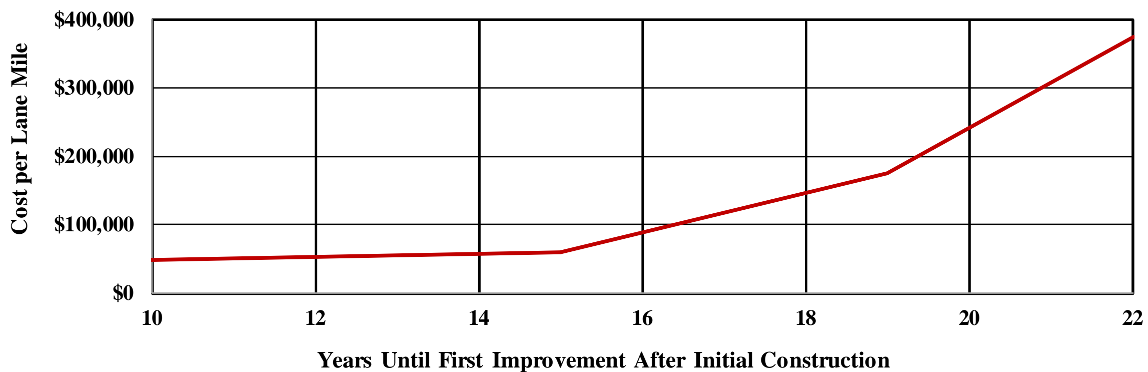


Figure 3. Cost of Delayed Maintenance Based on MDOT Data

When pavement rehabilitation is performed before extreme deterioration, relatively low-cost treatments, such as crack sealing and thin overlays are effective options, and are on the order of tens of thousands of dollars per lane mile. As maintenance activities are delayed, pavement

condition continues to decline requiring more extensive repairs, such as removal and replacement, at a much higher cost (on the order of hundreds of thousands of dollars per lane mile).

In addition to increased maintenance and preservation costs, continued deterioration costs MS drivers time and money as well as jeopardizing their safety. In 2017, The Road Improvement Program (TRIP) report identified four main urban areas which have significant congestion: 1) MS Gulf Coast consisting of the Gulfport-Biloxi-Pascagoula area, 2) Hattiesburg area, 3) Jackson area, and 4) Southaven-Desoto area. Road conditions and congestion in these areas were reported in TRIP (2017) to cause loss of time and money due to traffic delays, crashes, extra vehicle operating costs, and others (see Figure 4).

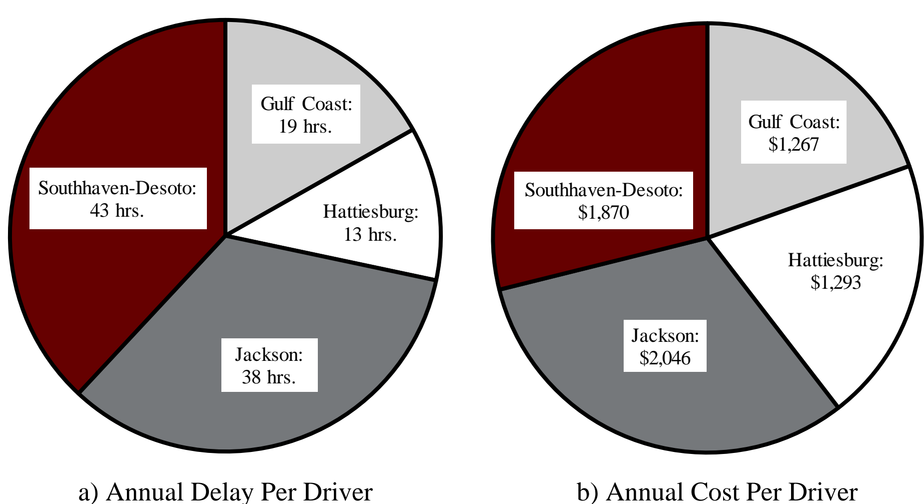


Figure 4. Time and Monetary Costs of Poor Road Condition and Congestion in MS

In total, MS drivers lose approximately $2.9 billion dollars annually due to roadway condition and congestion-related issues (TRIP 2017). Improving roadway conditions could save MS drivers up to $534 annually in vehicle operating costs (VOC) over 10 years (MEC 2015). Traffic crashes believed to result from poor roadway conditions cost MS drivers a total of $1 billion annually in lost productivity, insurance, and other costs (TRIP 2017). Concerning public safety, fatality rates on MS roads have been slightly increasing since 2012, with the majority of fatalities occurring on rural roadways (FHWA 2012-2016). Zeng et al. (2014) found that pavements in good condition can reduce fatality and injury-causing crashes by 26% when compared to deficient pavements.

Mississippi Bridge Conditions

In ASCE's 2017 IRC, 2,098 bridges (12.3%) were reported structurally deficient in Mississippi (ASCE 2017). A bridge is structurally deficient if there is significant deterioration of the bridge deck, supports or other major components. Structurally deficient bridges are often posted for lower weight or closed to traffic, restricting or redirecting large vehicles, including commercial trucks and emergency service vehicles. TRIP (2016) stated that one-fifth of locally and state-maintained bridges 20 feet or longer show significant deterioration. Additionally, seven percent of MS bridges are functionally obsolete, meaning they no longer meet current highway design standards, often

because of narrow lanes, inadequate clearances or poor alignment. Figure 5 has more bridge condition information.

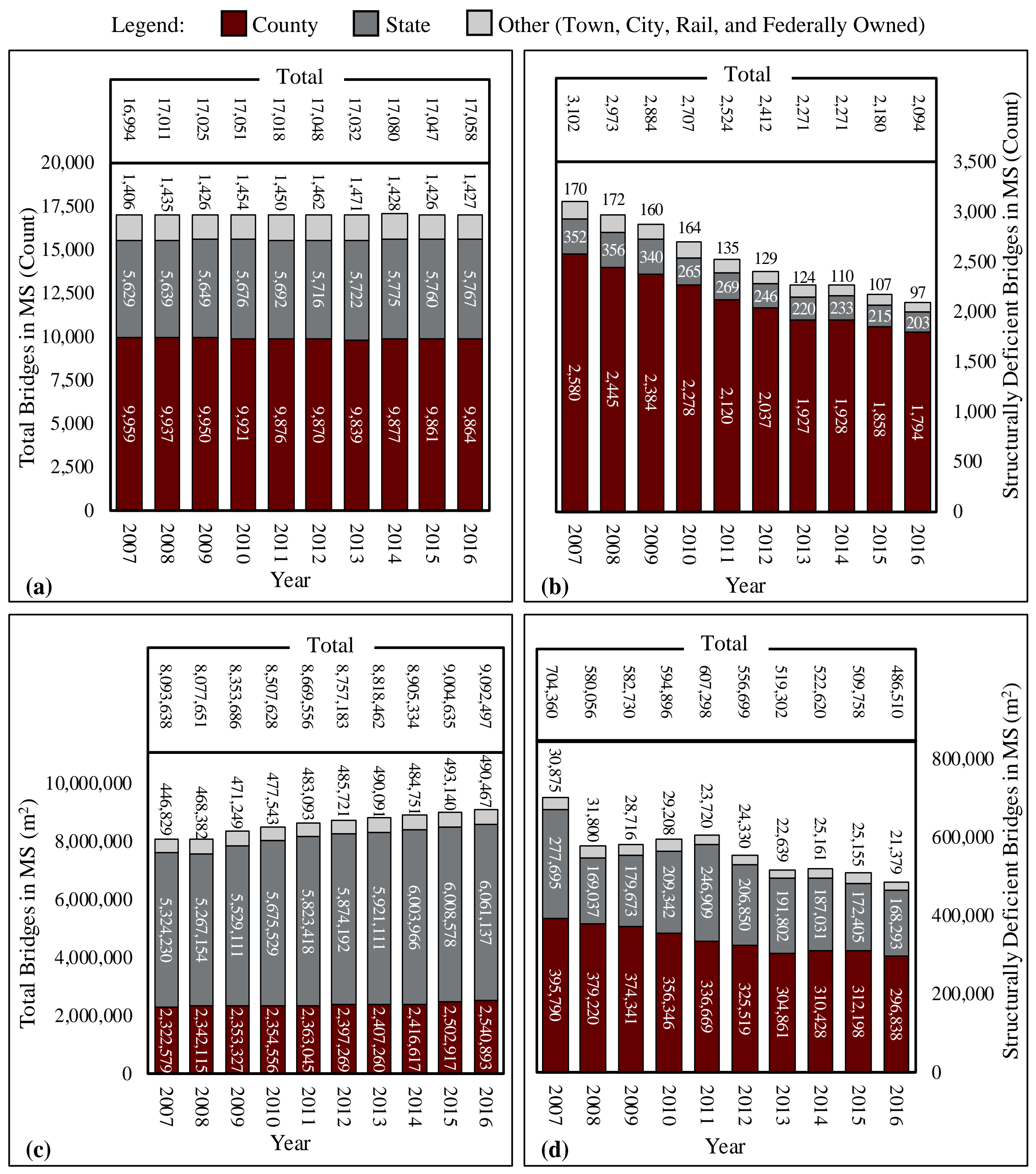


Figure 5. MS Bridge Data from NBI: (a) total number, (b) number structurally deficient, (c) total bridge area, and (d) area of structurally deficient bridges.

Each year, every state is required to submit their bridge inspection information to the Federal Highway Administration (FHWA) as part of the national bridge inventory (NBI). Data pertaining to MS bridges for the years 2007 to 2016 were obtained with assistance from MDOT and are displayed in Figure 5. Bridge count data are displayed as the number of total bridges in the state based on ownership (Figure 5a) and as the number of structurally deficient bridges in the state based on ownership (Figure 5b). Figures 5c and 5d display the same data based on square meters (instead of number) of bridges.

Figure 5a shows that total bridge inventory (based on number of bridges) has increased slightly from 16,994 in 2007 to 17,058 in 2016 (less than 0.5% increase). In the same time frame, Figure 5b shows the number of structurally deficient bridges consistently decreased annually from 3,102 to 2,094 (32.5%). Total area of bridges (Figure 5c) increased by nearly 1 million square meters (12%) from 2007 to 2016, which is a more noticeable change than seen in the number of bridges. While Figure 5d also shows an overall decrease in the area of structurally deficient bridges over the most recent decade, the trend is not as pronounced as when considering the number of bridges. Overall, there was a 31% decrease in square meters of structurally deficient bridges, similar to the 32.5% seen when considering the number of bridges.

Trends in Figure 5 show that MS bridge conditions appear to be moving in the right direction (i.e. increase in inventory and decrease in number/area of structurally deficient bridges); however, this should not be taken to mean that bridge conditions in MS are not a major issue. According to data in Figure 5, 12.3% of the total number of bridges in MS (5.4% based on bridge area) are structurally deficient. In the most recent showing of failing infrastructure in MS, Governor Phil Bryant declared a state of emergency in April 2018 and ordered roughly 100 county bridges closed (Pender 2018).

With these statistics in mind, progress towards bridge replacement and rehabilitation has been pushed by transportation leadership in Mississippi. One of MDOT's top priorities has been to replace Mississippi's deficient bridges. Bridge inspections are conducted at least every 2 years. Repairs are generally considered if the cost is 20% or less than replacement and if the repair extends the service life at least 7-10 years. Bridge replacements are prioritized based on factors including foundation type, bridge deck condition, environmental impact, freight or vehicle traffic, economic impact, and detour length while the bridge is closed.

Funding Mississippi Roads and Bridges

As of 2012, over 40% of the state-maintained roads were in need of some form of repair, and MDOT estimates that based on current trends in pavement management data, approximately 60% of the state-maintained system will require minor or major rehabilitation to raise the PCR to a good condition. Documents from an August 2017 MS Senate Highway and Transportation Committee meeting noted MDOT typically repairs around 1,600 miles per year while around 400 more miles deteriorate to a poor PCR. The MEC found that since the start of the 1987 four-lane highway program, inflation has increased 108%, construction costs have more than tripled, and there has only been a 1.8% gas tax revenue growth (MEC 2015). All factors considered, current highway funding in MS does not seem adequate based on the data presented. MDOT operates on a total annual budget of around $1 billion. Table 4 summarizes the sources of revenue for MDOT's fiscal year 2017 (FY2017) as found in their most recent annual report.

Table 4. MDOT FY2017 Revenues and Disbursements

Incoming Cashflow			Outgoing Cashflow		
Source	**Revenue**		**Source**	**Disbursement**	
Federal Funds	$514,426,182	(45.5%)	State-Maintained Roads and Bridges	$954,100,541	(82.7%)
Fuel Tax	$303,842,249	(26.9%)	Transfers for Local Systems	$122,839,612	(10.6%)
Interlocal Proceeds	$70,852,486	(6.3%)	Other Transfers	$41,600,115	(3.6%)
Truck and Bus Taxes/Fees	$68,630,971	(6.1%)	Business Support	$35,250,774	(3.1%)
Other Receipts	$129,903,116	(11.5%)			
Tag Fees	$14,244,786	(1.3%)			
Interest	$5,918,004	(0.5%)			
Contractor's Tax	$16,255,527	(1.4%)			
Commercial Vehicle Fees	$4,579,413	(0.4%)			
Lubricating Oil Tax	$856,423	(0.1%)			
Total Revenue	$1,129,509,157		**Total Disbursement**	$1,153,791,042	
Remaining from FY2016	$105,774,145		**Budget Reduction**	$2,953,121	
Total FY2017 Funds	**$1,235,283,302**		**Remaining at end of FY2017**	$78,539,139	

The vast majority of MDOT's outgoing cash flow observed in Table 4 are allocated to state and local roads and bridges. Only 3.1% of MDOT's annual budget is allocated to business support which includes areas such as employee compensation and benefits, and other operating costs. This compares favorably with the surrounding states of Alabama, Arkansas, Louisiana, and Tennessee where the lowest administrative and operating cost found was 4% (ASL 2016; AlDOT 2016; LaDOTD 2016; TDOT 2017). Comparatively, MDOT does well with its use of available funds to improve roadways within the state.

Federal funds and fuel tax revenue account for a majority of MDOT's annual incoming cash flow. MS gas tax was last raised in 1987 at the start of the four-lane highway program, to 18.79 cents/gallon. Figure 6 compares gas taxes in surrounding states as well as the national average (data obtained from 2040 Multiplan and Drenkard 2017). Numbers displayed in parenthesis after each states' name indicate the national rank of their gas tax (not including the District of Columbia) where a rank of 50 indicates the lowest gas tax (Alaska at 12.25 cents/gal.) and 1 indicates the highest gas tax in the nation (Pennsylvania at 58.20 cents/gallon). It should be noted that Alabama's gas tax is currently 22.91 cents/gal.

Figure 6 shows that MS has not only one of the lowest gas taxes in the southeast (only South Carolina was lower in Figure 6), but also in the nation with a rank of 46. In other words, there are only four other states in the U.S. with a lower gas tax than MS. Since 2012, 23 states have increased revenue for road and bridge repair and maintenance through various means. While several states have increased fuel taxes, increased vehicle fuel efficiency has resulted in less fuel tax revenue, forcing many states to turn to other means of funding, such as increasing license plate registration and other fees (MEC 2015).

The Mississippi Unified Long-Range Transportation Infrastructure Plan (MULTIPLAN) is a document compiled by MDOT in compliance with the federal Long-Range Transportation Plan (LRTP). The 2040 MULTIPLAN was released in January 2016 and is an updated version of the 2035 MULTIPLAN which was released in 2011. The 2040 MULTIPLAN discusses financial needs, constraints, and future plans relative to MS transportation infrastructure for three different funding scenarios: expected funding situation, funding needed to maintain infrastructure system as is, and funding needed to meet minimum performance goals.

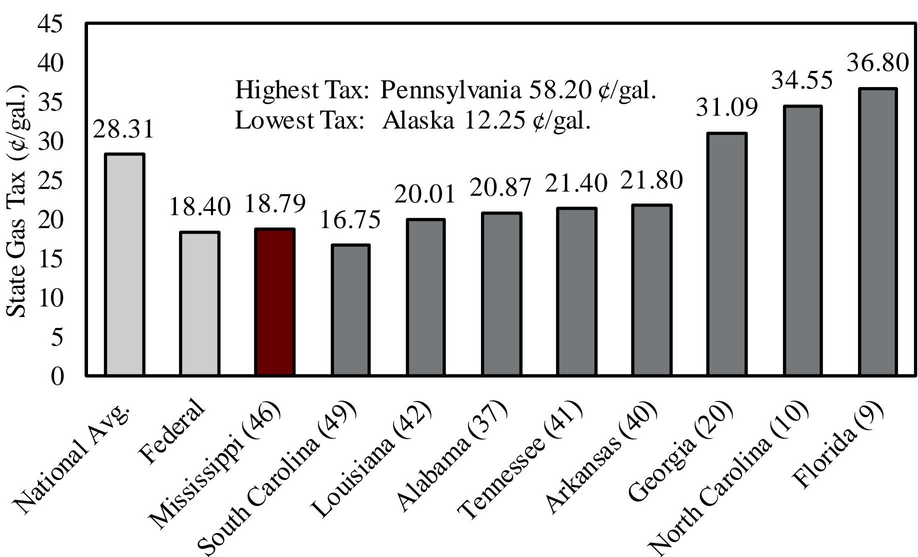


Figure 6. National and Southeast State Gas Taxes

Table 5 summarizes 2040 Multiplan data relative to pavement conditions, roadway capacity, public safety, and modernization within the state-maintained roadway system. Bold-underlined text represents the current funding gap based on either funding needed to maintain the system, or funding needed to meet the minimum goals in the far-right column.

Table 5. Future Funding Needs and Goals from the 2040 Multiplan

Factor	Funding Scenario	Annual Spending	Summary of Goals
Condition	Expected	$372.0	• 75% of interstate in good or better condition. • 75% of NHS* non-interstate in fair or better condition. • 75% of non-NHS 4-lane in fair or better condition. • 75% of non-NHS 2-lane in fair or better condition.
	Maintain System	$551.0	
	Gap	**$179.0**	
	Meet Min. Goals	$694.0	
	Gap	**$322.0**	
Capacity, Safety, & Modernization	Expected	$36.4	• Increase capacity to adequate level for entire state-owned system. • Towards no deaths on MS roadways: 100 fewer annual fatalities. • Reduce total daily driver delay by 12,500 hours.
	Maintain System	$97.1	
	Gap	**$60.7**	
	Meet Min. Goals	$203.0	
	Gap	**$166.6**	
Overall	Expected	$408.4	
	Maintain System	$648.1	
	Gap	**$239.7**	
	Meet Min. Goals	$897.0	
	Gap	**$488.6**	

*NHS= National Highway System

Data in Table 5 only considers state-maintained roadways. MEC (2015) estimated that an additional $75 million is needed annually by municipalities and counties to address 13,192 miles of road rated in "Very Poor Condition" which are expected to require significant rehabilitation. This estimate does not include approximately 16,531 miles which are rated as "Poor" and likely require minor rehabilitation.

Effects of Deteriorating Infrastructure

Local Construction Industry: APAC-MS is an asphalt paving contractor and aggregate producer headquartered in Richland, MS. APAC-MS operates thirteen asphalt production plants and four aggregate pits in locations ranging from north to central MS. Dwayne Boyd, president of APAC-MS stated that since the 1990's, the road building industry has lost approximately 4,000 jobs. The labor force was scaled back to meet a reduced workload caused by stagnant MDOT funding. As a result, companies purchased less new equipment, less raw materials, and less maintenance parts (tires, wear parts, etc.). Additionally, it was stated that less expansion of current facilities or construction of new facilities has occurred.

It was stated that as a result of scaling back the workforce, the ability to find qualified operators has become increasingly difficult. Experienced employees such as paver, roller, and motor grader operators, have since learned new skills and sought other jobs which may be outside the transportation industry. Considering administrative/management staff, such as estimators, project managers, and accountants, this has not been as much of an issue. Mr. Boyd made the following analogy regarding his opinion on roadway maintenance and repair: "Every person that owns a home probably has some wood on the exterior of the home. In order to maintain the wood, periodic washing and repainting is necessary. If a homeowner waits until the wood is rotten to repaint, the paint does no good. The homeowner is still left with rotten wood".

MMC Materials is a supplier of ready mixed concrete and related construction products from locations in the southeastern United States with a long history of serving customers in commercial, industrial, residential and transportation markets. Ben Hardy, Quality Assurance (QA) Director of the Central MS Area, reports that aging infrastructure has recently impacted their operations. He illustrated a consequence of infrastructure failure by telling of an instance when one of their concrete trucks fell through a wooden bridge that could not support its weight. He emphasized their number one priority of safety is jeopardized by poor infrastructure conditions. In addition, excessive repair and operation costs ultimately produce higher customer costs and create challenges for recruiting new businesses to the state.

It is obvious, based on comments received, that the ability to maintain or repair a deteriorating infrastructure affects all industries that play a supporting role in transportation infrastructure construction and that the transportation infrastructure industry supports proper funding of the transportation system.

***Economic Development*:** The MEC, comprised of a coalition of more than 11,000 members from 1,100 member firms, has been the voice of Mississippi business since 1949. MEC deals with broad issues related to businesses through advocacy, research, resources and leadership. One message MEC advocates is development of a plan to repair crumbling roads and bridges. The interactive website, *www.msroadsmatter.com*, looks at safety, economic development, and the impact on jobs. The MEC Blueprint Mississippi Transportation Infrastructure Task Force was formed in June, 2014 and is comprised of business leaders and community resource members from across MS. According to a recent report (TRIP 2016) an investment of an additional $375 million annually is needed to address the most vital road and bridge needs in Mississippi. Of that, $300 million should be dedicated to state-owned bridge and road needs and the remaining $75 million should be split between counties and municipalities. This $375 million annually, would address road and bridge conditions as well as provide a return to transportation users through reduced drive-time and vehicle maintenance. Further deterioration could also lead to loss of new economic development opportunities (MSMEC, ND).

Workforce and Education Initiatives

Up to this point in the paper, focus has been on the infrastructure elements themselves, rather than the workforce responsible for designing, building, and maintaining transportation infrastructure. This section discusses the workforce in terms of the value to transportation infrastructure (i.e. their value to Mississippi), and the value of gainful employment to the workforce (i.e. the value transportation infrastructure can bring to employees/citizens of Mississippi). This section highlights some workforce challenges approaching transportation infrastructure, example workforce development activities, and survey results where a representative sample of Mississippi's workforce provided answers to standard questions. This section is intended to show the interconnected importance of transportation infrastructure to the lives of all Mississippians, and how those that choose transportation infrastructure as a career are positively impactful.

Literature Review and Examples of Workforce Development: The current transportation industry workforce is aging, and workforce numbers are expected to decrease by half by 2022 (Amekudzi-Kennedy et al. 2015). The dwindling working transportation population must be replaced to maintain the status quo, and for transportation infrastructure to grow, the workforce needs to grow. Programs like the American Association of State Highway and Transportation Officials (AASHTO) TRAC™ and RIDES educational initiative are helping to encourage K12 science, technology, engineering, and mathematics (STEM) growth, but additional tools have potential to further prepare a transportation workforce. The transportation industry needs civil engineers, human resource workers, truck drivers, technical writers, heavy equipment operators, material suppliers, and many other diverse careers. To this end, the video *Interstate 269 and the People Who Made it Possible* was recently produced to show everyone the vast career opportunities in transportation infrastructure. This video is numbered CMRC V18-1, and is free for use (https://vimeo.com/255776766) or (https://www.youtube.com/watch?v=_PENqVZ82_o).

Construction industry workforce development initiatives are occurring worldwide. One example, a Japanese government developed business model, called i-Construction, was developed to boost industry image via a culture of salary, holiday, and hope (NAPA 2018). Another example is the Virginia Education Center for Asphalt Technology (VECAT) described by Iseman (2018). VECAT is a vocational program that was deployed just over one year ago to attract talented individuals from other fields (automotive and restaurant were used as examples). VECAT opportunities were reported to have starting salaries of around $40,000 that can approach $100,000 with complete training and proper certifications.

Mangum (2018) discusses the need to retain top talent at engineering or construction firms, especially with a significant volume of skilled labor leaving the industry. Employee retention is beyond this effort's scope, but Mangum (2018) highlights the need to bring talent into the industry through programs like VECAT. The authors believe that the construction industry needs more positive public exposure, and in particular to STEM and non-STEM minded young individuals so that after high school or college they will consider joining the transportation workforce.

Transportation Infrastructure Survey: As one step to understanding the current transportation infrastructure workforce, and to better understand prospects for potential future workforce currently in K12, an optional survey was administered in February and March of 2017 where 467 total responses were collected from adults (209 of these responses were from Mississippians, defined in this survey as the state where the majority of their work occurs, and are the only data reported herein). This survey was first handed out at the Mississippi Quality Asphalt Conference

in Starkville, MS and was later handed out at the 44th Annual Rocky Mountain Asphalt Conference & Equipment Show in Denver, CO. All other distribution originated from emails sent to several dozen colleagues. These emails asked colleagues to consider completing the survey themselves and to send it to others inside and outside their organizations. Survey answers were anonymous and assigned a PIN number to de-identify them from the sender. Tables 6 and 7 summarize survey responses pertinent to this paper. The survey was composed of four demographic questions (Gender, Job Type, Age Range, Home State/Country, and Experience), four questions related to job description and satisfaction, and an optional comments field. As seen in Table 6, 93% of respondents were satisfied or very satisfied with their job, but less than 3% of respondents believed the vast number of career paths in transportation infrastructure were clear and as available as they would have liked while in high school. This points to the need to better inform K12 students about transportation infrastructure.

Table 6. Mississippi Transportation Infrastructure Survey Results (209 Responses) 1 of 2

Category	Responses
Gender	Male [85%], Female [11%], Did Not Identify [4%]
Job Type	Consultant [8%], Supplier [16%], Contractor [28%], Agency [41%], Other [10%]
Age Range	<25 [2%], 25-45 [48%], 45-65 [46%], >65 [4%]
Experience	0-10 years [25%], 10-20 years [29%], 20-30 years [28%], >30 years [18%]
Job Satisfaction	Not Satisfied [<2%], Somewhat Satisfied [5%], Satisfied [45%], Very Satisfied [48%]
High School[1]	No-Not at All [28%], No-Not Really [56%], Yes-Somewhat [14%], Yes-Very Available [<3%]

1: *When you were in high school, was the vast number of career paths available in transportation infrastructure clear and as available as you would have liked?*

SPSS Regression was used to see if variables such as gender, age, experience, or exposure could predict job satisfaction. There were no exclusion factors involved and no reason to use a manipulation check or to check for ceiling or floor effects. No correlation was found between any of the variables and job satisfaction in Mississippi at a 5% significance level. However the extremely high satisfaction rate from Table 6 should be a key point when promoting transportation infrastructure to K12 students.

Another survey point that should be highlighted was the diverse number of reasons for entering the transportation workforce. The most common responses given by over half of the respondents were working outside, job stability, and seeing projects built. The next most common responses were location, salary, working with people, and work/life balance; all of these responses were given by at least one-third but less than one-half of respondents.

Table 7. Mississippi Transportation Infrastructure Survey Results (209 Responses) 2 of 2

What Describes Your Duties?		What Interested You Enough to Enter the Transportation Infrastructure Workforce?	
Category	**Percentage Who Marked**	**Category**	**Percentage Who Marked**
Engineering	55 %	Seeing Projects Built	57 %
Project Management	48 %	Job Stability	53 %
Administration	23 %	Working Outside	52 %
Other	22 %	Work/Life Balance	38 %
Safety	17 %	Salary	36 %
Financial/accounting	16 %	Working with People	34 %
General Construction	15 %	Location	33 %
Surveying	11 %	Personal Fulfillment	25 %
Marketing	11 %	Coordinating Projects	24 %
Environmental	10 %	Public Service	19 %
Drafting/CAD	8 %	Operating Heavy Equipment	11 %
Human Resources	6 %	Other	2 %
Equipment Operator	4 %		
Trades	3 %		

--Respondents were instructed to check all that applied in both categories.

Summary and Conclusions

Imagine life in Mississippi if food in stores, oil to and from refineries, travel to popular entertainment events, and so forth were crippled because society didn't value infrastructure by way of adequate funding or if those retiring from the transportation infrastructure workforce were not replaced. Transportation infrastructure plays a vital role in connecting people, places, and goods throughout our great state, but the data in this paper clearly shows that investments are needed if our state is to continue to benefit fully from its infrastructure. Now is a good time for all Mississippians to ask themselves if we are collectively treating our infrastructure as well as it has treated us. It is understood that deteriorating infrastructure is a national issue and is not limited to Mississippi, but the state has been an infrastructure leader before (e.g. 1987 Highway Program) – why not again?

References

Alabama Department of Transportation (AlDOT). 2016. *104th Annual Report Fiscal Year 2015*. Montgomery, AL.

American Society of Civil Engineers (ASCE). 2013. *ASCE's 2013 Infrastructure Report Card*. Washington D.C. Accessed May 2018. Retrieved from http://2013.infrastructurereportcard.org/

American Society of Civil Engineers (ASCE). 2017. *ASCE's 2017 Infrastructure Report Card*. Washington D.C. Accessed May 2018. Retrieved from https://www.infrastructurereportcard.org/

Arkansas State Legislature (ASL). 2016. *State of Arkansas Budget Information*. Little Rock, AR, 2016.

Amekudzi-Kennedy, Adjo, Margaret-Avis Akofio-Sowah, Stefanie Brodie, and Yanzhi Xu. 2016. Review and Business Case Analysis of Transportation-STEM Programs with State DOT Involvement: 18. *Transportation Research Board* 95th Annual Meeting Compendium of Papers.

Drenkard, Scott. 2017. State Gasoline Tax Rates in 2017. *Tax Foundation*. January 27. Accessed May 2018. Retrieved from https://taxfoundation.org/state-gasoline-tax-rates-2017/

Federal Highway Administration (FHWA). 2012. *Highway Statistics Series*. Washington D.C. Accessed April 2018. Retrieved from https://www.fhwa.dot.gov/policyinformation/statistics/2012/

Federal Highway Administration (FHWA). 2013. *Highway Statistics Series*. Washington D.C. Accessed April 2018. Retrieved from https://www.fhwa.dot.gov/policyinformation/statistics/2013/

Federal Highway Administration (FHWA). 2014. *Highway Statistics Series*. Washington D.C. Accessed April 2018. Retrieved from https://www.fhwa.dot.gov/policyinformation/statistics/2014/

Federal Highway Administration (FHWA). 2015. *Highway Statistics Series*. Washington D.C. Accessed April 2018. Retrieved from https://www.fhwa.dot.gov/policyinformation/statistics/2015/

Federal Highway Administration (FHWA). 2016. *Highway Statistics Series*. Washington D.C. Accessed April 2018. Retrieved from https://www.fhwa.dot.gov/policyinformation/statistics/2016/

Iseman, Carter. 2018. A Fast Track to Lucrative Asphalt Jobs. *Asphalt Pavement Magazine* 23(1): 20-22.

Landers, Jay. 2018. Bipartisan Group of House Members Releases Recommendations for Boosting Infrastructure. *Civil Engineering* 88(2): 14-15.

Louisiana Department of Transportation and Development (LaDOTD). 2016. *FY 16-17 Executive Budget Review Department of Transportation & Development Parish Transportation Funds*. Baton Rouge, LA.

Mangum, Michael D. 2018. Winning the War for Talent – Employers Can Take Two Key Actions to keep a Stellar Staff in Place and Create a Culture of Commitment. *Asphalt Pavement Magazine* 23(1): 54-56.

Mississippi Department of Transportation (MDOT). 2016. *2040 Mississippi Unified Long-Range Transportation Infrastructure Plan*. Jackson, MS. Accessed March 2018. Retrieved from http://mdot.ms.gov/portal/planning.aspx?open=Programs/MULTIPLAN/MULTIPLAN%202040

Mississippi Department of Transportation (MDOT). 2017. *Annual Report*. Jackson, MS.

Mississippi Economic Council (MEC). 2012. *Blueprint Mississippi 2011*. Jackson, MS. Accessed May 2018. Retrieved from http://www.msmec.com/blueprint-mississippi

Mississippi Economic Council (MEC). 2015. *Ramping Up Mississippi's Economy Through Transportation*. Jackson, MS: Mississippi Economic Council. Accessed January 2018. Retrieved from http://www.exceleratems.com/wp-content/uploads/Reports/MECTransportationReportFinal12-21-15.pdf

Mississippi Section of the American Society of Civil Engineers (MS-ASCE). 2012. *2012 Mississippi Infrastructure Report Card*. Jackson, MS. Accessed January 2018. Retrieved from http://2013.infrastructurereportcard.org/mississippi/mississippi-overview/

MSMEC. No Date-ND. Retrieved from http://www.msmec.com/home-page-featured-article/mec-blueprint-mississippi-report-calls-for-375-million-annually-to-address-mississippis-deteriorating-roads-and-bridges

National Asphalt Pavement Association (NAPA). 2018. Industry News – Global Efforts in Boosting Industry Recruitment and Image. *Asphalt Pavement Magazine* 23(1): 13.

Pender, Geoff. 2018. Governor declares emergency, orders county bridges closed. Clarion Ledger. April 10. Accessed June 2018. Retrieved from https://www.clarionledger.com/story/news/2018/04/10/governor-orders-bridges-closed/502490002/

Shahin, Mohamed Y. 2006. *Pavement Management for Airports, Roads, and Parking Lots*. 2nd Edition. New York, NY: Springer. ISBN 0-387-23464-0.

Shuster, Laurie A. 2017. Ready to Move Forward. *Civil Engineering* 87(3): 50-55.

Tennessee Department of Transportation (TDOT). 2017. *TDOT Budget FY 2017-2018*. Nashville, TN.

The Road Improvement Program (TRIP). 2016. *Mississippi Transportation Infrastructure by the Numbers: Meeting the State's Need for safe and Efficient Mobility.* Washington D.C. Accessed December 2017. Retrieved from http://www.msmec.com/images/Excelerate_MS/TRIP_Report_March_23.pdf

The Road Improvement Program (TRIP). 2017. *Mississippi Transportation Infrastructure by the Numbers: Meeting the State's Need for safe and Efficient Mobility.* Washington D.C. Accessed April 2018. Retrieved from http://www.tripnet.org/Mississippi_State_Info.php

Zeng, Huanghui, Michael Fontaine, and Brian Smith. 2014. Estimation of the safety effect of pavement condition on rural, two-lane highways. *Transportation Research Record: Journal of the Transportation Research Board* 2435: 45-52.

Appendix I: 2017 Feeding the Mind Gap Report

MAP THE MEAL GAP 2019

A Report on County and Congressional District Food Insecurity and County Food Cost in the United States in 2017

Made possible by the generous support of The Howard G. Buffett Foundation, Founding Sponsor of the Map the Meal Gap research series

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FOREWORD

It is hard to believe that in the United States, 40 million Americans may not know where they will find their next meal. *Map the Meal Gap* provides local estimates of food insecurity and food cost across the nation and brings to light the challenges faced by so many to simply put food on the table.

Map the Meal Gap's strength lies in its ability to initiate conversations, insights and actions across a broad spectrum of hunger-relief partners. Now in its ninth year, the study impacts many aspects of the hunger-relief landscape and is the foundation for evidence-based initiatives, strategies and communications.

Feeding America uses *Map the Meal Gap* to understand and approach the hunger crisis at the local level. It is an invaluable resource that informs our strategic planning and goal-setting as we seek to help households live free from hunger. Additionally, legislators, hunger-relief partners, academics and community organizations use its findings to develop policies, research and programs to address hunger and its related social and economic issues.

As we work to end hunger in America, our path is clear. Together, building on *Map the Meal Gap* as our foundation, we will we continue to develop, test and expand creative hunger-relief initiatives to address domestic hunger and bring more food to people in need.

Feeding America is deeply grateful to The Howard G. Buffett Foundation as Founding Sponsor of *Map the Meal Gap*. On behalf of our network, hunger-relief partners and, most importantly, the people we serve, thank you for your visionary leadership.

Claire Babineaux-Fontenot
Chief Executive Officer
Feeding America

ABOUT FEEDING AMERICA

Feeding America® is the largest hunger-relief organization in the Unites States. Through a network of 200 food banks and 60,000 food pantries and meal programs, we provide meals to more than 46 million people each year. Feeding America also supports programs that prevent food waste and improve food security among the people we serve; educates the public about the problem of hunger; and advocates for legislation that protects people from going hungry.

GLOSSARY

AGENCY
A charitable organization that provides food supplied by a food bank directly to people in need through various types of programs, like food pantries.

AMERICAN COMMUNITY SURVEY (ACS)
A U.S. Census Bureau survey based on a sample of 3 million addresses. ACS data are used to produce *Map the Meal Gap* estimates. In order to provide valid estimates for areas with small populations, the county-level ACS data used in *Map the Meal Gap* were averaged over a five-year period.

AVERAGE MEAL COST
The national average dollar amount food-secure people report spending per week on food, as estimated in the Current Population Survey (CPS), divided by 21 (assuming three meals eaten per day). This number is then adjusted by the cost-of-food index (see below).

CHARITABLE FOOD PROVIDERS
Charitable feeding programs like food pantries, meal programs, kitchens and shelters, whose services are provided to people in times of need.

CHILD FOOD INSECURITY
The household-level economic and social condition of limited or uncertain access to adequate food, as reported for households with children under age 18; it is assessed in the Current Population Survey (CPS) and represented in U.S. Department of Agriculture (USDA) food-security reports.

CHILD FOOD-INSECURITY RATE
The percentage of children living in households in the U.S. that experienced food insecurity at some point during the year. The child food-insecurity estimates in this study are derived from the same questions used by the USDA to identify food insecurity in households with children at the national level.

COST-OF-FOOD INDEX
A measure that uses food price data provided by Nielsen to estimate the relative cost of food in each county. The index consists of county multipliers that reflect the cost (after taxes) of purchasing the equivalent of a USDA Thrifty Food Plan (TFP) market basket relative to the national average. These multipliers are then used to generate local estimates of the national food budget shortfall and average meal cost.

CURRENT POPULATION SURVEY (CPS)
A nationally-representative survey conducted by the U.S. Census Bureau for the Bureau of Labor Statistics (BLS) providing employment, income, food insecurity and poverty statistics. Selected households are representative of civilian households at the state and national levels. The CPS does not include individuals living in group quarters, including nursing homes or assisted living facilities.

FOOD BANK

A charitable organization that solicits, receives, inventories and distributes donated food and grocery products pursuant to industry and appropriate regulatory standards. The products are distributed to charitable social-service agencies, which provide groceries and meals directly to people in need through various charitable feeding programs. Some food banks also distribute food directly to individuals in need.

FOOD BUDGET SHORTFALL

The amount of money per week food-insecure people report needing to meet their food needs, as assessed in the Current Population Survey. This amount is annualized for the purposes of this study.

FOOD INSECURITY

The household-level economic and social condition of limited or uncertain access to adequate food. It is assessed in the Current Population Survey and represented in USDA food-security reports.

FOOD-INSECURITY RATE

The percentage of the population that experienced food insecurity at some point during the year.

HIGH FOOD-INSECURITY COUNTIES

The top 10% of counties with the highest food-insecurity (or child food-insecurity) rates as compared with rates across all counties in the United States.

INCOME ELIGIBILITY THRESHOLD FOR FEDERAL NUTRITION PROGRAMS

A dollar amount tied to the federal poverty line that determines whether a household is income-eligible for federal nutrition programs like the Supplemental Nutrition Assistance Program (SNAP) or the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Income eligibility is one aspect of eligibility, which varies by state and include other tests based on assets and net income.

MEAL GAP

The equivalent of the food budget shortfall in meals calculated by dividing the food budget shortfall in a specified area by the average meal cost in that area.

METRO-MICRO AREAS

County-based geographic categories defined by the Office of Management and Budget (OMB). Metropolitan (metro) areas have a core urban area of 50,000 or more residents while micropolitan (micro) areas have a core urban area between 10,000 and 50,000. Metro and micro areas consist of one or more counties and include the counties containing both the core urban area, as well as any adjacent counties that have a high degree of social and economic integration with the urban core. Here we use counties categorized as part of nonmetro areas to broadly define “rural” counties although we analyze food insecurity in micro counties as well.

NONMETRO/RURAL COUNTIES

Counties that are categorized as part of nonmetro areas by the Office of Management and Budget (OMB) and used here to define "rural" counties. Nonmetro counties are located outside the boundaries of metropolitan (metro) areas and are widely used to study conditions in "rural" America. They can be subdivided into micropolitan (micro) and all remaining counties (neither metro nor micro), and further subdivided using USDA ERS Rural-Urban Continuum Codes (RUCCs).

PERCENT OF POVERTY LINE

A multiple of the federally established poverty guideline, which varies based on household size. These percentages are used to set income eligibility thresholds for federal nutrition programs, such as SNAP.

PERSISTENT-POVERTY COUNTY

A term used by the USDA Economic Research Service (ERS) to refer to counties where at least 20 percent of the population has been living in poverty over the last 30 years.

RURAL-URBAN CONTINUUM CODES

A classification scheme used by the USDA that subdivides metro counties into three categories by the population size of their metro area, and nonmetro counties into six categories by degree of urbanization and adjacency to a metro area. Here we use RUCCs to analyze food insecurity across and within metro and nonmetro counties.

SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM (SNAP)

Formerly known as the Food Stamp Program, SNAP is the largest of the federal nutrition programs and provides qualified recipients with resources, in the form of an electronic payment card, to buy groceries.

ABOUT MAP THE MEAL GAP

We believe that addressing the problem of hunger requires a thorough understanding of the problem. For the ninth consecutive year, Feeding America has undertaken the *Map the Meal Gap* analysis to continue learning about how the face of food insecurity can vary at the local level. By better understanding variations in local need, communities can develop more targeted strategies to better reach people struggling with hunger.

Although Feeding America continually seeks to meet the needs of food-insecure people, quantifying the need for food within a community can be challenging. In September 2018, the United States Department of Agriculture (USDA) Economic Research Service released its most recent food insecurity report, indicating that more than 40 million people in the United States live in food-insecure households, of whom more than 12 million are children (Coleman-Jensen et al., 2018a). While the magnitude of the problem is clear, national and even state estimates of food insecurity can mask the variation that exists at the local level.

Prior to the inaugural *Map the Meal Gap* release in March 2011, Feeding America used national and state-level USDA food-insecurity data to estimate the need. However, the 200 Feeding America member food banks that comprise the network are rooted in their local communities and need specific information at the ground level in order to be responsive to unique local conditions. Many food banks used poverty rates as an indicator of local food needs because it was one of few variables available at the county level. However, national data reveal that about 59% of people struggling with hunger earn incomes above the federal poverty level and 61% of people living in poor households are food secure (Coleman-Jensen et al., 2018b). Measuring need based on local poverty rates alone provides an incomplete illustration of a community's potential need for food assistance. Better community-level food-insecurity data are a valuable and unique resource for informing and engaging community members, leaders and partners in our mission to end hunger through a quantifiable and data-driven approach. In order to do this, *Map the Meal Gap* generates four types of community-level data: overall food-insecurity estimates, child food-insecurity estimates, average meal costs and food budget shortfalls.

RESEARCH GOALS

In developing *Map the Meal Gap*, Feeding America identified several research goals:

- Reflect major known determinants of the need for food.
- Reflect well-established and transparent research methods.
- Provide data that is consistently applied to all U.S. counties
- Avoid taxing the limited resources of food banks.
- Be updated on an annual basis.
- Reflects the potential effect of economic downturns.
- Analyze household income and eligibility for federal nutrition assistance.

METHODOLOGY OVERVIEW

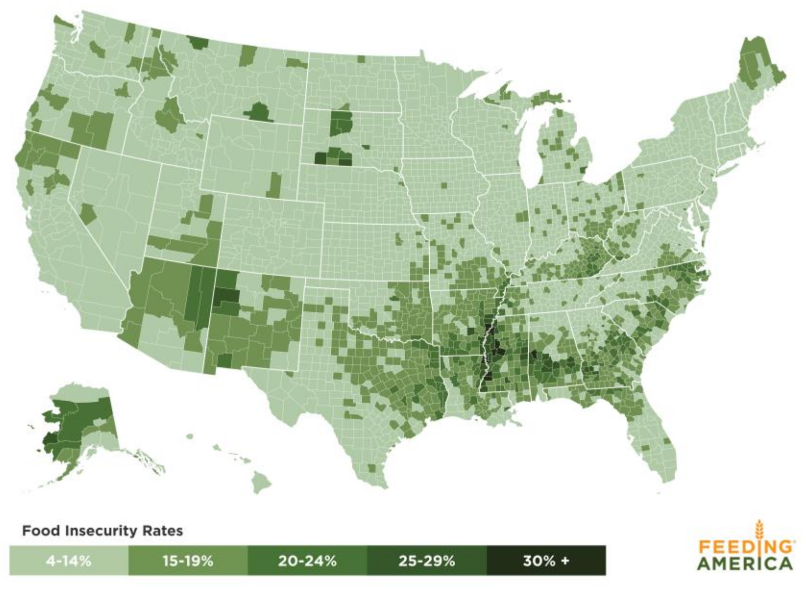
Following is an overview of the methodology for this study. A more detailed description can be found in the technical appendix.

FOOD-INSECURITY ESTIMATES

Before producing county-level estimates, we assess the state-level relationship between food insecurity and associated factors using Current Population Survey (CPS) data supplemented with data from the Bureau of Labor Statistics (BLS). The specific variables used are: unemployment, poverty, homeownership, and other demographic variables that are publicly available at both the county and state level. County-level estimates are derived from the state-level relationships that exist between these variables and food insecurity. Food-insecurity estimates at the county level may vary more from year to year than state or national estimates due to smaller geographies, particularly in counties with very small populations. For that reason, we take efforts to guard against unexpected fluctuations that can occur in these counties by using five-year averages from the American Community Survey (ACS). However, unemployment is based on a one-year average estimate for each county as reported by the BLS. Estimates are sorted by income categories associated with eligibility for federal nutrition programs, such as the Supplemental Nutrition Assistance Program (SNAP), using ACS data on population and income at the county level.

ESTIMATING FOOD INSECURITY AT THE COUNTY LEVEL

Using the annual USDA Food Security Survey, we model the relationship between food insecurity and other variables at the state level and, using information for these variables at the county level, we establish food-insecurity rates by county.



The food-insecurity model demonstrates the relationship between food insecurity and several indicators, including unemployment and poverty.

As expected, after controlling for other factors, higher unemployment and poverty rates are associated with higher rates of food insecurity. A one percentage-point increase in the unemployment rate leads to a 0.52 percentage-point increase in the overall food-insecurity rate, while a one percentage-point increase in poverty leads to a 0.25 percentage-point increase in food insecurity.

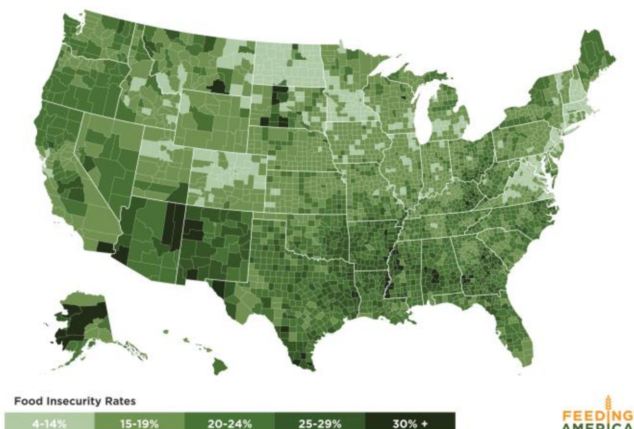
An interactive map that illustrates data from *Map the Meal Gap* can be found online at map.feedingamerica.org.

WHAT ABOUT UNDEREMPLOYMENT?

Underemployment occurs when a person is in the labor force, but is not obtaining sufficient hours or wages to make a living. This includes people who work less than full-time but would be working full-time if possible, and people who are in jobs not commensurate with their training or financial needs. Although unemployment continues to be associated with food insecurity, underemployment is another important condition that can lead to a strained household food budget. Currently, uniform BLS data on underemployment are not available at the county level; as a result, underemployment cannot be included in the *Map the Meal Gap* model estimating county-level food insecurity.

CHILD FOOD INSECURITY ESTIMATES

Children are particularly vulnerable to the economic challenges facing families today. Although food insecurity is harmful to any individual, it can be especially devastating to children, due to their critical stage of development and the potential for long-term consequences. Feeding America has replicated the food-insecurity model used for the general population to reflect the need among children.



Similar to the calculations used to derive food-insecurity estimates for the overall population, CPS data are used to assess the relationship between state-level child food insecurity and associated variables (e.g. unemployment rates, child poverty rates, homeownership rates for families with children, etc.) that are publicly available at the county, congressional district, and state levels through the CPS, BLS and ACS.

Child food-insecurity estimates are sorted by the income categories used to identify eligibility for federal child nutrition programs (above and below 185% of the poverty line) such as the National School Lunch Program (NSLP), the School Breakfast Program (SBP) and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) in order to estimate how many food-insecure children are eligible and ineligible for federal child nutrition programs.

WHAT ABOUT SENIOR FOOD INSECURITY?

Although local estimates of food insecurity among seniors are not available through *Map the Meal Gap,* we know that 5.5 million (7.7%) of seniors (age 60 and older) are food insecure (Ziliak & Gundersen, 2019). State-level rates range from 2.8% in Minnesota to 12.3% in Louisiana. The aging population has unique socioeconomic circumstances that may increase their need for food assistance and the need among community partners for local-level senior food-insecurity estimates. The variables used in the *Map the Meal Gap* model, however, are not as applicable to seniors. In addition, the sample size of seniors at the county level is often too small to allow for estimates as reliable as those for children and the general population.

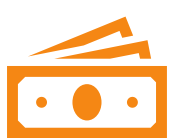
FOOD PRICE VARIATION

In order to compare food prices across the country, a relative price index was developed by Nielsen, on behalf of Feeding America.[1] Nielsen analyzed nationwide sales data from Universal Product Code (UPC)-coded food items and assigned each UPC-coded food item to one of the 26 food categories in the USDA's Thrifty Food Plan (TFP).[2] These categories, representing major food groups, were weighted within the TFP market basket based on pounds purchased per week by age and gender. The market basket total was then translated into a county-specific multiplier (normalized to a mean value of 1) so that food prices can be compared across geographies. This multiplier can be applied to any dollar amount to estimate the relative local price of the item in question.

FOOD BUDGET SHORTFALL AND NATIONAL AVERAGE MEAL COST

The CPS asks respondents how much additional money they would need to buy enough food for their household (this follows questions regarding weekly food expenditures but precedes food-insecurity questions). On average, in 2017, food-insecure individuals reported needing an additional $16.99 per person per week, a decrease of less than 2% from $17.26[3] in 2016. This amount is the average weekly food budget shortfall that food-insecure people experience.

To arrive at an annualized food budget shortfall experienced by all food-insecure people, this value is first multiplied by the number of food-insecure persons. Because USDA analyses of CPS data reveal that food-insecure households are not food insecure every day of the year, but typically experience food insecurity for about seven months per year, 7/12 is used as a multiplier to arrive at the total estimated annual food budget shortfall across all food-insecure individuals. (Coleman-Jensen et al., 2018a).



FOOD INSECURE PERSONS | $16.99 WEEKLY FOOD BUDGET SHORTFALL (CPS) | COST-OF-FOOD INDEX VALUE | 52 WEEKS PER YEAR | 7 of 12 MONTHS (USDA)

In recognition that food costs are not the same across the nation, the average

[1] In cases of counties with populations smaller than 20,000, Nielsen imputed a price based on data collected from all surrounding counties.
[2] The USDA TFP market basket is used to understand the relative differences in major food categories in a standardized way. It is not intended to evaluate the appropriate mix of food that people might purchase.
[3] In 2017 inflation-adjusted dollars. The nominal weekly food budget shortfall per food-insecure person in 2016 was $16.90, the equivalent of $17.26 in 2017 dollars.

food budget shortfall was also adjusted using the county multiplier from the local cost-of-food index, with 1 representing the national cost-of-food index.

To help equate the dollar amount of the food budget shortfall to meals, it is translated into an estimated meal shortfall, or "meal gap," using an average meal cost. The national cost-per-meal was derived from CPS data about how much the respondent's household spends on food in a week. We only include food costs reported by food-secure households to ensure that the result reflects the cost of an adequate diet. According to CPS data, we find that food-secure individuals spend an average of $63.42 per week, which, when divided by 21 (based on the assumption of three meals per day, seven days per week), amounts to an average meal cost of $3.02.

As with the food budget shortfall, the average meal cost of $3.02 is adjusted to reflect differences in food prices across counties by using the aforementioned cost-of-food index. This local cost of a meal can then be used to translate the local food budget shortfall into an estimated number of additional meals needed. Estimates of meal costs and meal gaps are not intended to be definitive measures; however, the concept of a "meal" provides communities with a context for the scope of need.

Although food prices are one of many cost pressures that people face in meeting their basic needs (housing, utilities and medical expenses are other critical components), the ability to reflect differences in food costs across the country provides insight into the scope of the problems facing people who are food insecure and struggling to make ends meet.

OVERALL FOOD INSECURITY: RESULTS AND DISCUSSION

Map the Meal Gap estimates the number of food-insecure individuals and children in every county and congressional district in the United States. The study also estimates the share of the food-insecure population who likely qualify for federal nutrition assistance programs, like SNAP.

TRENDS IN COUNTY FOOD INSECURITY

This section reviews findings from the ninth year that Feeding America has conducted *Map the Meal Gap*. To identify any notable shifts, food-insecurity estimates for 2017 (the focus of this year's study) are compared to those in each of the prior four years.

Nationally, the food-insecurity rate decreased significantly from 12.9% in 2016 to 12.5% in 2017 (Coleman-Jensen et al., 2018).[4] At the county level, the average unweighted food-insecurity rate in 2017 remained roughly the same (13.3% versus 13.7% in 2016), with rates ranging from a high of nearly 36% in Jefferson County, Mississippi to a low of 3% in Steele County, North Dakota.

TABLE 01: AVERAGE ECONOMIC INDICATORS BY COUNTY TYPE[5]

County Type	Food Insecurity		Unemployment		Poverty		Homeownership		Median Income	
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
High Food Insecurity Counties	22.4%	21.4%	7.3%	6.5%	27.5%	27.2%	65.6%	65.1%	$34,756	$35,213
All Counties	13.7%	13.3%	5.3%	4.6%	16.4%	16.0%	71.2%	71.3%	$48,995	$49,754
All Individuals	12.9%	12.5%	4.9%	4.4%	14.0%	13.4%	63.1%	63.9%	$58,844	$60,336

Just over one percent (N=35) of all 3,142 counties in the U.S. experienced a statistically significant change between 2016 and 2017, with most (91%) experiencing a decrease. When 2017 estimates are compared to those from prior years, however, there are more counties with a statistically significant difference in their food-insecurity rate. Rates are significantly different for 10% (N=329) of all counties since 2015, 25% (N=799) since 2014, and 42% (N=1,314) since 2013.

Unemployment and poverty – two of the key indicators of food insecurity – also decreased in 2017 (see Table 01). The unweighted average unemployment rate across all counties decreased from 5.3% in 2016 to 4.6% in

[4] The food-security module asks individuals about the prior 12 months, although it is plausible that individuals' responses may be most affected by their recent experience.

[5] County-level averages are unweighted. Individual-level estimates of food insecurity from the U.S. Department of Agriculture; unemployment from the U.S. Bureau of Labor Statistics; poverty and homeownership (American Community Survey) and median income (Fontenot et al., 2018). from the U.S. Census Bureau.

2017, while the average poverty rate also fell from 16.4% to 16.0%. Homeownership increased slightly (from 71.2% to 71.3%), and median income continued to rise even after accounting for inflation (from $48,995 to $49,754). [6] Despite these improvements, however, notable differences remain when comparing all counties to those with the highest rates of food insecurity across all economic indicators, suggesting persistent challenges facing communities with relatively high need.

The following sections explore current (2017) county-level findings in greater detail. Any statistically significant differences are noted.

COUNTIES WITH THE HIGHEST RATES OF FOOD INSECURITY

Of the 3,142 counties in the United States, we looked at the top 10% (N=317) whose food-insecurity rates are the highest in the nation.[7] Although the average food-insecurity rate across U.S. counties remains at roughly 13%, the average rate for these 317 "high food-insecurity rate" counties is 21%. In other words, within these highest risk counties, more than 1 in 5 residents struggle with hunger.

GEOGRAPHY

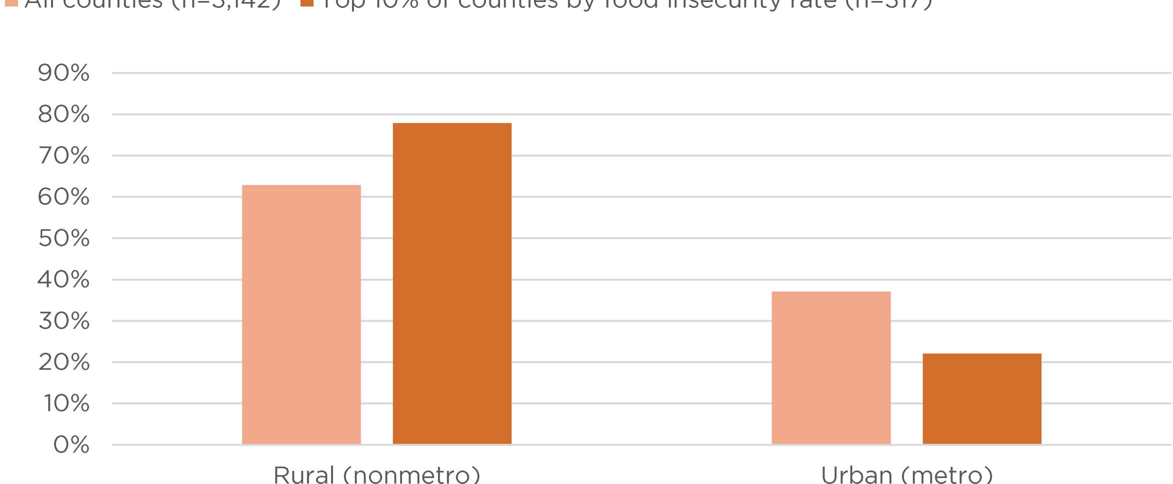
To better understand geographical variation across these counties, we analyzed them using the U.S. Office of Management and Budget (OMB) categories of metropolitan (metro) and micropolitan (micro) areas. We also considered less populous and more remote counties associated with neither metro nor micro areas. Most counties, whether metro or nonmetro, micro or other, contain a combination of urban and rural populations. For the purposes of this study, we define "rural" counties as those that fall within the broader category of nonmetro counties. In other words, rural (nonmetro) counties are located outside the boundaries of more populous metro areas and may be part of smaller micro areas or even less populated and more remote geographic areas.

TABLE 02: HIGH FOOD-INSECURITY RATE COUNTIES BY GEOGRAPHIC AREAS, 2017

County Type	High Food-Insecurity Rate Counties	All Counties
Metropolitan (urban)	22.1%	37.1%
Micropolitan (rural)	23.3%	20.4%
Neither (rural)	54.6%	42.5%
Total	**100%**	**100%**

[6] Median income data for 2016 have been adjusted for inflation to 2017 values.
[7] All 3,142 counties defined by the U.S. Census Bureau were included in the analysis of 2017 data.

Consistent with 2016 findings, high food-insecurity counties are more likely to be rural compared to the average U.S. county (see Table 02). While rural counties make up 63% of all counties, they represent 78% of counties with the highest estimated rates of food insecurity in the country.



Note: "Rural" counties are those outside of metropolitan (metro) areas as defined by the Office of Management and Budget (OMB); they include counties that are either micropolitan (micro) or neither metro nor micro.

High food-insecurity rate counties are located in eight of the nine U.S. Census Bureau geographic divisions (see Table 03).[8] The South, which encompasses the South Atlantic, East South Central, and West South Central divisions, contains 87% of the high food-insecurity rate counties. Although New England is not represented among the distribution of high food-insecurity rate counties, this geographic area includes some of the most populous counties in the U.S. and thus some of the largest numbers of food-insecure individuals.

[8] U.S. Census Bureau Geographic Divisions: South Atlantic (DE, DC, FL, GA, MD, NC, SC, VA and WV), East South Central (AL, KY, MS and TN), West South Central (AR, LA, OK and TX), Mountain (AZ, CO ID, MT, NV, NM, UT and WY), West North Central (IA, KS, MN, MO, NE, ND and SD), Pacific (AK, CA, HI, OR and WA), East North Central (IL, IN, MI, OH and WI), Middle Atlantic (NJ, NY and PA), and New England (CT, ME, MA, NH, RI and VT).

TABLE 03: HIGH FOOD INSECURITY COUNTIES BY U.S. CENSUS DIVISIONS, 2017		
U.S. Census Division (Region)	Counties (#)	Counties (%)
South Atlantic (South)	99	31%
East South Central (South)	91	29%
West South Central (South)	87	27%
West North Central (Midwest)	15	5%
Mountain (West)	14	4%
Pacific (West)	6	2%
East North Central (Midwest)	4	1%
Middle Atlantic (Northeast)	1	0%
New England (Northeast)	0	0%
Total	**317**	**100%**

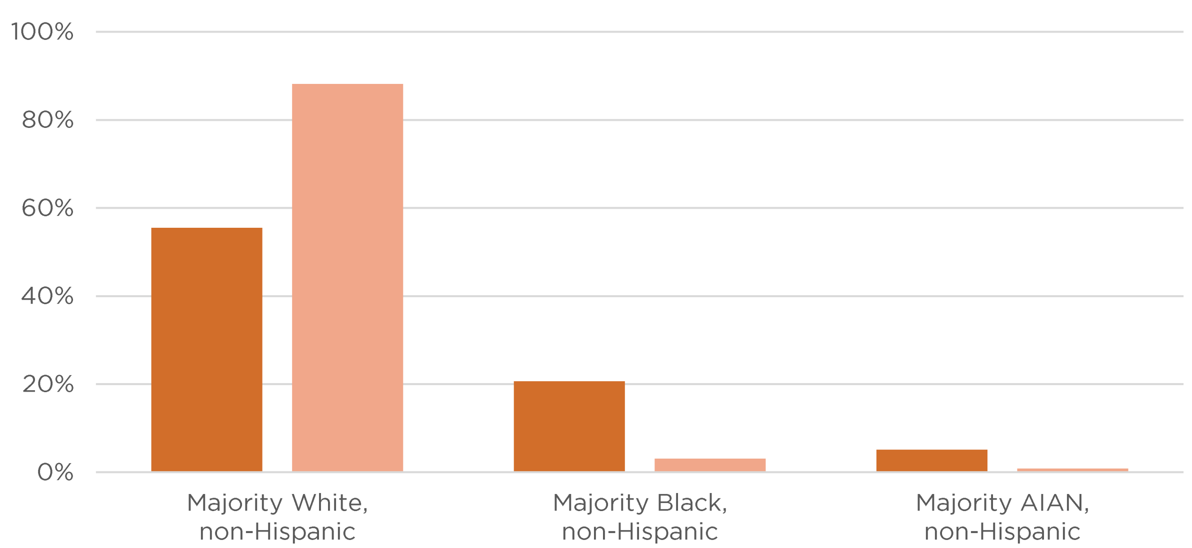
UNEMPLOYMENT, POVERTY, MEDIAN INCOME AND HOMEOWNERSHIP

By definition, high food-insecurity rate counties are more economically disadvantaged than the average U.S. county and the U.S. population as a whole, as seen in Table 01. The average annual unemployment rate among high food-insecurity counties was more than 7%, compared to 5% across all counties, with the county-equivalent Kusilvak Census Area, Alaska having the highest unemployment rate at 20%. The average poverty rate across these counties was also high, averaging 27% compared to 16% for all counties, and as high as 52% in Todd County, South Dakota. Not surprisingly, the average median household income in this group was lower than the national average: $35,067 versus $49,754 for all counties. The lowest median income in the group was $19,264 in McCreary County, Kentucky, less than half of the average of all counties. Homeownership rates were also lower in these counties at an average of 65% compared to 71% for all counties.

PERSISTENT-POVERTY COUNTIES

The USDA Economic Research Service (ERS) developed the term persistent poverty to track counties with consistently high percentages of people living below the poverty line. A county is considered a persistent-poverty county if at least 20% of its population has been living in poverty over the last 30 years (USDA ERS, 2017). Based on the most recent USDA data, there are 353 of these counties, 85% of which are rural. There is notable overlap between these counties and those that fall into the top 10% for food insecurity; nearly two-thirds (66%) of the “high food-insecurity rate” counties are also persistent-poverty counties. This confluence of long-standing poverty and heightened food insecurity underscores that low-income people living in these areas have been facing a number of interrelated problems that require complex, long-term solutions.

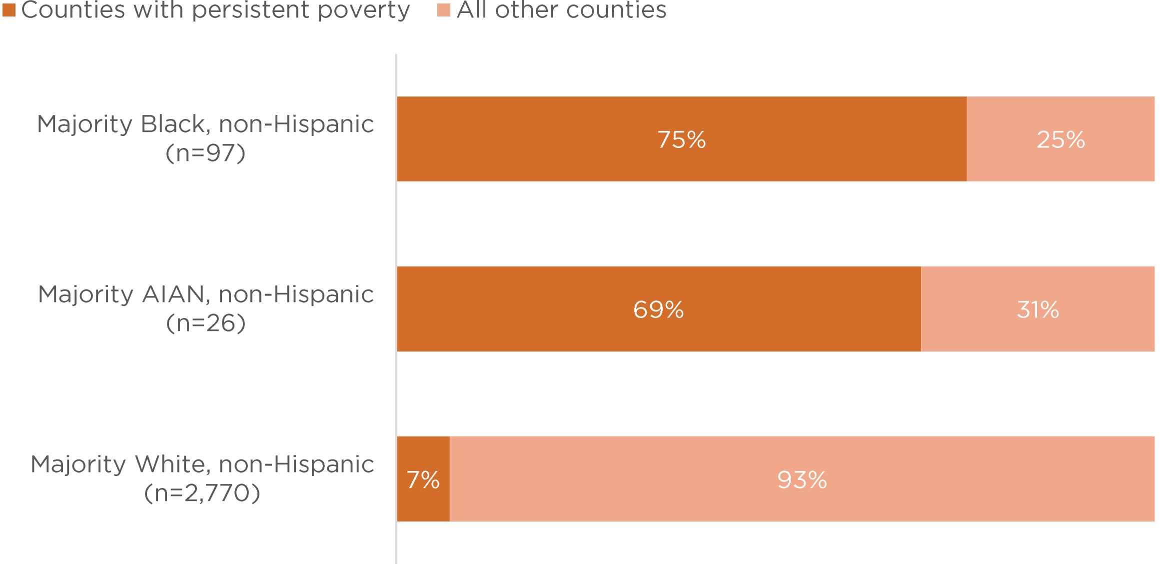
Some racial and ethnic minority groups in the U.S., such as African Americans and American Indians, are disproportionately at risk for food insecurity (Coleman-Jensen, Rabbitt, Gregory, & Singh, 20187), especially in these counties that have consistently struggled with poverty. In addition to having higher-than-average food-insecurity rates, persistent-poverty counties include a disproportionate share of counties with majority non-white populations, highlighting the deep and pervasive nature of the systemic challenges faced by many minority communities.



Source: Data from U.S. Census Bureau and USDA ERS, calculated by Feeding America

For example, while majority African-American counties form only 3% (N=97) of the 3,142 counties in the U.S., 92% (N=89) of them are high food-insecurity rate counties and 75% (N=73) are persistent-poverty counties.[9] With an average poverty rate of 29%, majority-African-American counties disproportionately experience poverty when compared to both high food-insecurity rate counties (27%) and the average county (16%). One such disadvantaged community is Jefferson County, Mississippi, where 86% of residents are African American. With a poverty rate of 47%, Jefferson County also has the highest food-insecurity rate in the U.S. at more than 36%.

[9] This analysis was completed for all non-Hispanic African Americans.



Similarly, more than two-thirds (69%) of majority-Native American counties are persistent-poverty counties, with an average poverty rate of 33%. Even though majority-Native American counties represent less than 1% of all counties in the U.S. (N=26), most of them (69%) also fall into the high food-insecurity rate category.[10] Although a relatively small percentage of the total U.S. population identifies as Native American, county-level analysis helps bring to light the obstacles faced by reservation communities (Gordon & Oddo, 2012; Gundersen, 2008).

For example, Apache County, Arizona, which includes parts of the Navajo Nation, Zuni and Fort Apache reservations, is designated as a persistent-poverty county with a poverty rate more than double the national average (36% versus 16%) and a food-insecurity rate of 24%.

[10] This analysis was completed for all non-Hispanic Native Americans.

FURTHER EXPLORATION OF COUNTIES

The following section analyzes county food insecurity by other dimensions, including low prevalence, large numbers of people, as well as rurality and region.

LOW FOOD-INSECURITY RATES

Over half (N=28) of the 50 counties with the lowest food-insecurity rates are found in North Dakota. This is consistent with the state's low unemployment rate and below-average poverty rate. In these 28 North Dakota counties, the estimated number of food-insecure individuals ranges from 40 to 1,910, and the food-insecurity rate ranges from 3% to 6%; nationally, the number of food-insecure individuals ranges from 10 to 1,135,710 and the food-insecurity rate ranges from to 3% to 36%.

Highlighting the critical difference between food-insecurity rates and number of food-insecure people, Suffolk County, New York is one of the 50 counties with the lowest food-insecurity rates, at just under 6%; however, there are still nearly 82,100 people who are food insecure in this county. It is important to note, as shown in Table 04, that in more populous areas, low food-insecurity rates do not necessarily translate into low numbers of food-insecure people.

HIGHEST NUMBERS OF FOOD-INSECURE INDIVIDUALS

While food-insecurity rates help illustrate the prevalence of need, populous counties with relatively low food-insecurity rates are home to some of the largest numbers of food-insecure people (see Table 04).

TABLE 04: COUNTIES WITH THE HIGHEST NUMBER OF FOOD-INSECURE INDIVIDUALS, 2017

State	County (metro area)	Food Insecurity (#)	Food Insecurity (%)
NY	New York (five boroughs, collectively)	**1,179,690**	13.0%
CA	Los Angeles	**1,135,710**	11.2%
TX	Harris (Houston)	**739,120**	16.3%
IL	Cook (Chicago)	**630,380**	12.0%
AZ	Maricopa (Phoenix)	**571,060**	13.7%
TX	Dallas	**438,830**	17.2%
CA	San Diego	**360,530**	11.0%
MI	Wayne (Detroit)	**344,440**	19.5%
TX	Tarrant County (Fort Worth)	**316,980**	16.0%
PA	Philadelphia County	**314,820**	20.1%

Among the 50 counties with the highest *number* of food-insecure people, the average food-insecurity rate is 14%, slightly exceeding the average across all counties. Although homeownership (55%) rates in these counties are lower than the average across all counties, their average poverty rate and average

unemployment rate are roughly equivalent to the national county average (16% for poverty and 4.4% versus 4.6% for unemployment).

While most of the 50 counties with the largest numbers of food-insecure people encompass the entirety of large cities, there are some exceptions. Oakland County, Michigan (135,440 food-insecure individuals) includes the suburbs northwest of Detroit, and DeKalb County, Georgia (131,820 food-insecure individuals) includes parts of Atlanta, but also suburbs to the east of the city, illustrating that the issue of hunger is not isolated to large metropolitan areas.

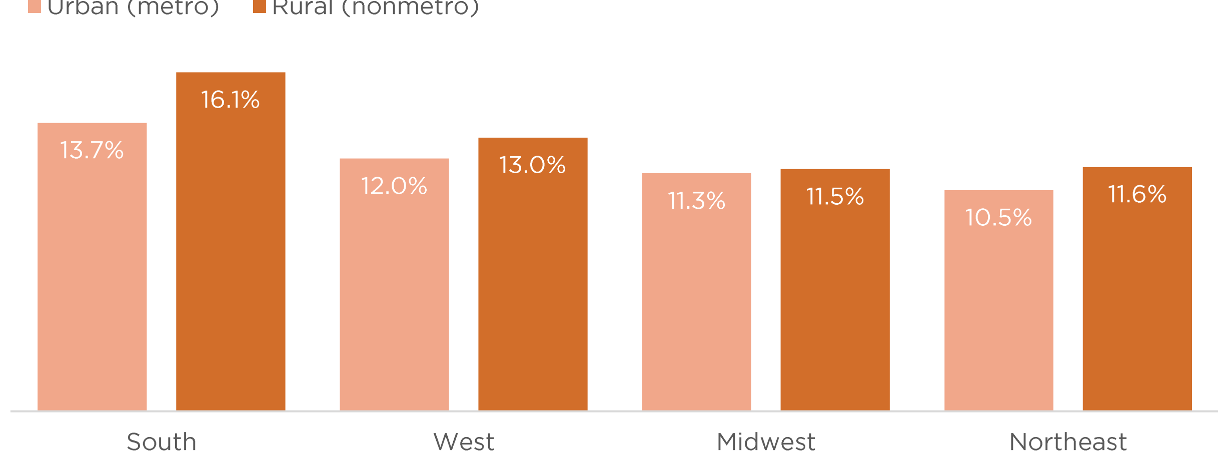
FOOD INSECURITY IN RURAL AMERICA

As discussed above, counties with the highest rates of food insecurity may be disproportionately rural and located in the South, but how does local food insecurity compare across all counties by region and rurality?

Across all rural (nonmetro) counties, the average food-insecurity rate (13.7%) is slightly higher than the average rate across all counties (13.3%) and higher still compared to urban (metro) counties (12.5%) (See Table 05). It is possible to further examine rural and urban county food insecurity by U.S. Census regions. For instance, rural counties in the South have some of the highest rates of food insecurity in the country while urban counties in the Northeast have some of the lowest. In fact, southern rural counties have the highest average food-insecurity rate in the country (16%) relative to regional averages from rural counties in the West (13%), followed by the Northeast (12%) and Midwest (12%).

TABLE 05: County Food-Insecurity Rates by Geographic Area, 2017

County	National	South	West	Midwest	Northeast
Urban (metro)	12.5%	13.7%	12.0%	11.3%	10.5%
Rural (nonmetro)	13.7%	16.1%	13.0%	11.5%	11.6%
All counties	13.3%	15.1%	12.7%	11.4%	11.0%



Source: Food insecurity data from *Map the Meal Gap 2019*.
Note: Averages are unweighted; rural counties are defined as those in nonmetropolitan areas per the Office of Management and Budget (OMB).

In the South region, some of the most food-insecure counties are those with small towns far from big cities. One such county is Leflore County, Mississippi, which has a food-insecurity rate of 30% and contains the town of Greenwood, population of 15,000. The nearest city to Greenwood is Jackson, Mississippi, nearly 100 miles away. Conversely, urban counties in the Northeast have some of the lowest rates of food insecurity in the country. Among urban counties across Census regions, the lowest average county food-insecurity rates are in the Northeast (11%), followed by the Midwest (11%), West (12%), and South (14%).

The variation in county food-insecurity rates becomes even more apparent using the USDA classification scheme known as Rural-Urban Continuum Codes (RUCCs). Using this classification, urban (metro) counties are subdivided into three categories based on the population size of their metro area and nonmetro counties are subdivided into six categories based on their degree of urbanization and adjacency to a metro area. Using these definitions, rural counties in the South with populations of 20,000 or more that are not adjacent to a major metro area have relatively high rates of food insecurity (17% on average). Conversely, urban counties in the Northeast with populations of 1 million or more tend to have much lower rates of food insecurity (10% on average).

Analyzing food insecurity by geography highlights that individuals' need for food may vary across rural and urban communities, as well as by national region. As practitioners and policymakers seek to address food insecurity across the United States, they should strive to include areas that are more difficult to reach, and where communities may have insufficient infrastructure and resources needed to help meet the needs of their food-insecure neighbors.

FOOD INSECURITY AND INCOME

Estimating food-insecurity rates by level of income can provide important insight into the potential strategies that can be used to address hunger.

Federal nutrition programs like SNAP use various income thresholds to determine a family or individual's eligibility for that program. These income thresholds are tied to multiples (e.g., 100%, 135%, 185%) of the federal poverty line. The poverty guidelines, which vary by household size, reflect a minimum amount of money that a family needs to purchase basic necessities.

WHAT IS THE FEDERAL POVERTY LINE?

The poverty thresholds were established in 1963 based on research that indicated the average family spent about one-third of its annual income on food. The official poverty level was set by multiplying food costs by three for a "bare bones" subsistence meal plan (Blank & Greenberg, 2008). Although the figures are updated annually to account for inflation, they have otherwise remained unchanged, despite the fact that modern family budgets are divided very differently than they were more than 50 years ago (Blank & Greenberg, 2008). Now, household budgets include myriad expenses that have increased relative to food prices or were virtually non-existent when the official poverty measure was created.

SNAP AND OTHER FEDERAL NUTRITION PROGRAMS

Federal food assistance programs such as the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and school meals, including the School Breakfast Program (SBP) and the National School Lunch Program (NSLP) determine eligibility thresholds by multiplying the official poverty line by 130% or 185% to provide a rough proxy for need beyond the scope of the official poverty level (see Table 06). SNAP eligibility thresholds are state-specific and range from 130% to 200% of poverty, while WIC and reduced-price school meals are typically only available to children in households with incomes below 185% of poverty.

For example, the poverty guideline for a family of four in the lower 48 states is a pre-tax income of $25,750 (HHS, 2019). To determine the federal income limit for SNAP eligibility, one would multiply $25,750 by 130% to arrive at $33,475. This means that, among other eligibility criteria, in many states, a family of four earning more than $33,500 is unlikely to qualify for SNAP.[11]

TABLE 06: Poverty Guidelines and SNAP Eligibility for the 48 Contiguous States and D.C.

Household Size	Poverty Guideline (2019)	SNAP Income Limit
1	$12,490	$16,237
2	$16,910	$21,983
3	$21,330	$27,729
4	$25,750	$33,475

Source: U.S. Department of Health and Human Services, U.S. Department of Agriculture
Note: Gross income limits for SNAP vary by state, ranging from 130-200% of poverty

Because of the common use of these federal nutrition program thresholds, the *Map the Meal Gap* analysis estimates how many food-insecure people's incomes fall within each income bracket. For more information about the methodology of calculation the income bands among the food-insecure population, please reference the technical brief.

Areas with a high percentage of food-insecure individuals eligible for SNAP (based on gross income) might benefit from increased awareness, outreach and application assistance for enrollment in SNAP. Looking across income eligibility estimates provides context for determining what federal and state programs are available to food-insecure people and what gaps are left to be addressed by charitable food assistance like food banks. Understanding the overlap between food insecurity and federal nutrition program eligibility provides local agencies with the level of information needed to tailor programs to meet local need.

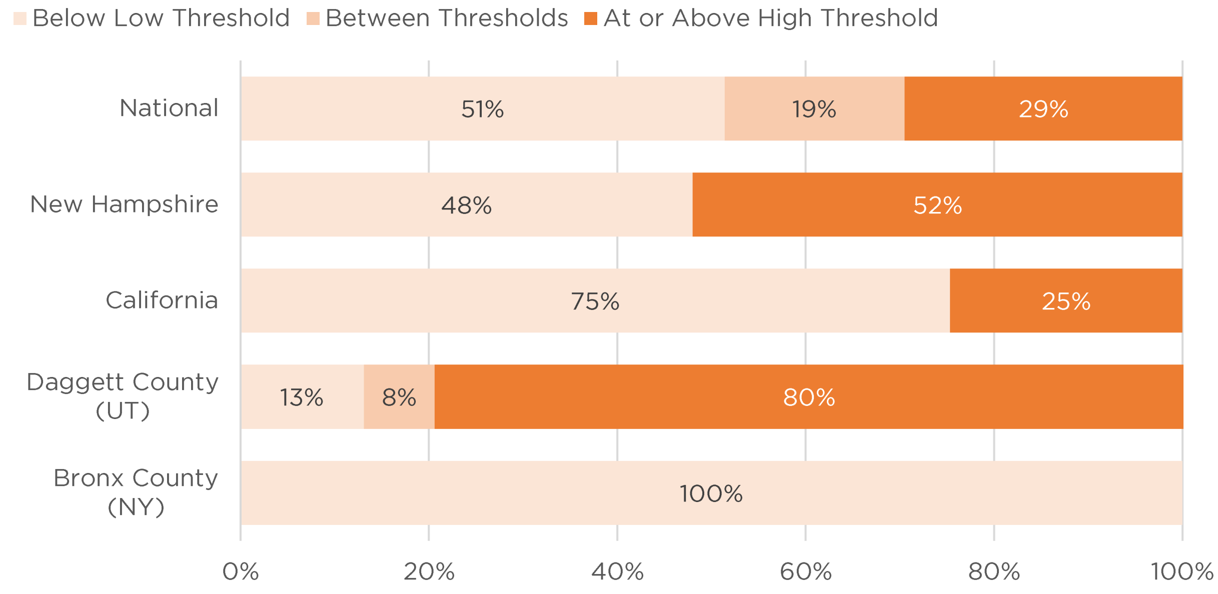
ELIGIBILITY FOR FEDERAL NUTRITION PROGRAMS

Federal nutrition programs are the first line of defense against hunger, but not everyone who is food insecure receives adequate support or even qualifies for federal assistance. Nearly three in 10 (29%) individuals in food-insecure homes with reported incomes earn too much to qualify for most federal nutrition assistance (Coleman-Jensen et al., 2018).

At the local level, we find that virtually every county (99%) is home to people who are food insecure and unlikely eligible for these programs. Given the variation in food insecurity and state income and asset limits for certain

[11] The SNAP gross income eligibility level varies across states, ranging from 130 to 200 percent of the federal poverty level. The SNAP net income eligibility level must fall at or below 100 percent of the federal poverty level.

programs, the share of the population at risk of hunger and likely ineligible reaches as high as 80% in Daggett County, Utah.



Source: National data from the *Statistical Supplement to Household Food Security in the United States in 2017* (USDA) and among food-insecure households whose incomes are known; state and county data from *Map the Meal Gap 2019* (Feeding America).
Notes: Gross income limits for federal nutrition programs vary by state; lower limits range from 130-200% of the federal poverty level (FPL) and upper limits range from 185-200% FPL. Totals may range from 99-101% due to rounding.

In every state except New Hampshire, and in most counties, a majority (50% or more) of people estimated to be food insecure are likely to qualify for some form of federal nutrition assistance. Many states, however, contain a mix of counties wherein some contain a majority food-insecure population that are eligible for SNAP while others have a majority food-insecure population that is likely ineligible for any form of federal food assistance. In fact, there are 132 counties in which a majority of food-insecure people are unlikely to qualify for any government food assistance programs.

Among counties with the highest rates of food insecurity (those in the top 10%), it is less common for people to be food insecure and ineligible for government food assistance. Whereas across all counties, on average 30% of people estimated to be food insecure earn more than the state gross income limit, among counties with the highest food-insecurity rates, on average 22% of food-insecure individuals are unlikely to qualify. What these findings suggest, however, is that even in high food-insecurity counties there are

individuals in need who may fall outside the federal safety net and have nowhere else to turn but to the charitable food assistance network.

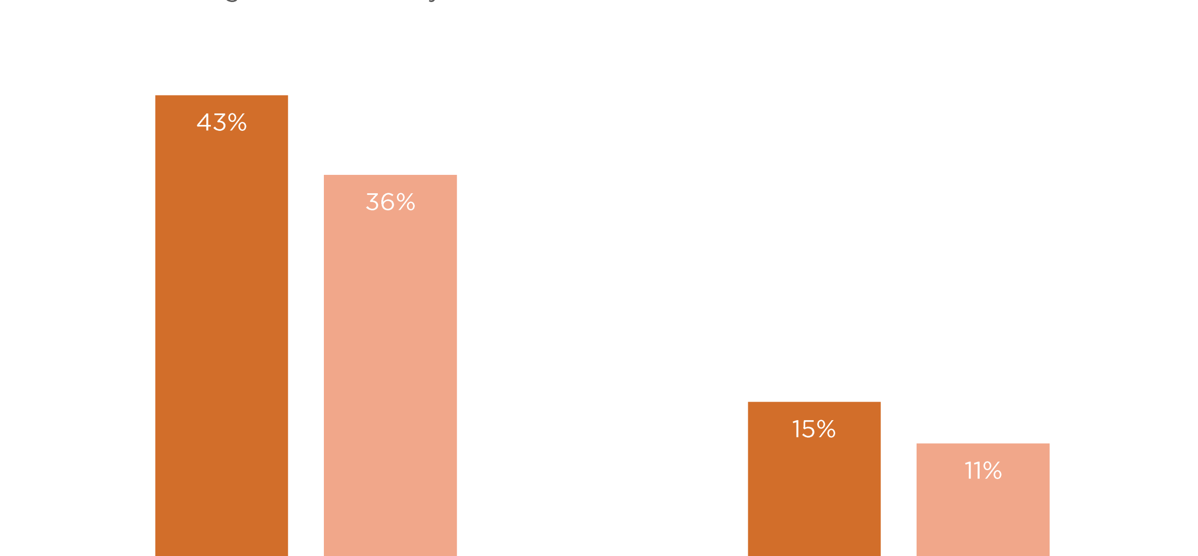
FOOD INSECURITY, HEALTH INSURANCE, AND HOUSING

Some households that are struggling to make ends meet may not have room in their budget for health insurance. Insurance helps pay for medical expenses, such as doctor visits and medications. For a household without health insurance, the cost of these expenses can take families from just above the poverty line to below it. However, a food-insecure household may not be able to afford health insurance, or the copays that come with it. Data from *Map the Meal Gap* indicate that counties with the highest rates of food insecurity also tend to have higher uninsured rates (15%) relative to all counties (11%).

Health and Housing in Counties with High Food Insecurity

Percentage of total county population by health insurance coverage, rental burden and food insecurity, 2017

■ Counties with high food insecurity ■ All counties



Source: Food insecurity data from Feeding America; other data from Centers for Disease Control and the American Community Survey.
Note: Counties with high food insecurity refer to the top 10% (n=317) of all 3,142 U.S. counties and county equivalents with the highest estimated rates of food insecurity.

Research also suggests a relationship between housing instability and poor health outcomes in a household. For example, bouts of homelessness can have a profoundly negative impact on a family's mental and emotional stress, and unstable housing increases the likelihood that a family will not be able to comply with a prescription or treatment for a chronic illness (Kushel, Gupta, Gee, & Haas, 2006; Hwang, 2001). High rental burden, which occurs when a household pays 35% or more of their income on rent, may also indicate a lack of resources for a household to afford adequate food and health insurance coverage, potentially increasing the risk for negative health outcomes. Compared to all counties, those with higher rates of food insecurity tend to have higher rates of rental burden (43% versus 36%).

FOOD INSECURITY IN CONGRESSIONAL DISTRICTS

In addition to county-level food-insecurity estimates, Feeding America generates estimates for congressional districts using the same methodology (refer to the Methodology Overview section above). As is the case with counties, no congressional district is free of food insecurity. Prevalence ranges from a low of 4% in Virginia's 10th congressional district to a high of 27% in Michigan 13th.

Congressional districts that fall within the top 10% for high food-insecurity rates (44 districts) had an average (unweighted) food-insecurity rate of 21% compared to 13% across all districts. Much like the high food-insecurity rate counties, high food-insecurity rate congressional districts are heavily concentrated in the South (see Table 07).

TABLE 07: HIGH FOOD-INSECURITY RATE DISTRICTS BY CENSUS DIVISION, 2017		
U.S. Census Division (Region)	Districts (#)	Districts (%)
South Atlantic (South)	11	25.0%
East North Central (Midwest)	10	22.7%
West South Central (South)	10	22.7%
East South Central (South)	6	13.6%
Middle Atlantic (Northeast)	6	13.6%
West North Central (Midwest)	1	2.3%
Total	**44**	**100.0%**

When compared to national averages, the districts with the highest food-insecurity rates also had higher-than-average unemployment (8% versus 5%) poverty (21% versus 13%), and lower-than-average median income ($44,797 versus $62,528). The wealthiest districts, representing the 10% with the highest median incomes, are also not immune to the issue of hunger. These affluent communities are home to an average of 66,000 people estimated to be food insecure. Cumulatively, the wealthiest congressional districts are home to 2.9 million food-insecure men, women and children.

FOOD PRICE VARIATION ACROSS THE UNITED STATES

The first phase of the *Map the Meal Gap* analysis focused on increasing understanding of the population in need by estimating county and congressional district level food-insecurity rates. In conjunction, Feeding America sought to understand how much additional food those who are struggling with food insecurity feel they need and how the relative cost of meeting that need may vary due to food prices at the local level.

To address this goal, a local-level estimation of the additional food budget that food-insecure individuals report needing was developed. In order to understand how regional and local variations in food costs may present challenges for the food-insecure population, Feeding America worked with Nielsen to create a county-level food cost index. Although this analysis does not imply causality between food costs and food insecurity, other research indicates that food costs can directly impact food insecurity (Nord et al., 2014). Food prices represent an important component of cost-of-living that affects households' ability to afford food.

As of 2017, the average meal cost (the average amount that a food secure individual reports spending) in the United States is $3.02, a slight decline (when adjusting for inflation) from $3.06 (in 2017 dollars) in 2016 ($3.00 in 2016 dollars).[12] Local meal costs range from 68% to more than twice the national average, resulting in meal cost variations ranging from as little as $2.07 in Willacy County, Texas to as much as $6.20 in Crook County, Oregon.[13] Counties with the highest estimated meal costs are disproportionately urban and less likely to be rural relative to all counties (see Table 08).

Across all counties where the average meal cost is higher than the national average, there are an estimated 24.1 million food-insecure people. Among counties in the continental United States that have the highest food-insecurity rates, meal costs reach as high as 124% of the national average ($3.74 per meal in Lafayette County, Mississippi). For a household struggling to afford housing, utilities, transportation and other basic necessities, the additional burden of high food prices can have a significant impact on a household's budget.

[12] Between 2016 & 2017, the inflation rate was 2.1%

[13] The calculations for variance of food price and the highest meal cost among high food-insecure counties exclude Alaska and Hawaii; the total number of food-insecure people in counties with food costs higher than the national average includes all 50 states.

TABLE 08: HIGH-COST COUNTIES BY GEOGRAPHIC AREA, 2017		
County Type	High-Cost Counties	All Counties
Metropolitan (urban)	58%	37%
Micropolitan (rural)	17%	20%
Neither (rural)	25%	42%
Total	100%	100%

COUNTIES WITH HIGHER FOOD PRICES

The top 10% of counties with the highest meal costs (N=322) have an average meal cost of $3.63, 20% higher than the national average of $3.02. There are 69 counties where the cost of a meal is at least 25% higher than the national average ($3.78 or higher). Among the 10% of counties with highest meal costs, more than half (58%) are located in urban (metro) areas (versus 37% of all counties), while 42% are in rural (nonmetro) areas (versus 63% of all counties).

As noted above, a larger share of counites with the highest meal costs are part of populous urban areas. Food prices tend to be higher in urban counties overall, but meal costs vary substantially by rural county and region. For example, some of the highest meal costs in the country are in rural counties that are adjacent to a major metro area. In one of these counties, Nevada County, California, the cost per meal is $4.62, 53% higher than the national average; however, the largest municipality in Nevada County is Grass Valley, population 13,000, which is 60 miles from Sacramento, California. Other counties that rank among those with the highest meal costs are in the Northeast and are part of more urban areas; one example is Manhattan (New York County), where the meal cost is $5.85, making it the county with the third highest meal cost in the United States.

In some cases, the meal cost may be high in part due to the expense of transporting food to a resort area or an island. For example, Nantucket County, Massachusetts, where the average cost of a meal is $3.70, is a popular island vacation destination with a high median income. Other counties with a significant resort or vacation presence are among the highest meal-cost areas, such as Aspen in Pitkin County, Colorado ($3.61) and Napa County, California ($4.19). While local families in such areas typically have higher-than-average median incomes, these communities are also home to households with lower incomes for whom higher food costs can be particularly challenging.

HIGH FOOD INSECURITY COUPLED WITH HIGH FOOD COST

Seven counties fall into the top 10% for both food insecurity and meal cost (see Table 09). An average of one in every five individuals in these counties is food insecure, totaling more than 181,000 food-insecure people who live in

areas with some of the highest meal costs. Although these counties may not face the highest food prices in the nation, the average cost per meal reaches as high as $3.74 in Lafayette County, Mississippi, 24% higher than the national average. Six of the seven counties are located in the South, and four have persistent poverty. Although these counties have an average unemployment rate (4.8%) close to the national county average (4.6%), they have higher-than-average poverty (25% versus 16%) and lower-than-average homeownership (52% versus 71%).

TABLE 09: COUNTIES WITH HIGHEST FOOD INSECURITY AND MEAL COSTS, 2017

County	State	Region	Food Insecure	Meal Cost	Unemployment	Poverty	Homeownership	Median Income
Pike	AL	South	**21.0%**	$3.36	4.9%	26.3%*	59.2%	$35,684
Leon	FL	South	**19.7%**	$3.36	3.9%	20.5%	52.6%	$49,941
Orleans	LA	South	**21.8%**	$3.64	5.1%	25.4%*	47.1%	$38,721
Lafayette	MS	South	**18.4%**	$3.74	4.2%	25.3%*	58.4%	$45,019
Oktibbeha	MS	South	**22.1%**	$3.39	4.8%	29.8%*	53.2%	$37,348
Hopewell	WA	South	**18.5%**	$3.35	6.1%	21.2%	51.0%	$40,712
Whitman	WA	West	**18.3%**	$3.58	4.4%	27.5%	44.5%	$41,574

* Persistent-poverty county

High meal costs can force food-insecure households to make tradeoffs that in turn make it difficult to invest in their long-term economic success. They may even force families to choose between buying food and paying for housing. Compared to all counties, those with the highest meal costs tend to have lower rates of homeownership, higher rent, and a higher rental burden—which occurs when a household pays 35% or more of their income on rent (see Figure 06).

Figure 06: Counties with High Meal Costs have Slightly Lower Homeownership and Higher Rental Burden

Percentage of total county population by homeownership and rental burden among counties with high meal costs, 2017

Source: Data from 2013-2017 American Community Survey (ACS).
Note: A household experiences rental burden when it pays 35% or more of its income on rent.

FEEDING AMERICA

FOOD INSECURITY SINCE THE GREAT RECESSION

Across the United States, 40 million people (12.5%) are estimated to be food insecure as of 2017 (Coleman-Jensen et al., 2018). The prevalence of food insecurity has declined significantly since reaching 16.6% of the U.S. population in 2009, the last year of the Great Recession. The prevalence of food insecurity, however, only tells part of the story.

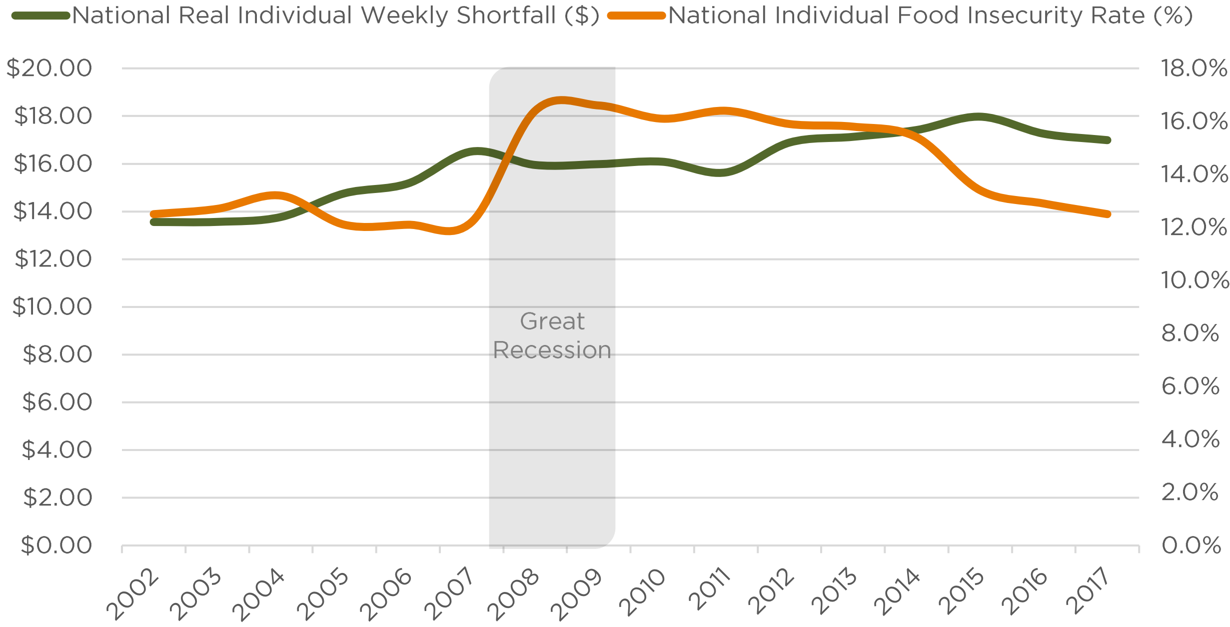
Food-insecurity rates alone do not provide insight into how the challenges facing food-insecure individuals have changed over time. One way to examine changing need among those struggling with hunger is to look at changes in how much additional money they report needing each week to meet their food needs, or the food budget shortfall.

In 2017, food-insecure households reported needing an additional $16.99 per person per week, on average, to meet their food needs. When accounting for inflation, this shortfall represents a 1.6% decrease from 2016; however, it also represents a 6.5% increase since 2008, the first full year of the Great Recession. Despite the national decline in food-insecurity rates, the amount of money food-insecure individuals report needing is still higher than it was at the start of the recession.

The increase in the food budget shortfall since 2008 helps shed some light on the continued struggles of food-insecure individuals and families across the country. Although the total number of people living in food-insecure households has decreased during the economic recovery, individual need among people who are food insecure has remained higher. Despite the economic recovery and reductions in unemployment and poverty, millions of people still struggle to get by because of persistent economic challenges, such as underemployment and stagnant wages. In addition, rising costs for essentials, especially rent and housing expenses, continue to put real cost pressure on low-income families, many of whom already report having to make regular spending tradeoffs to help ensure they have sufficient food.

Figure 05: Reported Need Down but Still High in 2017

Reported dollars needed per week to be food secure



Note: Shortfall values from *Map the Meal Gap 2019* calculated using Current Population Survey (CPS) data and adjusted for inflation using 2017 dollars; food-insecurity rates from the USDA

CHILD FOOD INSECURITY: RESULTS AND DISCUSSION

Although in 2017 child food insecurity continued its downward trend since the recession, the results of *Map the Meal Gap* indicate that children remain at risk in every state, county and congressional district in the United States.

Although households with children have slightly higher median incomes on average, they may also experience greater budgetary constraints, due to larger household sizes and the fact that some household members rely on caregivers and do not contribute to household income (Coleman-Jensen et al., 2013). Across states, the percentage of children estimated to live in a food-insecure household is notably higher compared to the general population. This is consistent with what the USDA finds at the national level.

The following sections summarize key findings related to local child food insecurity, including a discussion on income and regional variations.

CHILD FOOD INSECURITY AT THE STATE LEVEL

Child food insecurity ranges from a low of 10% in North Dakota to a high of 24% in New Mexico (see Table 10). Even in the most food-secure state (North Dakota), 1 in 10 children is at risk of hunger.

Sixteen of the 20 states with the highest child food-insecurity rates also have the highest rates of food insecurity among the general population. Of these 16 states with the highest need among both populations, 12 (75%) are located in the South. Some states in the Northeast, despite having lower child food-insecurity rates, have high absolute numbers of children living in food-insecure households because they are densely populated. For example, New York (18%) is home to 732,300 food-insecure children.

TABLE 10: CHILD FOOD INSECURITY BY STATE, 2017			
State	Rank	Child Food Insecurity (%)	Child Food Insecurity (#)
U.S. (USDA)		17.0%	12,540,000
NM	1	24.1%	118,030
AR	2	23.6%	167,440
LA	3	23.0%	255,640
MS	4	22.9%	163,530
TX	5	22.5%	1,658,680
AL	6	22.3%	243,880
OK	7	22.2%	213,720
AZ	8	21.3%	348,550
DC	9	21.2%	26,450
WV	10	20.6%	76,970
FL	11	20.4%	854,880
NC	12	20.1%	461,630
GA	13	20.0%	503,370
NV	13	20.0%	136,800
OH	15	19.6%	510,030
OR	16	18.9%	165,290
TN	16	18.9%	285,770
AK	18	18.7%	34,690
ME	19	18.5%	47,020
KY	20	18.4%	186,660
KS	21	18.3%	130,210
SC	21	18.3%	202,110
CA	23	18.1%	1,638,430
NY	24	17.6%	732,300
HI	25	17.5%	53,540
MO	25	17.5%	243,110
IN	27	17.4%	273,380
NE	27	17.4%	82,370
WY	27	17.4%	23,960
RI	30	17.3%	35,760
WA	30	17.3%	284,760
DE	32	17.0%	34,750
PA	33	16.4%	437,340
SD	33	16.4%	34,970
MT	35	16.1%	36,910
MI	36	15.9%	345,130
VT	36	15.9%	18,760
ID	38	15.8%	69,920
IL	39	15.7%	453,260
CT	40	15.5%	115,240
WI	41	15.4%	197,290
IA	42	15.3%	111,520
MD	43	15.2%	204,660
UT	44	14.7%	135,940
CO	45	14.0%	177,360
NJ	46	13.2%	260,340
VA	46	13.2%	247,470
MN	48	12.6%	163,310
NH	49	12.3%	31,640
MA	50	11.7%	159,950
ND	51	9.8%	16,900

CHILD FOOD INSECURITY AT THE COUNTY LEVEL

CHILD FOOD INSECURITY CHANGE BETWEEN 2016 AND 2017

Nationally, the percent of children living in food-insecure households stands at 17% in 2017, roughly equivalent to the rate in 2016 (Coleman-Jensen et al., 2018). Consistent with this national trend, nearly 99% of all counties did not see statistically significant changes in their child food-insecurity rates between 2016 and 2017. Of the 33 counties that did, however, 29 (88%) saw decreases. It bears mentioning that county level estimates may be less stable from year to year than those at the state or national level due to smaller sample sizes, particularly in counties with very small child populations. Because of the likelihood for inaccurate estimates from smaller sample sizes, specific county comparisons between 2016 and 2017 are not provided in this report.

CHILD FOOD-INSECURITY RATES

The variation in rates of child food insecurity at the county level demonstrates that this issue is much more pervasive in specific communities, although no county is free of child food insecurity. The percent of children estimated to be food insecure at the county level ranges from a low of 6% to a high of 40%.[14] Across the 325 counties that fall into the top 10% for the highest child food-insecurity rates, however, the percent of children living in food-insecure households ranges from 25% to 40%. These counties also have notably higher poverty rates compared to the rest of the nation. Across the highest child food-insecurity counties, an average of 40% of children live in poverty, compared to 22% across all U.S. counties. These counties also suffer from low median incomes and high unemployment rates (see Table 11).

Table 11: AVERAGE CHILD FOOD INSECURITY AND ECONOMIC INDICATORS, 2017

	Child Food Insecurity		Unemployment		Child Poverty		Homeownership*		Median Income*	
County Type	2016	2017	2016	2017	2016	2017	2016	2017	2016**	2017
High Child Food Insecurity	28.3%	27.5%	7.8%	6.7%	40.5%	40.0%	56.4%	56.7%	$36,993	$38,281
All U.S. Counties	20.1%	19.4%	5.3%	4.6%	22.8%	22.1%	64.8%	65.0%	$57,864	$58,997

*Among households with children
**In 2017 inflation-adjusted dollars

[14] Results indicate that child food insecurity exists in every county in the U.S. with a population under age 18. The 2017 ACS dataset does not contain adequate data for Loving, TX and Kalawao, HI. As a result, child food-insecurity rates could not be estimated for these two counties

Similar to the overall population, there is considerable overlap between the counties with the highest rates of child food insecurity and the persistent-poverty counties identified by the USDA: more than half (N=180) of the high child food-insecurity rate counties (N=325) are also persistent poverty counties. In five of the top 10% of counites with the highest child food-insecurity rates, more than 35% of children live in food-insecure households, including East Carroll Parish, Louisiana with a rate of 40%. All five of these counties are designated as persistent-poverty counties by the USDA and are home to a majority non-white population, consistent with the overall findings that minority groups in some of these communities are disproportionately affected by longstanding poverty and systemic challenges. Three counties—Issaquena County, Mississippi, Kusilvak Census Area, Alaska, and East Carroll Parish, Louisiana—have higher child food-insecurity rates than even the highest rate of food insecurity among the general population (36% in Jefferson County, Mississippi). However, it is important to note that child food insecurity is more pervasive in rural areas. Rural (nonmetro) counties account for 84% of high child food-insecurity counties, but only 63% of all U.S. counties (see Table 12).

TABLE 12: HIGH CHILD FOOD-INSECURITY COUNTIES BY GEOGRAPHIC AREAS, 2017		
County Type	Top 10% Counties by Child Food Insecurity	All Counties
Metropolitan (urban)	16.0%	37.1%
Micropolitan (rural)	21.8%	20.4%
Neither (rural)	62.2%	42.5%
Total	**100.0%**	**100.0%**

COUNTIES WITH THE HIGHEST NUMBER OF FOOD-INSECURE CHILDREN

Although the rate of child food insecurity is one important indicator of need, even counties with modest rates may still be home to large numbers of children whose families are food insecure. There are 13 counties in the U.S. with more than 100,000 food-insecure children (see Table 13). For example, Los Angeles County, California is home to more than 410,000 food-insecure children. Cook County, Illinois and Harris County, Texas both fall into this group and contain the third and fourth most populous cities in the United States (Chicago and Houston, respectively). Across the five counties that comprise New York City, there are over 335,000 food-insecure children in total. Counties with more than 100,000 food-insecure children have an average child food-insecurity rate of 19%, an average child poverty rate of 23% and an average unemployment rate of 4%.

TABLE 12: COUNTIES WITH MORE THAN 100,000 FOOD-INSECURE CHILDREN, 2017			
State	County (Metro Area)	Food-Insecure Children (#)	Food-Insecure Children (%)
CA	Los Angeles	413,910	18.2%
NY	New York (five boroughs, collectively)	335,820	18.2%
TX	Harris (Houston)	284,790	23.2%
AZ	Maricopa (Phoenix)	210,760	20.4%
IL	Cook (Chicago)	184,900	15.8%
TX	Dallas	156,630	22.9%
CA	San Diego	120,360	16.5%
TX	Tarrant (Ft. Worth)	114,390	21.4%
CA	Orange (Anaheim)	112,480	15.7%
CA	Riverside	108,560	17.7%
FL	Miami-Dade	107,530	19.4%
CA	San Bernardino	107,180	18.7%
TX	Bexar (San Antonio)	103,360	21.0%

Although these counties may exhibit rates of child food insecurity close to the average of all counties, the fact that they are home to a large number of food-insecure children illustrates that they still face real challenges in addressing the need in their communities due to the sheer number of children whose families may be in need.

CHILD FOOD INSECURITY AMONG CONGRESSIONAL DISTRICT

Similar to findings at the county and state level, no congressional district is free of child food insecurity. Rates range from an estimated low of 9% (nearly 20,000 children) in Virginia's 10th congressional district to 30% (almost 63,000 children) in New York 15th congressional district. The congressional district with the largest number of food-insecure children is Texas' 15th, where an estimated 63,010 children (26%) live in food-insecure homes.

The congressional districts with the highest rates of child food insecurity – the 44 that fall into the top 10% among all districts – have an average rate of 25%, compared to 18% of children in the average district. Incomes in these districts are also much lower; the average child poverty rate across these districts is 32%, compared to 18% in the average district.

HEALTH IMPLICATIONS OF CHILD FOOD INSECURITY

There is a broad base of literature illustrating links between food insecurity and poor child health and behavioral outcomes at every age. For example, food-insecure women are more likely to experience birth complications than food-secure women (Laraia, Siega-Riz, & Gundersen, 2010). One indicator of

child and maternal health is low birthweight among infants, which is more common among counties with the highest rates of child food insecurity than across all counties (10% versus 8%) (Robert Wood Johnson Foundation, 2018). Furthermore, children struggling with food insecurity may be at greater risk for stunted development, anemia and asthma, oral health problems and hospitalization (Kirkpatrick, McIntyre, & Potestio, 2010; Eicher-Miller, Mason, Weaver, McCabe, & Boushey, 2009; Skalicky et al., 2006; Muirhead, Quiñonez, Figueiredo, & Locker, 2009; Cook, 2006). Overall, food insecurity is linked with poorer physical quality of life, which may prevent children from fully engaging in daily activities (Casey et al., 2005). At school, food-insecure children are at increased risk of falling behind their food-secure peers both academically and socially; food insecurity is linked to lower reading and mathematics test scores, and they may be more likely to exhibit behavioral problems, including hyperactivity, aggression and anxiety (Jyoti, Frongillo, & Jones, 2005; Slack, & Yoo, 2005; Whitaker, Phillips, & Orzol, 2006; Slopen, Fitzmaurice, Williams, & Gilman, 2010).

CHILD FOOD INSECURITY, INCOME, & FEDERAL FOOD ASSISTANCE

Nationally, WIC supports more than 7 million pregnant, breastfeeding and postpartum women and their young children (USDA FNS, 2019). The NSLP, SBP and Summer Food Service Program (SFSP) provide meals to low-income children in school and during school breaks. More than 100,000 schools operate NSLP, providing free or reduced-price lunches to 22 million children (USDA FNS, 2019). SNAP provides electronic benefit cards to households to purchase groceries, and although it is not limited to children, 44% of all SNAP participants in federal fiscal year 2017 were children (more than 18 million children) (USDA, 2019).

Federal nutrition programs are the first line of defense against hunger, and it is critically important to understand the income composition of the food-insecure population in each county and congressional district to help flag where outreach may be needed to maximize participation in these programs. In recognition of the importance of federal child nutrition programs to the development of low-income children, *Map the Meal Gap* provides estimates around whether children in food-insecure households are income-eligible for these programs.

Findings indicate that an overwhelming majority of food-insecure children in these counties are likely eligible to receive assistance from child nutrition programs. In 94% of U.S. counties (N=2,953), a majority (50% or more) of food-insecure children live in households with incomes at or below 185% of

the federal poverty line, meaning they are likely eligible for government programs targeted for children like WIC and school lunch. Among the high child food-insecurity counties, an average of 78% of food-insecure children live in households with incomes below 185% of the poverty line.

CHARITABLE FOOD ASSISTANCE

Although many food-insecure households are also low-income, households with incomes well above the federal poverty line can also be food insecure. In many counties, there are still food-insecure children whose households have incomes above 185% of poverty, which render them likely ineligible for any federal assistance targeted specifically to children.

In more than 200 counties, a majority of food-insecure children are likely ineligible for assistance. Examples of food-insecure children are found in diverse locations around the country. For example, in Daggett County, Utah, approximately 19% of all children are food insecure and 100% of these children live in households with incomes above 185% of the poverty line. In Nassau County, New York, more than half (57%) of the estimated 36,350 food-insecure children are living in households with incomes above 185% of the poverty level.

Some counties also have high child food-insecurity rates and low median incomes, but relatively high percentages of children living in ineligible households. In Clinch County, Georgia, for example, 27% of children are estimated to be food insecure and family median income is $21,838 (less than half the average of all counties). However, almost 1 in 4 food-insecure children (23%) are estimated to reside in households with incomes too high to qualify for government food programs. For these children and their families, charitable assistance may play a critical role in helping them meet their food needs.

As high levels of food insecurity persist, the number of families turning to charitable food assistance organizations remains at record levels. In 2013, more than 46 million people, representing nearly 15.5 million households, received assistance through the Feeding America network of food banks. Of the 46 million individuals reached by food banks, more than 12 million were children, 3.5 million of whom were ages 5 or younger. Nearly two-thirds (63%) of households served by Feeding America report planning to get food at meal or grocery programs on a regular basis to help with their monthly food budget, as opposed to waiting to come on an emergency basis (*Hunger in America*, 2014).

There may be a number of reasons why these households struggle. As discussed in the Methodology Overview, unemployment is a strong risk factor for food insecurity; however, other challenges, such as income shocks, medical expenses, living in a high-cost area and underemployment, may also contribute to these households' struggles to meet their food needs. In the Feeding America research report *In Short Supply: American Families Struggle to Secure Everyday Essentials*, low-income families reported altering their food purchasing habits in order to afford non-food necessities such as soap, personal hygiene products and diapers, highlighting that non-food needs can place equal burden on a struggling household (Santos et al., 2013).

Better understanding these nuances can enable state and local legislators, food banks and other community leaders to tailor efforts to best address the need within their own communities and understand where they can strengthen the safety net to ensure no child suffers. Children's vulnerability to recessions and other economic shifts depends on the strength of the social safety net.

REFERENCES

Alexandria, VA: Gordon, A., & Oddo, V. (2012). *Addressing child hunger and obesity in Indian Country: Report to Congress*. Mathematica Policy Research.

Blank, R. & Greenberg, M. (2008). *Improving the measurement of poverty*. Washington, D.C.: The Hamilton Project.

Bureau of Labor Statistics. (n.d.). CPI inflation calculator.

Casey, P. H., Szeto, K. L., Robbins, J. M., Stuff, J. E., Connell, C., Gossett, J. M., & Simpson, P. M. (2005). Child health-related quality of life and household food security. *Archives Pediatric and Adolescent Medicine*, 159, 51-56.

Coleman-Jensen, A., McFall, W. & Nord, M. (2013). *Food insecurity in households with children: Prevalence, severity, and household characteristics, 2010-11*. Washington, D.C.: United States Department of Agriculture, Economic Research Service.

Coleman-Jensen, A., Rabbit, M. P., Gregory, C., & Singh, A. (2018). *Household food security in the United States in 2017*. USDA ERS.

Coleman-Jensen, A., Rabbit, M. P., Gregory, C. & Singh, A. (2018). *Household food security in the United States in 2017: Statistical Supplement*. U.S. Department of Agriculture, Economic Research Service.

Cook, J. T., Frank, D. A., Leveson, S. M., Neault, N. B., Heeren, T. C., Black, M. M., Berkowitz, C., Casey, P. H., Meyers, A. F., Cutts, D. B., & Chilton, M. (2006). Child food insecurity increases risks posed by household food insecurity to young children's health. *Journal of Nutrition*, 136(4), 1073-1076.

Eicher-Miller, H. A., Mason, A. C., Weaver, C. M., McCabe, G. P., & Boushey, C. J. (2009). Food Insecurity is associated with iron deficiency anemia in US adolescents*. American Journal of Clinical Nutrition*, 90 (5), 1358-1371.

Feeding America. (2014). *Hunger in America 2014: National report*.

Feeding America. (2015*). Baby boomers and beyond: Facing hunger after fifty*.

Fontenot, K. R., Semega, J. L., & Kollar, M. A. (2018). *Income and poverty in the United States: 2017*. Washington, D.C.: United States Census Bureau.

Fox, L. (2018). *The supplemental poverty measure: 2017*. Washington, D.C.: United States Census Bureau.

Gundersen, C. (2008). Measuring the extent, depth, and severity of food insecurity: An application to American Indians in the United States. *Journal of Population Economics,* 21(1): 191-215.

Gundersen, C., A. Dewey, A. Crumbaugh, M. Kato & E. Engelhard. *Map the Meal Gap 2018: A report on county and congressional district food insecurity and county food cost in the United States in 2016.* Feeding America, 2018.

Gundersen, C., Kreider, B., & Pepper, J. (2011). The economics of food insecurity in the United States. *Applied Economic Perspectives and Policy,* 33(3): 281-303.

Gundersen, C. & Ziliak, J. (2015). Food insecurity and health outcomes. *Health Affairs*, 34(11): 1830-1839.

Hwang, S. W. (2001). Homelessness and health. *Canadian Medical Association Journal*, 164(2), 229-233.

Jyoti, D. F., Frongillo, E. A., & Jones, S. J. (2005). Food insecurity affects school children's academic performance, weight gain, and social skills. *Journal of Nutrition*, 135(12), 2831-2839.

Kirkpatrick, S. I., McIntyre, L., & Potestio, M. L. (2010). Child hunger and long-term adverse consequences for health. *Archive of Pediatric Adolescent Medicine*, 164(8), 754-762.

Kushel, M. B., Gupta, R., Gee, L., & Haas, J. S. (2006). Housing instability and food insecurity as barriers to health care among low-income Americans. *Journal of General Internal Medicine*, 21(1), 71-77.

Laraia, B. A., Siega-Riz, A., & Gundersen, C. (2010). Household food insecurity is associated with self-reported pregravid weight status, gestational weight gain and pregnancy complications. *Journal of the American Dietetic Association*, 110(5), 692-701.

Lauffer, S. (2019). *Characteristics of supplemental nutrition assistance program households: Fiscal year 2017*. Washington, DC: United States Department of Agriculture.

Mabli, J., Ohls, J., Dragoset, L., Castner, L., & Santos, B. (2013). *Measuring the effect of Supplemental Nutrition Assistance Program (SNAP) participation on food security*. Alexandria, VA: United States Department of Agriculture, Food and Nutrition Service.

Metallinos-Katsaras, E., Gorman, K. S., Wilde, P. & Kallio, J. (2011). A longitudinal study of WIC participation on household food insecurity. *Maternal and Child Health Journal*, 15: 627–33.

Muirhead, V., Quiñonez, C., Figueiredo, R., & Locker, D. (2009). Oral health disparities and food insecurity in working poor Canadians. *Community Dentistry and Oral Epidemiology*, 37(4), 294-304.

Nord, M., Coleman-Jensen, A., & Gregory, C. (2014). *Prevalence of U.S. food insecurity is related to changes in unemployment, inflation, and the price of food*. Washington, D.C.: United States Department of Agriculture, Economic Research Service.

Robert Wood Johnson Foundation. (2019). *2019 county health rankings*.

Santos, R., Waxman, E., & Engelhard, E. (2013). *In short supply: American families struggle to secure everyday essentials*. Chicago, IL: Feeding America.

Seligman, H. K., Bolger, A. F., Guzman, D., Lopez, A. & Bibbins-Domingo, K. (2014). Exhaustion of food budgets at month's end and hospital admissions for hypoglycemia. *Health Affairs*, 33(1): 116-123.

Seligman, H. K., Laraia, B. A., & Kushel, A. M. (2009). Food insecurity is associated with chronic disease among low-income NHANES participants. *Journal of Nutrition, 140:* 304-310.

Skalicky, A., Meyers, A. F., Adams, W. G., Yang, Z., Cook, J. T., & Frank, D. A. (2006). Child food insecurity and iron deficiency anemia in low-income infants and toddlers in the United States. *Maternal and Child Health Journal*, 10(2), 177-185.

Slack, K. S. & Yoo, J. (2005). Food hardship and child behavior problems among low-income children. *Social Service Review*, 79(3), 511–536.

Slopen, N., Fitzmaurice, G., Williams, D. R., & Gilman, S. E. (2010). Poverty, food insecurity, and the behavior of childhood internalizing and externalizing disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 49(5), 444-452.

United States Census Bureau. (2018). *Current population survey, 2017: Annual social and economic supplement*.

United States Department of Agriculture, Census of Agriculture. (2014). *2012 Census of Agriculture*.

United States Department of Agriculture, Economic Research Service. (2017). *Geography of poverty*.

United States Department of Agriculture, Food and Nutrition Service (2019). *Program data*.

United States Department of Health and Human Services. (2019). *Poverty guidelines*.

Whitaker, R. C., Phillips, S. M., & Orzol, S. (2006). Food insecurity and the risks of depression and anxiety in mothers and behavior problems in their pre-school-aged children. *Pediatrics*, 118(3), e859–e868.

Ziliak, J. P. & Gundersen, C. (2019). *The State of Senior Hunger in America 2017: An Annual Report*.

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TECHNICAL BRIEF

The following methodological overview will provide a description of the methods and data used to establish the congressional district and county-level food insecurity estimates, the food budget shortfall, the cost-of-food index, and the average cost of a meal. Following each section, we provide information on the central results for our methods.

REASERCH GOALS

The primary goal of the *Map the Meal Gap* analysis is to more accurately assess food insecurity at the community level. The methodology undertaken to make this assessment was developed to be responsive to the following questions:

- Is the methodology directly related to the need for food?
  - Yes, it uses the USDA food-insecurity measure.
- Does it reflect the many determinants of the need for food?
  - Yes, along with income, our measure uses information on unemployment rates, median incomes, and other factors that have been shown to be associated with food insecurity
- Can it be broken down by income categories?
  - Yes, we can break it down into relevant income categories
- Is it based on well-established, transparent methods?
  - Yes, the methods across the different dimensions are all well-established
- Can we provide the data without taxing the already limited resources of food banks?
  - Yes, the measures are all established by the Feeding America national office
- Can it be consistently applied to all counties in the U.S.?
  - Yes, the measure relies on publicly available data for all counties
- Can it be readily updated on an annual basis?
  - Yes, the publicly available data are released annually
- Does it allow one to see the potential effect of economic downturns?
  - Yes, by the inclusion of relevant measures of economic health in the models

SUMMARY OF METHODS

OVERALL AND CHILD FOOD-INSECURITY RATE

METHODOLOGY

We begin by analyzing the relationship between food insecurity and its determinants (poverty, unemployment, median income, etc.) at the state level. We then use the coefficient estimates from this analysis combined with information on the same variables defined at the county level to generate estimated food-insecurity rates for all individuals and for children at the county and congressional district levels.

DATA SOURCES

The Current Population Survey (CPS) survey data are used to assess the relationship between food insecurity and determinants of food insecurity at the state level. The variables used were selected because of their availability at the county, congressional district, and state level and included unemployment rates, median income, poverty rates, homeownership rates, percent of the population that is African American, and percent of the population that is Hispanic. County and congressional district level data are drawn from the American Community Survey (ACS), with the exception of the unemployment data, which are drawn from the Bureau of Labor Statistics (BLS). For the child food-insecurity estimates, we use data restricted to households with children for all variables except the unemployment rate, which is defined for the full population of the county.

FOOD BUDGET SHORTFALL

METHODOLOGY

Responses from food-insecure households to CPS questions about a food budget shortfall are calculated at the individual level and then averaged to arrive at a weekly food budget shortfall of $16.99. As discussed in *Household Food Security in the United States in 2017* (Coleman-Jensen et al., 2018), households experiencing food insecurity experience this condition in, on average, seven months of the year.

FI persons * $16.99 * 52 weeks * (7/12) =	$ reported needed by the food insecure to meet their food needs in 2017

DATA SOURCES

The CPS data includes two questions relevant for this determination. First, a question asks if a household needed more, less, or the same amount of money to meet their basic food needs. Second, those that respond “more” are asked a further question about how much more money is needed. These questions are posed after questions about weekly food expenditures, but before the food security module.

COST-OF FOOD INDEX

METHODOLOGY

To establish a relative price index that allows for comparability between counties, Nielsen assigns every sale of UPC-coded food items in a county to one of the 26 food categories in the USDA Thrifty Food Plan (TFP). These are then weighted to the TFP market basket based on pounds purchased per week by age and gender. For the current analyses, pounds purchased by males age 19-50 are examined. While other Thrifty Food Plans for different ages and/or genders may have resulted in different *total* market basket costs, *relative pricing* between counties (our goal for this analysis) is not affected. The total market basket is then translated into a multiplier that can be applied to any dollar amount. This multiplier differs by county, revealing differences in food costs at the county level.

DATA SOURCES

Nielsen provided in-store scanning data and Homescan data.

NATIONAL AVERAGE MEAL COST

METHODOLOGY

The average dollar amount spent on food per week by food-secure individuals is divided by 21 (three meals per day x seven days per week). Food expenditures for *food-secure* individuals were used to ensure that the result reflected the cost of an adequate diet. We then weight the national average cost per meal by the "cost-of-food index" to derive a localized estimate.

DATA SOURCES

Before respondents are asked the food security questions on the CPS, they are asked how much money their household usually spends on food in a week.

FOOD-INSECURITY RATE ESTIMATES

METHODS

Full Population of Counties (and Congressional Districts)

We proceed in two steps to estimate the extent of food insecurity in each county. In what follows, the descriptions are for counties but, except where otherwise noted, they also apply to congressional districts. Because congressional districts were redrawn in 2012, MMG estimates are available for the current congressional districts only for 2013 through 2017 (the last five years).

Step 1: Using state-level data from 2001-2017, we estimate a model where the food-insecurity rate for individuals at the state level is determined by the following equation:

$$FI_{st} = \alpha + \beta_{UN}UN_{st} + \beta_{POV}POV_{st} + \beta_{MI}MI_{st} + \beta_{HISP}HISP_{st} + \beta_{BLACK}BLACK_{st} + \beta_{own}OWN_{st} + \mu_t + \upsilon_s + \varepsilon_{st} \quad (1)$$

where s is a state, t is year, UN is the unemployment rate, POV is the poverty rate, MI is median income, HISP is the percent Hispanic, BLACK is the percent African-American, OWN is the percent of individuals who are homeowners, μ_t is a year fixed effect, υ_s is a state fixed effect, and ε_{st} is an error term. This model is estimated using weights defined as the state population. The set of questions used to identify whether someone is food insecure, i.e., living in a food-insecure household, are defined at the household level. A household is said to be food insecure if the respondent answers affirmatively to three or more questions from the Core Food Security Module (CFSM). A complete list of questions in the CFSM is found in Table 1.

Our choice of variables was first guided by the literature on the determinants of food insecurity. We included variables that have been found in prior research to influence the probability of someone being food insecure. (For an overview of that literature in this context see Gundersen and Ziliak, 2018.) Next, we chose variables that are available both in the CPS and at the county level, such as those in the American Community Survey (ACS) or other sources (described below). The model does not include variables that are not available at both the state and county level.

Of course, these variables do not portray everything that could potentially affect food-insecurity rates. In response, we include the state and year fixed effects noted above which allow us to control for unobserved state-specific and year-specific influences on food insecurity.

Step 2: We use the coefficient estimates from Step 1 plus information on the same variables defined at the county level to generate estimated food-

insecurity rates for individuals defined at the county level. This can be expressed in the following equation:

$$FI^*_c = \hat{\alpha} + \widehat{\beta_{UN}} UN_c + \widehat{\beta_{POV}} POV_c + \widehat{\beta_{MI}} MI_c + \widehat{\beta_{HISP}} HISP_c + \widehat{\beta_{BLACK}} BLACK_c + \widehat{\beta_{OWN}} OWN_C + \widehat{\mu_{2017}} + \widehat{\nu_s} \quad (2)$$

where c denotes a county. The variables POV, MI, HISP, BLACK, and OWN are all based on averages taken from the ACS for 2013 to 2017 in the county-level models and from 2017in the congressional district-level models. The variable UN is based on the 2017 values from BLS for the county-level estimates and 2017 from the ACS for the congressional district models. From our estimation of (2), we calculate both food-insecurity rates and the number of food-insecure persons in a county. The latter is defined as $FI^*_c{}^*N_c$ where N is the number of persons. The estimation of (1) gives us point estimates for food-insecurity rates at the county level.

Income Bands within Counties (and Congressional Districts)

Food-insecurity rates are also estimated for those above or below each state's Supplemental Nutrition Assistance Program (SNAP) and National School Lunch Program (NSLP) income eligibility threshold (see Appendix A for a list of SNAP and NSLP thresholds for each state). In this case, we continue to proceed with a two-step estimation method. The structure of the equations is slightly different than above. Equation (1) is instead specified as follows:

$$FIC_{st} = \alpha + \beta_{UN} UN_{st} + \beta_{HISP} HISP_{st} + \beta_{BLACK} BLACK_{st} + \beta_{OWN} OWN_{st} + \mu_t + \upsilon_s + \varepsilon_{st} \quad (1')$$

and equation (2) is specified as:

$$FIC^*_c = \hat{\alpha} + \widehat{\beta_{UN}} UN_c + \widehat{\beta_{HISP}} HISP_c + \widehat{\beta_{BLACK}} BLACK_c + \widehat{\beta_{OWN}} OWN_C + \widehat{\mu_{2017}} + \widehat{\nu_s} \quad (2')$$

In this case, (1') is estimated on the following sample: We limit the estimation to those with incomes within a particular income range (e.g., below 130 percent of the poverty line) but UN, BLACK, HISPANIC, and OWN are defined for all individuals. We do so since these variables are only available in the ACS for all income levels. We estimate FIC based on households below each of the thresholds noted in Appendix Table 1. With this information, we proceed as follows. First, we identify the number of food insecure persons with incomes below each of the thresholds. Second, the number of food insecure persons with incomes above each of the thresholds is defined as the total number of food insecure persons minus the number of food insecure persons below that threshold. Third, the remaining number of food insecure persons are defined as between those two thresholds.

A simple example for a county with a SNAP threshold of 160% of the poverty line may help to illustrate this. Suppose in a county of 100,000 persons, 20,000 persons are identified as food insecure; 14,000 are identified as food insecure

with incomes below 160% of the poverty line; and 16,000 are identified as food insecure with incomes below 185% of the poverty line. In this case, there are 14,000 food insecure persons with incomes under 160% of the poverty line; 2,000 with incomes between 160% and 185% of the poverty line (i.e., 16,000-14,000); and 4,000 with incomes above 185% of the poverty line (i.e., 20,000-16,000). These are then expressed as percentages – 70% below 160% of the poverty line (i.e., 14,000/20,000), 10% between 160% and 185% of the poverty line (i.e., 2,000/20,000), and 20% above 185% of the poverty line (i.e., 4,000/20,000). In states where the gross income threshold for SNAP is 185% or 200% of the poverty line, there are only two categories – above and below that threshold.

Each of the estimates for the number of food insecure persons below a certain threshold is done independently of each other. In a very small number of counties, what this leads to is the total number of food insecure people that are estimated to be below the lower threshold and above the higher threshold (e.g., 160% and 185%) is greater than the total number of food insecure people for that county. This would imply that there are no food insecure persons between the thresholds which is unlikely to be the case. As a result, starting with *Map the Meal Gap 2019*, we take the county estimate of the number of food insecure persons below the lower threshold (e.g., 160% of the poverty line) directly from our model but the proportion and subsequent number of food insecure persons between the two thresholds (e.g., 160% and 185% of the poverty line) is taken from the population weighted average of all counties in the state. The remaining number of food insecure persons in that county (if any) are in the over 185% of the poverty line category.

Estimated food-insecurity rates by income bands within congressional districts were estimated using the same methods.

Child Population of Counties (and Congressional Districts)

To estimate child food-insecurity rates at the county and congressional district levels, we proceed in essentially the same manner as for the full population. However, a few notes are needed regarding the specific procedures used for child food insecurity.

First, we define the variables for households with children rather than for all households. For example, the poverty rate is defined only for households with children. The only exception is for the unemployment rate variable, which is defined for all households. We made this decision because the sub-state unemployment rates as constructed by BLS are not broken down by whether or not an adult lives in a household where children are present.

Second, we define child food insecurity in the following manner. There are three measures of food insecurity related to children (Coleman-Jensen et al. 2018, Table 1B). The first, and the one we use, is "children in food-insecure households," which includes children residing in households experiencing low or very low food security among children, adults, or both. To be in this category, a household with children must respond affirmatively to at least three of the 18 questions in the Core Food Security Module (CFSM) in the CPS. The count of children who are food insecure is based on the number of children in food-insecure households, and the food-insecurity rate is the ratio of the number of children in food-insecure households to the total number of children in the relevant geographic area. (This measure is distinct from two other measures found in Coleman-Jensen et al. (2018) – households with food insecure children and households with very low food secure children, albeit all children falling into either of these two categories would also be categorized as being in a food insecure household.)

Third, in light of the smaller sample sizes for children, we do not break things down in the same income bands as with the full population. Instead, we break the analyses down in accordance with the threshold for free or reduced price lunches in the NSLP. Unlike for SNAP thresholds, this cutoff is the same for all states.

DATA

The information at the state level (i.e., the information used to estimate equations (1) and (1')) is derived from the CFSM in the December Supplement of the CPS for the years 2001-2017. While the CFSM has been on the CPS since 1996, it was previously on months other than December. To avoid issues of seasonality and changes in various other aspects of survey design, e.g., the screening questions, only the post-2001 years are used.

The CPS is a nationally representative survey conducted by the Census Bureau for the Bureau of Labor Statistics, providing employment, income, and poverty statistics. In December of each year, 50,000 households respond to a series of questions on the CFSM, in addition to questions about food spending and the use of government and community food assistance programs. Households are selected to be representative of civilian households at the state and national levels and thus do not include information on individuals living in group quarters, including nursing homes or assisted living facilities. Using information on all persons in the CPS for which we had information on (a) income and (b) food insecurity status, we aggregated information up to the state level for each year to estimate equation (1). We aggregated in a similar manner for equation (1'); however, only those below a defined income threshold were used in the

aggregation. As noted above, the values for the full sample for the other variables outside of income are used.

Use of Data at the County Level

For information at the county level (i.e., the information used to estimate equations (2) and (2')), we used information from the 2013-2017 five-year ACS estimates and unemployment data from the BLS. The ACS is a sample survey of three million addresses administered by the Census Bureau. In order to provide estimates for areas with small populations, this sample was defined over a five-year period. Information about unemployment at the county level was taken from information from the BLS's labor force data by county, 2017 annual averages. For information at the congressional district level, including unemployment data (i.e., the information used to estimate equation (2)), we used information from the 2017 one-year ACS estimates. For both county and congressional districts, ACS data were drawn from tables S1701 (poverty rate), C17002 (ratio of income to poverty level), B19013 (median income), DP04 (homeownership rate), and DP05 (percent African-American and percent Hispanic). For congressional districts, unemployment data were drawn from S2301. All 3,142 counties provided by the Census Bureau were included in the analysis.

For information at the child level, ACS data were drawn from tables S1701 (poverty), B17024 (ratio of income to poverty level), B19125 (household median income), B09001I (number of Hispanic children), B09001B (number of African-American children), and B25115 (homeownership). For congressional districts, child data tables are the same as those used for the county-level data with the exception of percent Hispanic and African-American children, which were pulled from S1901.

RESULTS

We now turn to a brief discussion of the results from the estimation of equation (1) and (1'). These results for the full population are presented in Table 2. In this table, we present coefficient estimates for selected variables and the corresponding standard errors for the full population and for various income categories.

Concentrating on column (1), there are several points worth emphasizing from these results. First, as expected, the effects of unemployment and poverty are especially strong. A one percentage point increase in the unemployment rate leads to a 0.52 percentage point increase in food insecurity, while a one percentage point increase in the poverty rate leads to a 0.25 percentage point increase. Second, median income has a statistically insignificant effect on the food-insecurity rate. The proportion of a state's population that is African

American, however, does have a statistically significant effect on food insecurity (a one percentage point increase in the share of a state's population that is African American leads to a 0.11 percentage point increase in food insecurity). The proportion of a state's population that is Hispanic also has a statistically significant effect: a one percentage point increase in the share of a state's population that is Hispanic leads to a 0.15 percentage point decrease in food insecurity. Third, states with higher proportions of homeowners have lower rates of food insecurity. A one percentage point increase in the proportion of a state's population that are homeowners leads to a 0.09 percentage point decrease in food insecurity. Fourth, at least as reflected in the variables used to predict food insecurity in our models, the continued high level of food insecurity in 2017 is unexpected. This can be seen in the positive and statistically significant coefficient on the year fixed effect for 2017.

The results for the various income categories (i.e., columns (2) through (6)) are broadly similar to those found for the full population, with a few differences. For example, while still negative, the effect of homeownership is statistically insignificant for all the income categories and the effect of the proportion of a state that is Hispanic is statistically insignificant for all income categories albeit also negative in sign.

In Table 3, we present the results for children. Overall, the results are similar to those for the full population, so here we emphasize two areas where they differ. First, the effect of homeownership is statistically insignificant for both all incomes (column (1)) and when incomes are restricted to under 185 percent of the poverty line (column (2)). Second, with the exception of 2008, 2009, and 2014 for all incomes, and 2005 and 2010 for those under 185 percent of the poverty line, the year fixed effects are statistically insignificant. One interpretation is that the observed factors, including state fixed effects, explain more of the variation in the child food-insecurity rates in comparison to those for the full population.

We conducted a series of tests of the *Map the Meal Gap* results to see how well the models performed. Our tests included, among other tests, the following: we compared county results aggregated to metropolitan areas with food-insecurity values for these metro areas taken from the CPS; we compared county results averaged over several years for counties that are observed in the CPS; we compared results with and without state fixed effects; we compared county results aggregated to the state level with food insecurity values for states taken from the CPS; and we compared predicted results from our model at the national level with actual food-insecurity rates per year. (For a broader discussion of *Map the Meal Gap* along with information on some

further analyses of the robustness of the *Map the Meal Gap* results, see Gundersen et al., 2014.)

Trends in County Food Insecurity Rates between 2011 and 2017

This report reviews findings from the ninth year that Feeding America has conducted the *Map the Meal Gap* analysis. Here, we consider how food-insecurity rates and numbers in 2017 compare to those in the previous six years to identify any notable shifts. (We made a similar comparison for 2011 to 2016 in last year's MMG Technical Brief for the full population and for children.) Food-insecurity estimates at the county level may be less stable from year to year than those at the state or national level due to smaller geographies, particularly in counties with small populations. Efforts are taken to guard against unexpected fluctuations that can occur in these populations by using the five-year averages from the ACS for key variables, including poverty, median income, homeownership, and the percent of the population that is African American or Hispanic. However, the other key variable in the model—unemployment—is based on a one-year estimate for each county as reported by the BLS. The model looks at the relationship between all of these variables and the rate of food insecurity as reported by USDA in order to generate the estimates.

Nationally, the food-insecurity rate declined between 2016 (12.9 percent) and 2017 (12.5 percent) (Coleman-Jensen et al., 2018). The same occurred in regards to the national child food-insecurity rate (17.5 percent to 17.0 percent).

Only a handful of counties saw a statistically significant change in their food insecurity rates. Only about one percent (35) of all 3,142 counties experienced a statistically significant change between 2016 and 2017, most of which were decreases. The number of counties with statistically significant changes is substantially higher at 10 percent (329) since 2015, 25 percent (799) since 2014, 42 percent (1,314) since 2013, 31 percent (987) since 2012, and 33 percent (1,028) since 2011.

Those counties that experienced a 2.5-percentage point or greater change in their food-insecurity estimates between 2016 and 2017 were flagged for further examination (see Appendix B). Out of 3,142 counties analyzed, only nine experienced changes in food-insecurity rates equal to or beyond the threshold of 2.5 percentage points, most of which were decreases. The list of these counties can be found in Appendix B. All of these counties have populations of less than 20,000.

Child food-insecurity rates are, as covered above, on average higher than overall food insecurity rates. As such, we only list counties with more than four

percentage point changes in child food-insecurity rates. As seen in Appendix C, there are 13 counties with a child population of at least 1,000 that fell into this category. These are similar to the changes seen for the full population in that most of them are decreases. However, the counties seeing changes in child food insecurity of at least four percentage points differ from the changes seen for the full population in that all of them have an estimated child population of under 5,000.

FOOD BUDGET SHORTFALL

METHODS

In an effort to understand the food needs of the food-insecure population, we sought to estimate the shortfall in their food budgets. To do so, we use the following question taken from the CPS Food Security Supplement:

In order to buy just enough food to meet (your needs/the needs of your household), would you need to spend more than you do now, or could you spend less?

This question is asked prior to the 18 questions used to derive the food-insecurity measure and, as a consequence, is not influenced by their responses about food insecurity. Out of those responding "more," the following question is posed:

About how much MORE would you need to spend each week to buy just enough food to meet the needs of your household?

Restricting the sample to households experiencing food insecurity over the previous 12 months, and assigning a value of "0" to households that report needing zero dollars (i.e. those who could spend "the same" each week), as well as to those that report needing "less money", we divide by the number of people in the household to arrive at a per-person figure of $16.99 per week. This value is denoted as PPC.

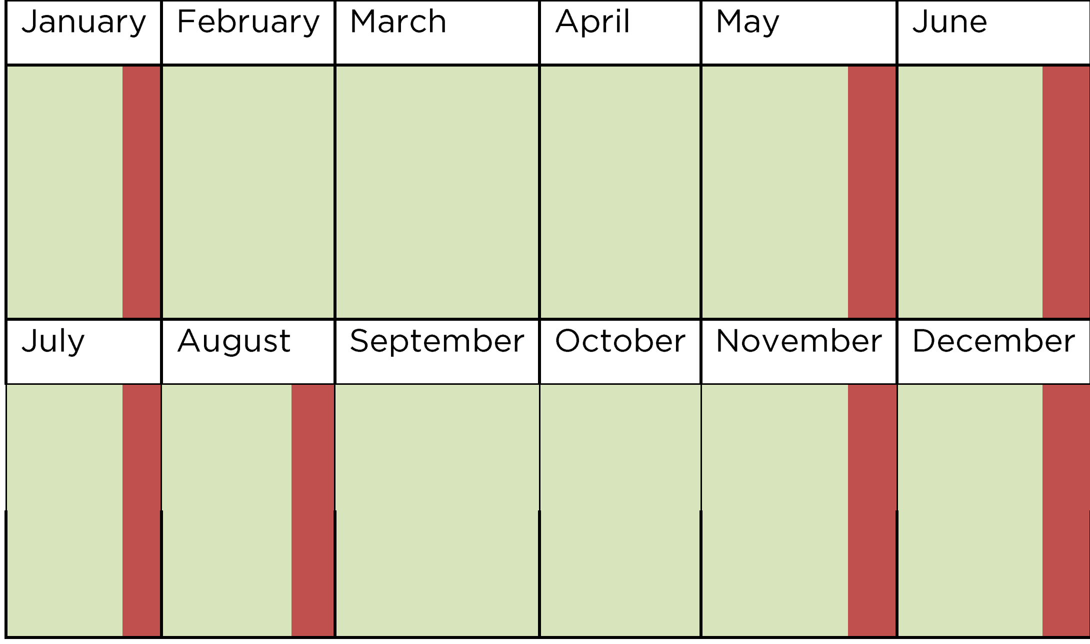
Not all food-insecure households reported needing additional food every day of the week. The phrasing of the questions above, however, suggests that responses are given with respect to a week during which the household needed to "spend more." We have assumed that these responses therefore incorporate days of the week in question during which the household was able to meet its food needs and days during which it needed more money. This assumption is supported by the dollar amount reported, which amounts to approximately 5.6 meals per week (or fewer than two days per week, assuming three meals per day), and the inclusion of food-insecure households which reported needing $0 more per week. These respondents were assumed to be responding from the perspective of a recent week, one in which they did not require additional money.

Visually, this theoretical week would then look like this:

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
With enough food	With enough food	With enough food	With enough food	With enough food	In need of food	In need of food

In addition to being food insecure only some days of any month in which they experience food insecurity, not all food-insecure households experience food insecurity every month. As reported by the USDA, in the annual report *Household Food Security in the United States*, "the average household that was food insecure at some time during the year experienced this condition in 7 months of the year." (Coleman-Jensen et al., 2018)

Visually, using the above illustration as a typical week, a sample year would look like this:



With this information, we are then able to calculate the dollar figure needed per county, per year as follows: $PPC*52*(7/12)*FI^{*}_{CS}*N_{CS}$. This calculation incorporates the number of weeks in a year (52) and the average number of months of the year in which someone experiences food insecurity (7 out of 12).

DATA

To calculate the dollars needed for a food-insecure person to meet his/her food needs, we used information from the 2017 CPS.

RESULTS

In developing the results for the amount of money needed by a food-insecure person to meet weekly food needs, we examined additional possible values, including those for (a) households experiencing food insecurity any time over the prior 12 months and (b) households experiencing food insecurity any time over the prior 30 days. We further broke this analysis down for (a) a sample of those responding "more" or "the same" to the first question above and (b) a sample of those responding "more" to the first question. Households responding "less" were included in these analyses and coded as "zero".

The value of $16.99 was selected both because it was the most conservative result and because it was the result most similar to the difference in per-person weekly food expenditures between food-secure and food-insecure households. We note that the food budget shortfall decreased between 2016 and 2017 ($17.26 - in 2017 inflation-adjusted dollars - to $16.99), and that this is the second year that this figure has decreased, following four years of increases between 2012 and 2015.

In Table 4, we present some descriptive statistics about reports of dollars needed to be food secure from the CPS. As done above, we restrict the sample to those reporting food insecurity and that they need to spend more on food. In the first column, we present results on individuals and in the second column, we present results for households. The average cost to be food secure in 2017 was $16.99 per-person, per week. When we break things down further by household size, income levels, and food-insecurity levels, the results are consistent with expectations. Namely, larger households report needing more money to be food secure than smaller households; individuals with lower incomes report needing more money to be food secure than better-off individuals; and individuals in households with higher levels of food insecurity need more money to be food secure than households with lower levels of food insecurity.

COST-OF-FOOD INDEX

METHODS

Because the amount of money needed to be food secure is established as a national average, it does not reflect the range of that figure's food-purchasing power at the local level. In order to estimate the *local* food budget shortfall, therefore, we worked with Nielsen to incorporate differences in the price of food that exist across counties in the continental U.S. To do so, Nielsen designed custom product characteristics so that UPC codes for all food items could be mapped to one of the 26 categories described in the USDA's Thrifty Food Plan (TFP). This is based on 26 categories of food items (examples include "all potato products", "fruit juices", and "whole fruits.") Each UPC-coded food item (non-food items, such as vitamins, were excluded) was assigned to one of the categories. Random-weight food items (such as loose produce or bulk grains) were not included but packaged fresh produce, such as bagged fruits and vegetables, were included. Prepared meals were categorized as a whole (rather than broken down by ingredients) and were coded to "frozen or refrigerated entrees." Processed foods, such as granola bars, cookies, etc. were coded to "sugars, sweets, and candies" or "non-whole grain breads, cereal, rice, pasta, pies, pastries, snacks, and flours," as appropriate.

The cost to purchase a market basket of these 26 categories is then calculated for each county. Sales of all items within each category were used to develop a cost-per-pound of food items in that category. Some categories, such as milk, are sold in a volume unit of measure and not in an ounces unit of measure. Volume unit of measures were converted to ounces by using "FareShare Conversion Tables" (fareshare.net/conversions-volume-to-weight.html). Each category was priced based on the pounds purchased per week as defined by the TFP for each of 26 categories by age and gender. We used the weights in pounds for purchases by males 19-50 years for this analysis. Other age/gender weights may have resulted in different total market basket costs, but are unlikely to have impacted relative pricing between counties, which was the goal of the analysis. (The TFP does have 29 categories, but three categories are weighted as 0.0 lbs. for this age/gender grouping. These include "popcorn and other whole grain snacks," "milk drinks and milk desserts," and "soft drinks, sodas, fruit drinks, and -ades (including rice beverages.)")

The methods used by Nielsen do not, in general, include all stores selling food in a county in the annual sample they use to construct the market basket described above. In counties with sufficient population size and corresponding number of stores selling food, the non-inclusion of some stores is unlikely to bias the cost of the market basket. However, in small counties, the exclusion of

some or even all stores can lead to pricing of the market basket that is not an accurate reflection of the "true cost." Along with some stores being excluded, some of the stores included may be too small to have sufficient sales of products included in the market basket. In response to these biases, for all counties with less than 20,000 persons, we ascertain the cost of a market basket that is based on the average of prices found in that county and the prices of the contiguous counties. To request a full list of counties for which cost data were imputed, please email research@feedingamerica.org.

In an effort to accurately reflect the prices paid at the register by consumers, food sales taxes are integrated into the market basket prices. County-level food taxes include all state taxes and all county taxes levied on grocery items. Within some counties, municipalities may levy additional grocery taxes. Because these taxes are not consistently applied across the county and we do not calculate food prices at the sub-county level, they are not included. Taxes on vending machine food items or prepared foods were not included, as the market baskets do not incorporate those types of foods. For state-level market basket costs, the average of the county-level food taxes was used. Twelve states levy grocery taxes. An additional six states do not levy state-level grocery taxes, but do permit counties to levy a grocery tax. Finally, an additional state does not levy state or county-level grocery taxes, but does permit municipalities to levy grocery taxes (more detail about the tax rates used can be found in Appendix D).

As suggested above, our interest is in the relative rather than the absolute price of the TFP, so using the value of the TFP (VTFP), we then calculate an index as follows: $IVTFP=VTFP_{cs}/AVTP$ where AVTP is the weighted average value of the TFP across all counties. We then create a value for the cost to alleviate food insecurity that incorporates these price differences. This is calculated for each county as $CAFI_{cs}=IVTFP_{cs}*PPC*52*(7/12)*FI_{cs}*N_{cs}$.

DATA

To calculate the differences in food costs across counties, we used information from the Nielsen Scantrack service. This includes prices paid for each UPC code in over 65,000 stores across the U.S. For all these analyses we are using data for a 4-week period in October 2016.

NATIONAL AVERAGE MEAL COST

METHODS

With the above information, we have calculated a localized food budget shortfall for all food-insecure individuals in a county area. In many situations, however, food banks have found it useful and meaningful to be able to discuss the "meals" or "meal equivalents" represented by these dollar values. In an effort to provide the necessary information to allow for this communication tool, we calculated an approximation of the number of meal equivalents represented by the county-level food budget shortfall as follows.

On CPS there is a question that asks how much a household usually spends on food in a week:

Now think about how much (you/your household) USUALLY (spend/spends). How much (do you/does your household) USUALLY spend on food at all the different places we've been talking about IN A WEEK? (Please include any purchases made with SNAP or food stamp benefits).

Restricting the sample to households that are food secure, constructing this sample on a per-person basis, and dividing by 21 (i.e., the usual number of meals a person eats), we arrive at a per-meal cost of $3.00. We restricted the sample to food-secure households to ensure that the per-meal cost was based on the experiences of those with the ability to purchase a food-secure diet.

Using this information, the number of meals needed in a county can then be calculated as $MCAFI_{cs}=(IVTFP_{cs}*PPC*52*(7/12)*FI^{*}_{cs}*N_{cs})/(IVTFP_{cs}*3.02)$.

The *Map the Meal Gap 2019* meal-cost analysis includes all observations from the sample of CPS responses to the question regarding weekly household food expenditures in the calculations of the 2017 national average and local meal cost values as in previous years of *Map the Meal Gap*. It is important to note that the "meal gap" is descriptive of a food budget shortfall, rather than a literal number of meals.

DATA

To calculate the average meal cost, we used information from the 2017 CPS.

REFERENCES

Coleman-Jensen A., M. P. Rabbitt, C. Gregory & A. Singh. *Household Food Security in the United States in 2017*. Washington DC: U.S. Department of Agriculture, Economic Research Report No. 256.

Gundersen, C. & J. Ziliak. "Food Insecurity Research in the United States: Where We Have Been and Where We Need to Go." *Applied Economic Perspectives and Policy* 40(1), 119-135. 2018.

Gundersen, C., E. Engelhard, & E. Waxman. "Map the Meal Gap: Exploring Food Insecurity at the Local Level." *Applied Economics Policy and Perspectives*, 36(3), 373-386. 2014.

TECHNICAL APPENDICES AND TABLES

APPENDIX A: SNAP AND NSLP THRESHOLDS

In order to be most useful for planning purposes, SNAP thresholds effective by January 1, 2019 were used for all states in this analysis. SNAP thresholds provided are the gross income eligibility criteria as established by the state. Applicants must meet other criteria (such as net income and asset criteria) in order to receive the SNAP benefit. Children in households receiving SNAP are categorically eligible for such programs as free National School Lunch Program (NSLP). In states with a SNAP threshold lower than 185 percent of the poverty line, persons earning between the SNAP threshold and 185 percent of the poverty line are income-eligible for other nutrition programs such as the reduced price National School Lunch Program, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), etc.

State	SNAP Threshold	Other Nutrition Program Threshold (if applicable)
AK	130%	185%
AL	130%	185%
AR	130%	185%
AZ	185%	
CA	200%	
CO	200%	
CT	185%	
DC	200%	
DE	200%	
FL	200%	
GA	130%	185%
HI	200%	
IA	160%	185%
ID	130%	185%
IL	165%	185%
IN	130%	185%
KS	130%	185%
KY	130%	185%
LA	130%	185%
MA	200%	
MD	200%	
ME	185%	
MI	200%	
MN	165%	185%
MO	130%	185%
MS	130%	185%

State	SNAP Threshold	Other Nutrition Program Threshold (if applicable)
MT	200%	
NC	200%	
ND	200%	
NE	130%	185%
NH	185%	
NJ	185%	
NM	165%	185%
NV	200%	
NY	200%	
OH	130%	185%
OK	130%	185%
OR	185%	
PA	160%	185%
RI	185%	
SC	130%	185%
SD	130%	185%
TN	130%	185%
TX	165%	185%
UT	130%	185%
VA	130%	185%
VT	185%	
WA	200%	
WI	200%	
WV	200%	
WY	130%	185%

APPENDIX B: COUNTIES WITH FOOD-INSECURITY RATE CHANGES OF 2.5 PERCENTAGE POINTS OR MORE

State	County	2016 Food-Insecurity Rate	2017 Food-Insecurity Rate	Change from 2016 to 2017	Total Population (2017)
Alabama	Conecuh	23.9%	20.9%	-3	12,649
Alabama	Wilcox	32.3%	29.3%	-3	10,919
Arkansas	Nevada	23.0%	20.2%	-2.8	8,528
Georgia	Early	23.3%	20.7%	-2.6	10,405
Mississippi	Humphreys	33.7%	30.8%	-2.9	8,678
Mississippi	Sharkey	29.3%	26.7%	-2.6	4,631
South Dakota	Jackson	18.5%	21.4%	2.9	3,275
Texas	Dimmit	7.8%	10.4%	2.6	10,822
Texas	Morris	24.8%	22.1%	-2.7	12,530

APPENDIX C: COUNTIES WITH CHILD FOOD-INSECURITY RATE CHANGES OF 4 PERCENTAGE POINTS OR MORE AND A CHILD POPULATION OF AT LEAST 1,000

State	County	2016 Child Food-Insecurity Rate	2017 Child Food-Insecurity Rate	Change from 2016 to 2017	Total Child Population (2017)
Alabama	Conecuh	30.7%	26.3%	-4.4	2,774
Alabama	Wilcox	34.8%	30.6%	-4.2	2,701
Colorado	Phillips	14.3%	10.0%	-4.3	1,078
Georgia	Echols	24.7%	20.2%	-4.5	1,140
Idaho	Valley	17.5%	13.0%	-4.5	1,861
Iowa	Davis	21.4%	17.2%	-4.2	2,576
Kentucky	Livingston	16.2%	20.2%	4	1,931
Mississippi	Chickasaw	27.1%	23.0%	-4.1	4,320
Missouri	Carter	21.6%	17.3%	-4.3	1,535
Montana	Big Horn	25.8%	30.1%	4.3	4,461
South Dakota	Jackson	24.5%	28.7%	4.2	1,004
Texas	La Salle	20.8%	16.3%	-4.5	1,579
West Virginia	McDowell	32.4%	28.2%	-4.2	3,984

APPENDIX D: FOOD TAX RATES

States not listed in this appendix do not levy grocery taxes and do not permit counties or municipalities to levy grocery taxes (with the exception of Alaska and Hawaii, as noted below). In some cases, municipalities may levy additional grocery taxes. These taxes were not included in this analysis. A full list of individual counties' rates is not provided here but is available upon request.

Twelve states levy grocery taxes. In the following three states, no additional grocery taxes are levied at the individual county level. Any additional taxes levied by municipalities were excluded from this analysis.

State	2017 Food Tax (state rate)
ID	6.0%
MS	7.0%
SD	4.5%

In the following nine states, additional grocery taxes are levied at the county or municipal level. Only those rates levied at the county and state level were incorporated into this analysis.

State	2017 Food Tax (state rate)	2017 Food Tax (weighted average of all county rates)	Total Food Tax (state + county)
AL	4.00%	1.94%	5.94%
AR	1.50%	1.33%	2.83%
IL	1.00%	0.71%	1.71%
KS	6.50%	1.13%	7.63%
MO	1.23%	1.84%	3.07%
OK	4.50%	0.70%	5.20%
TN	4.00%	2.44%	6.44%
UT	1.75%	1.25%	3.00%
VA	1.50%	1.00%	2.50%

An additional six states do not levy state-level grocery taxes but do permit counties and municipalities to levy a grocery tax.[15]

State	2017 Food Tax (state rate)	2017 Food Tax (weighted average of all county rates)
AK	0%	0.83%
CO	0%	0.24%
GA	0%	3.03%
LA	0%	2.51%
NC	0%	2.00%
SC	0%	0.70%

[15] Arizona does not levy state or county-level grocery taxes but does permit municipalities to levy grocery taxes. As a result, no taxes were factored into the food-cost index. It is worth noting, however, that additional burden may be placed on residents of municipalities in which food taxes are in effect.

Table 1: Food Insecurity Questions in the Core Food Security Module (administered in the Current Population Survey)

ASKED OF ALL HOUSEHOLDS

1. "We worried whether our food would run out before we got money to buy more." Was that **often, sometimes**, or never true for you in the last 12 months?

2. "The food that we bought just didn't last and we didn't have money to get more." Was that **often, sometimes**, or never true for you in the last 12 months?

3. "We couldn't afford to eat balanced meals." Was that **often, sometimes**, or never true for you in the last 12 months?

4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn't enough money for food? (**Yes**/No)

5. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (**Yes**/No)

6. (If yes to Question 4) How often did this happen—**almost every month, some months but not every month**, or in only 1 or 2 months?

7. In the last 12 months, were you ever hungry, but didn't eat, because you couldn't afford enough food? (**Yes**/No)

8. In the last 12 months, did you lose weight because you didn't have enough money for food? (**Yes**/No)

9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? (**Yes**/No)

10. (If yes to Question 9) How often did this happen—**almost every month, some months but not every month**, or in only 1 or 2 months?

ONLY ASKED OF HOUSEHOLDS WITH CHILDREN

11. "We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food." Was that **often, sometimes**, or never true for you in the last 12 months?

12. "We couldn't feed our children a balanced meal, because we couldn't afford that." Was that **often, sometimes**, or never true for you in the last 12 months?

13. “The children were not eating enough because we just couldn’t afford enough food.” Was that **often, sometimes**, or never true for you in the last 12 months?

14. In the last 12 months, did you ever cut the size of any of the children’s meals because there wasn’t enough money for food? (**Yes**/No)

15. In the last 12 months, were the children ever hungry but you just couldn’t afford more food? (**Yes**/No)

16. In the last 12 months, did any of the children ever skip a meal because there wasn’t enough money for food? (**Yes**/No)

17. (If yes to Question 16) How often did this happen—**almost every month, some months but not every month**, or in only 1 or 2 months?

18. In the last 12 months did any of the children ever not eat for a whole day because there wasn’t enough money for food? (**Yes**/No)

Note: Responses in bold indicate an affirmative response.

Table 2: Estimates of the Impact of Various Factors on Food Insecurity at the State Level, 2001-2017

	Full Population	<130% of the poverty line	<160% of the poverty line	<165% of the poverty line	<185% of the poverty line	<200% of the poverty line
	coefficient (s.e.)	coefficient (s.e.)	coefficient (s.e.)	coefficient (s.e.)	coefficient (s.e.)	coefficient (s.e.)
Poverty Rate	0.245**					
	(0.046)					
Unemployment Rate	0.518**	0.782**	0.776**	0.736**	0.757**	0.796**
	(0.093)	(0.268)	(0.239)	(0.236)	(0.217)	(0.201)
Median Income	-0.003					
	(0.002)					
Percent Hispanic	-0.146**	-0.259	-0.208	-0.213	-0.212	-0.167
	(0.054)	(0.190)	(0.164)	(0.165)	(0.157)	(0.145)
Percent African-American	0.109*	0.202	0.243	0.253	0.223	0.255
	(0.056)	(0.174)	(0.155)	(0.155)	(0.138)	(0.132)
Percent Homeownership	-0.085*	-0.151	-0.162	-0.179	-0.138	-0.156
	(0.034)	(0.109)	(0.093)	(0.093)	(0.086)	(0.082)
2002 (year fixed effect)	0.000	0.013	0.009	0.009	0.006	0.006
	(0.003)	(0.012)	(0.011)	(0.011)	(0.010)	(0.009)
2003 (year fixed effect)	0.004	0.019	0.017	0.018	0.017	0.014
	(0.004)	(0.015)	(0.013)	(0.013)	(0.013)	(0.011)
2004 (year fixed effect)	0.014**	0.033*	0.030**	0.029**	0.005	0.026**
	(0.004)	(0.013)	(0.011)	(0.011)	(0.011)	(0.009)
2005 (year fixed effect)	0.010*	0.028*	0.022	0.018	-0.006	0.016
	(0.004)	(0.013)	(0.012)	(0.012)	(0.010)	(0.009)
2006 (year fixed effect)	0.015**	0.036**	0.031**	0.031**	0.003	0.027**
	(0.003)	(0.012)	(0.010)	(0.010)	(0.010)	(0.008)
2007 (year fixed effect)	0.021**	0.027*	0.045**	0.045**	0.018*	0.041**
	(0.004)	(0.013)	(0.011)	(0.011)	(0.010)	(0.009)
2008 (year fixed effect)	0.042**	0.066**	0.069**	0.059**	0.058**	0.069**
	(0.004)	(0.012)	(0.010)	(0.011)	(0.011)	(0.010)

2009 (year fixed effect)	0.027**	0.045**	0.050**	0.041**	0.041**	0.050**
	(0.005)	(0.015)	(0.014)	(0.014)	(0.013)	(0.012)
2010 (year fixed effect)	0.022**	0.022	0.026	0.028*	0.026*	0.036**
	(0.006)	(0.016)	(0.014)	(0.014)	(0.013)	(0.012)
2011 (year fixed effect)	0.021**	0.039**	0.042**	0.042**	0.042**	0.041**
	(0.005)	(0.015)	(0.014)	(0.014)	(0.013)	(0.011)
2012 (year fixed effect)	0.023**	0.055**	0.049**	0.048**	0.038**	0.045**
	(0.005)	(0.014)	(0.012)	(0.012)	(0.012)	(0.010)
2013 (year fixed effect)	0.026**	0.065**	0.055**	0.056**	0.046**	0.054**
	(0.005)	(0.013)	(0.012)	(0.012)	(0.012)	(0.010)
2014 (year fixed effect)	0.030**	0.060**	0.056**	0.056**	0.052**	0.057**
	(0.005)	(0.014)	(0.012)	(0.012)	(0.012)	(0.011)
2015 (year fixed effect)	0.027**	0.063**	0.058**	0.057**	0.050**	0.053**
	(0.005)	(0.014)	(0.011)	(0.011)	(0.011)	(0.010)
2016 (year fixed effect)	0.024**	0.054**	0.051**	0.051**	0.030**	0.047**
	(0.005)	(0.014)	(0.012)	(0.012)	(0.011)	(0.010)
2017 (year fixed effect)	0.024**	0.045**	0.045**	0.043**	0.022	0.042**
	(0.005)	(0.014)	(0.012)	(0.012)	(0.011)	(0.010)
Constant	0.123**	0.406**	0.382**	0.395**	0.359**	0.345**
	(0.028)	(0.080)	(0.069)	(0.070)	(0.064)	(0.061)

* $p<0.05$ ** $p<0.01$. The omitted year for the year fixed effects is 2001. The data used is taken from the December Supplements of the 2001-2017 Current Population Survey.

Table 3: Estimates of the Impact of Various Factors on Child Food Insecurity at the State Level, 2001-2017

	Full Population	<185% of the poverty line
	coefficient (s.e.)	coefficient (s.e.)
Poverty Rate	0.262**	
	(0.056)	
Unemployment Rate	0.813**	1.265**
	(0.176)	(0.296)
Median Income	-0.002	
	(0.002)	
Percent Hispanic	-0.060	-0.171
	(0.054)	(0.108)
Percent African-American	-0.032	-0.124
	(0.061)	(0.113)
Percent Homeownership	-0.018	0.043
	(0.043)	(0.080)
2002 (year fixed effect)	-0.005	-0.028
	(0.008)	(0.015)
2003 (year fixed effect)	-0.000	-0.023
	(0.009)	(0.020)
2004 (year fixed effect)	0.007	-0.016
	(0.009)	(0.018)
2005 (year fixed effect)	-0.005	-0.034*
	(0.008)	(0.016)
2006 (year fixed effect)	0.001	-0.018
	(0.008)	(0.016)
2007 (year fixed effect)	0.007	-0.021
	(0.008)	(0.016)
2008 (year fixed effect)	0.044**	0.025
	(0.008)	(0.015)
2009 (year fixed effect)	0.021*	-0.012
	(0.011)	(0.019)
2010 (year fixed effect)	-0.005	-0.049*
	(0.011)	(0.020)
2011 (year fixed effect)	-0.005	-0.031
	(0.011)	(0.020)
2012 (year fixed effect)	0.005	-0.017
	(0.010)	(0.018)
2013 (year fixed effect)	0.012	0.007
	(0.010)	(0.019)
2014 (year fixed effect)	0.012	-0.008

	(0.010)	(0.017)
2015 (year fixed effect)	-0.000	-0.016
	(0.009)	(0.017)
2016 (year fixed effect)	-0.010	-0.030
	(0.009)	(0.016)
2017 (year fixed effect)	-0.004	-0.030
	(0.010)	(0.018)
Constant	0.120**	0.292**
	(0.038)	(0.064)

* $p<0.05$ ** $p<0.01$. The omitted year for the year fixed effects is 2001. The data used are taken from the December Supplements of the 2001-2017 Current Population Survey.

Table 4: Breakdowns of Weekly Cost to be Food Secure (in $) in 2017

	Individuals	Households
All Food Insecure	$16.99	
By Household Size		
1 person		$25.64
2 person		$33.07
3 person		$38.44
4 person		$41.98
5 person		$43.02
6 person		$52.47
By Income Categories		
<130% of poverty line	$18.39	
>130% of poverty line	$15.29	
<185% of poverty line	$18.31	
>185% of poverty line	$14.45	
By food security status		
Marginally food secure	$7.40	
Low food secure	$12.20	
Very low food secure	$24.73	

The data used are taken from the December Supplement of the 2017 Current Population Survey.

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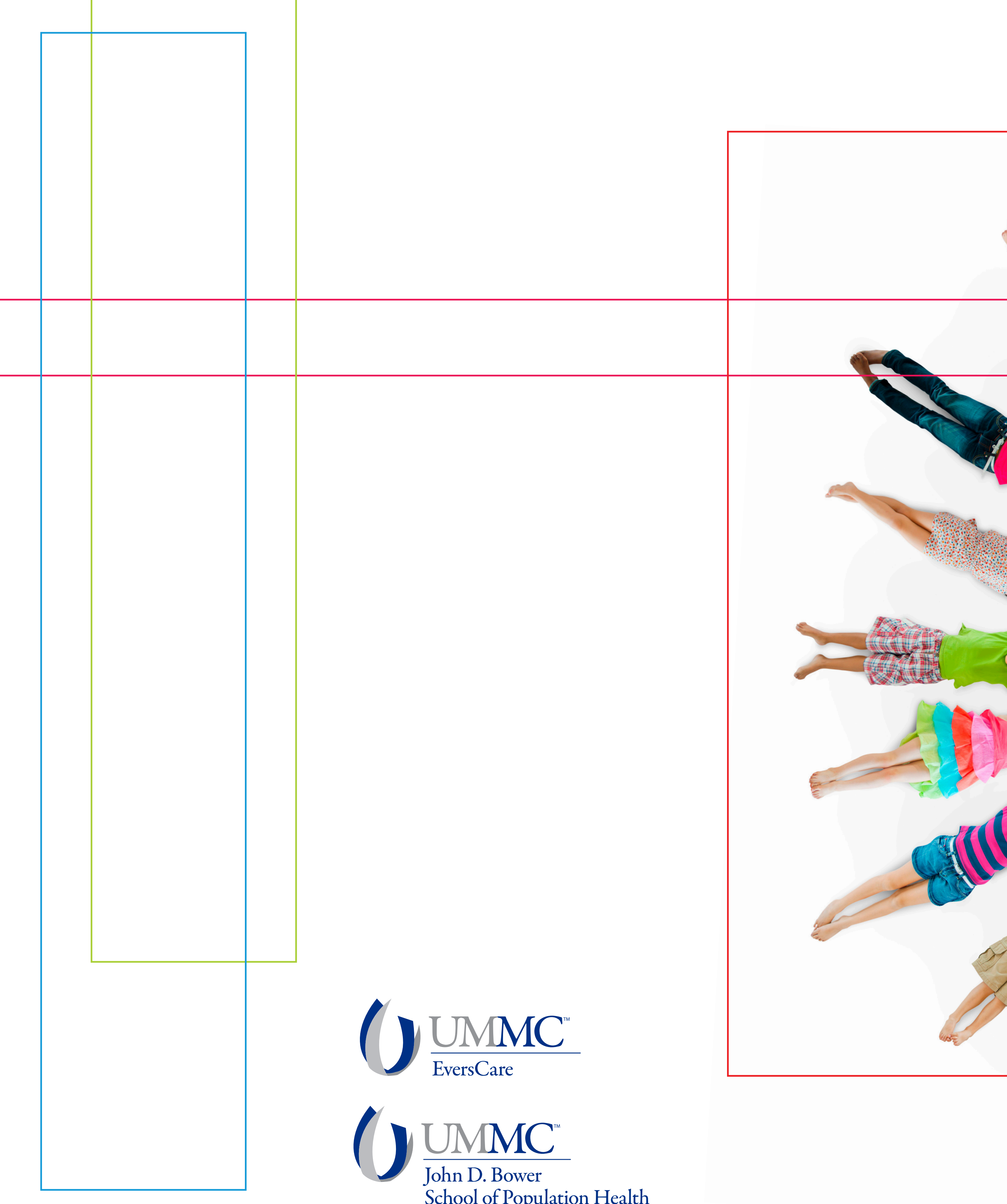

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