2022 Community Health Needs Assessment

North Mississippi

Baptist Memorial Hospital–Booneville • Baptist Memorial Hospital–Calhoun
Baptist Memorial Hospital–Golden Triangle • Baptist Memorial Hospital–
North Mississippi • Baptist Memorial Hospital–Union County

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Our Commitment to Community Health

Baptist Memorial Health Care (Baptist) is dedicated to the health and well-being of the many communities we serve across the Mid-South. We believe strongly in corporate citizenship and the importance of collaboration with local organizations to build stronger and healthier communities.

To help us track community health and identify emerging concerns, we conduct a Community Health Needs Assessment (CHNA) every three years. We use this comprehensive study to ensure our initiatives, activities and partnerships align with community needs.

Some of our key initiatives are listed below.

Providing access to high-quality health care
We ensure residents can receive care when they need it across the region. We reinvest resources in technology to bring the highest level of health care to people across the Mid-South. We invest in hospitals and health services to deliver care to communities the federal government considers as Medically Underserved Areas or Health Professional Shortage Areas. We extend our care through community clinics and mobile services to reach people who might not otherwise receive care. We subsidize services, such as emergency care, free and reduced services for the uninsured and preventive screenings that are essential for health, but not adequately covered by federal and state funding.

Developing community partnerships
We recognize that our hospitals are vital organizations within the communities we serve. And we know that we cannot address every community need by ourselves. To promote health and quality of life, we collaborate with community partners who have expertise in social needs, specialty services, faith leadership, advocacy and essential resources. We foster ongoing relationships with these partners and provide financial and in-kind gifts to support their work.

Investing in health care education and research
We support excellence in health care training and education through programs that focus on math, science and related subjects to prepare tomorrow's health care workforce. As we plan for the future, we provide training opportunities for emerging health care professionals and encourage students to pursue medicine, nursing and other allied health careers. Through leading-edge research and clinical trials, we help to advance learning in the medical field and develop new treatments for cancer and other diseases.

In these and many other ways, we demonstrate our commitment to the people we serve and our communities. In undertaking and funding regular community health needs assessments, we ensure our hospitals will be stronger partners in our neighborhoods and prepared to meet the future needs of all those who live there.

Overview of the 2022 CHNA

Systemwide Approach to Community Health Improvement

Baptist Memorial Health Care has 22 affiliate hospitals serving residents in three states. The CHNA focused on the primary service county of each Baptist Memorial hospital to identify health trends and unique disparities within these communities. Hospitals with overlapping service areas were grouped into regions for comparisons of health and socio-economic data. Systemwide priorities were determined to address common health needs across the Mid-South. Specific strategies were outlined in each hospital's implementation plan to guide local efforts and collaboration with community partners.

2022 CHNA Geographic Regions and Primary Service Areas

Region	Primary Service Counties	Hospitals
Memphis Metro	Shelby and Fayette counties, TN	Baptist Memorial Hospital–Memphis Baptist Memorial Hospital–Collierville Baptist Memorial Hospital for Women Baptist Memorial Rehabilitation Hospital Baptist Memorial Restorative Care Hospital Crestwyn Behavioral Health Spence and Becky Wilson Baptist Children's Hospital
	Tipton County, TN	Baptist Memorial Hospital–Tipton
	DeSoto County, MS	Baptist Memorial Hospital–DeSoto
Northeast Arkansas	Craighead and Poinsett counties, AR	NEA Baptist Memorial Hospital
	Crittenden County, AR	Baptist Memorial Hospital–Crittenden
West Tennessee	Carroll County, TN	Baptist Memorial Hospital–Carroll County
	Obion County, TN	Baptist Memorial Hospital–Union City
North Mississippi	Lafayette and Panola counties, MS	Baptist Memorial Hospital–North Mississippi
	Benton and Union counties, MS	Baptist Memorial Hospital–Union County
	Prentiss County, MS	Baptist Memorial Hospital–Booneville
	Lowndes County, MS	Baptist Memorial Hospital–Golden Triangle
	Calhoun County, MS	Baptist Memorial Hospital–Calhoun
Central Mississippi	Attala, Hinds, Leake, Madison, Rankin and Yazoo counties, MS	Baptist Memorial Hospital–Mississippi Baptist Medical Center
	Attala County, MS	Baptist Memorial Hospital–Attala
	Leake County, MS	Baptist Memorial Hospital–Leake
	Yazoo County, MS	Baptist Memorial Hospital–Yazoo

CHNA Leadership

A Baptist Memorial Health Care steering committee, along with community representatives and partners, oversaw the 2022 CHNA. These individuals served as liaisons to their organizations and the communities served by their entities.

2022 CHNA Steering Committee Members

Donna Baugus; Survey Research Manager

Cynthia Bradford; System Community Involvement Manager

Abby Brann; System Community Involvement Coordinator

David Garrison; System Finance Director

Tom Gladney; Data Management and Decision Support Director

Bill Griffin; Executive Vice President and Chief Financial Officer

Caitlin Hayden; System Senior Community Involvement Coordinator

Kelley Jerome; Internal Audits Manager

Briana Jegier, PhD; Program Chair & Associate Professor, Baptist Health Sciences University

Taylor Jones; Strategic Planning Data Analyst

Saju Joy, MD; Senior Vice President and Chief Medical Officer

Jeff Lann; Research and Marketing Development Manager

Michelle McDonald, PhD; Dean of General Education and Health Studies, Baptist Health Sciences University

Jim Messineo; Revenue and Operations Audits Director

Keith Norman, DMin; Vice President, Chief Government Affairs and Community Relations Officer

Shivani Patel; Health Services Research Intern

Anne Sullivan, MD; Chief Quality and Academic Officer

Kimmie Vaulx; System Corporate Communications Director

Ann Marie Wallace; System Senior Community Involvement Coordinator

Nicholas Weaver; System Community Involvement Coordinator

Baptist partnered with Community Research Consulting (CRC) to conduct the CHNA. CRC is a woman-owned business that specializes in conducting stakeholder research to illuminate disparities and underlying inequities and transform data into practical and impactful strategies to advance health and social equity. Our interdisciplinary team of researchers and planners have worked with hundreds of health and human service providers and their partners to reimagine policies and achieve measurable impact. Learn more about our work at buildcommunity.com.

Community Research Consulting LLC

Methodology and Community Engagement

The 2022 CHNA was conducted from July 2021 to August 2022 and included quantitative and qualitative research methods to determine health trends and disparities affecting service area residents. Through a comprehensive view of statistical health indicators and community stakeholder feedback, a profile of priority areas was determined. The findings will guide health care services and health improvement efforts, as well as serve as a community resource for grant making and advocacy, and support the many programs provided by health and social service partners.

Community engagement was an integral part of the 2022 CHNA. In assessing community health needs, input was solicited and received from persons who represent the broad interests of the community, as well as underserved, low-income and minority populations. These individuals provided wide perspectives on health trends, expertise about existing community resources available to meet those needs and insights into service delivery gaps that contribute to health disparities and inequities.

Baptist sought to engage individuals and communities historically underrepresented and underserved by health care services to illuminate diverse perspectives on community needs and inform community health improvement strategy. Consumer interviews and focus groups were hosted across the Baptist service areas with the goal of garnering stakeholder feedback and recommendations to improve health and the health care experience by addressing access to care challenges and underlying social determinants of health and inequities. This feedback is reflected in Baptist's approach to defining the 2022-25 priority areas and developing each hospital Community Health Improvement Plan (CHIP).

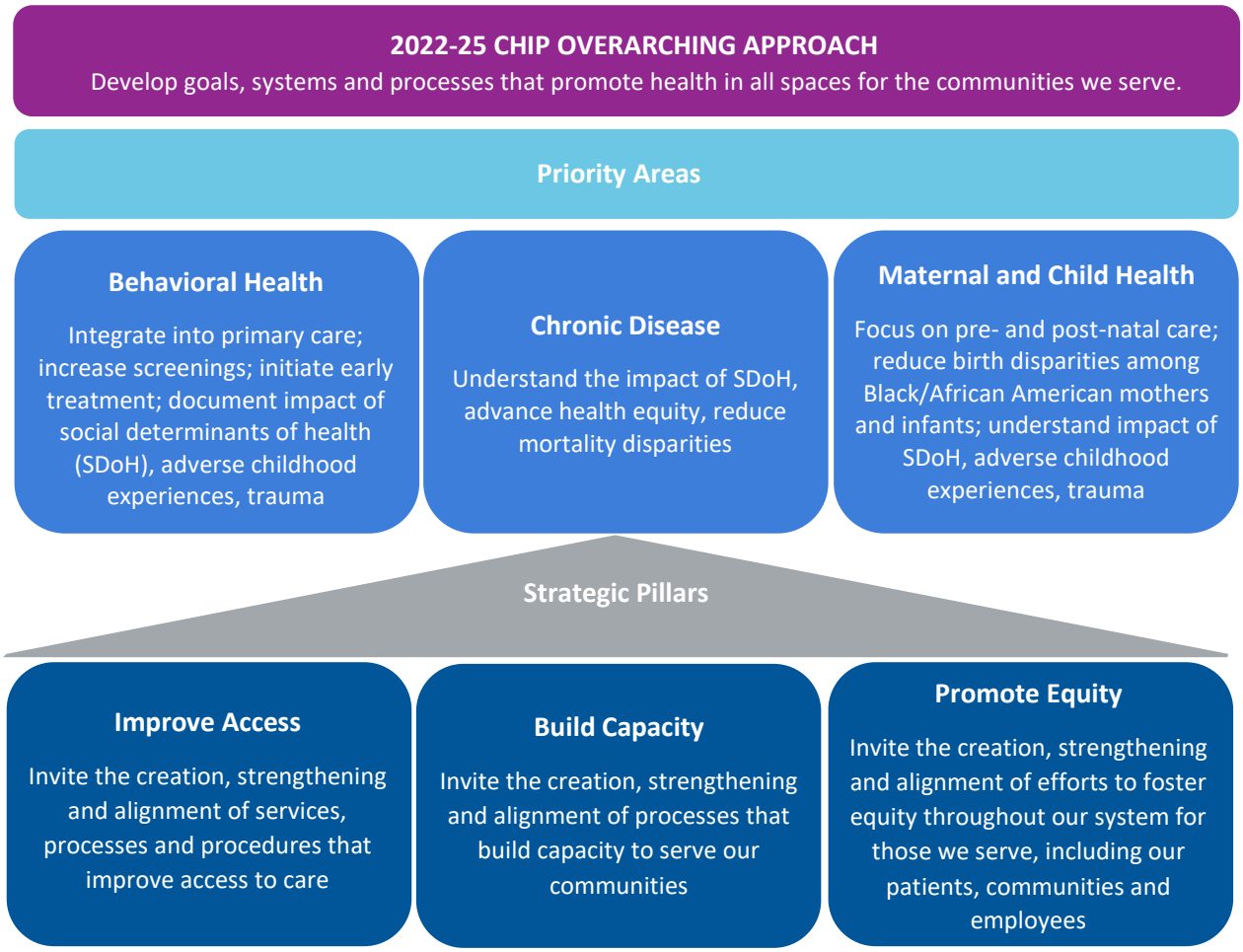
The following research methods were used to determine community health needs:

- Analysis of existing secondary data sources, including public health statistics, demographic and social measures and health care utilization
- Key Informant Surveys to assess perceived health priorities, perspectives on emerging health trends and recommendations to advance community health improvement
- Patient Access to Care and Services Survey to understand health care providers' perspectives on barriers to care, the impact of social determinants of health, cultural competencies and other factors that impede optimal outcomes for patients
- Consumer interviews and focus groups with individuals representing Black, Indigenous and People of Color (BIPOC) and other populations historically underserved by health care services to inform community health improvement strategy

Community Health Priorities

It is imperative to prioritize resources and activities toward the most pressing and cross-cutting health needs within our community. In determining the issues on which to focus efforts over the next three-year cycle, Baptist collected feedback from community partners and sought to align with community programs, population health management strategies and diversity, equity and inclusion initiatives.

In defining the 2022-25 priority areas and developing hospital CHIPs, Baptist outlined an overarching approach that promotes health in all spaces for the communities they serve and centers health equity strategies. The approach is illustrated in the graphic below.



Board Approval

The 2022 CHNA was conducted in a timeline to comply with IRS Tax Code 501(r) requirements to conduct a CHNA every three years as set forth by the Affordable Care Act (ACA). The research findings will be used to guide community benefit initiatives for the collaborating Baptist hospitals and to engage local partners to collectively address identified health needs.

Baptist is committed to advancing initiatives and community collaboration to support the issues identified through the CHNA. The 2022 CHNA report was presented to the Baptist Board of Directors and approved in September 2022.

Following the board's approval, the CHNA report was made available to the public via the Baptist website at baptistonline.org/about/chna.

Baptist North Mississippi Service Area Description

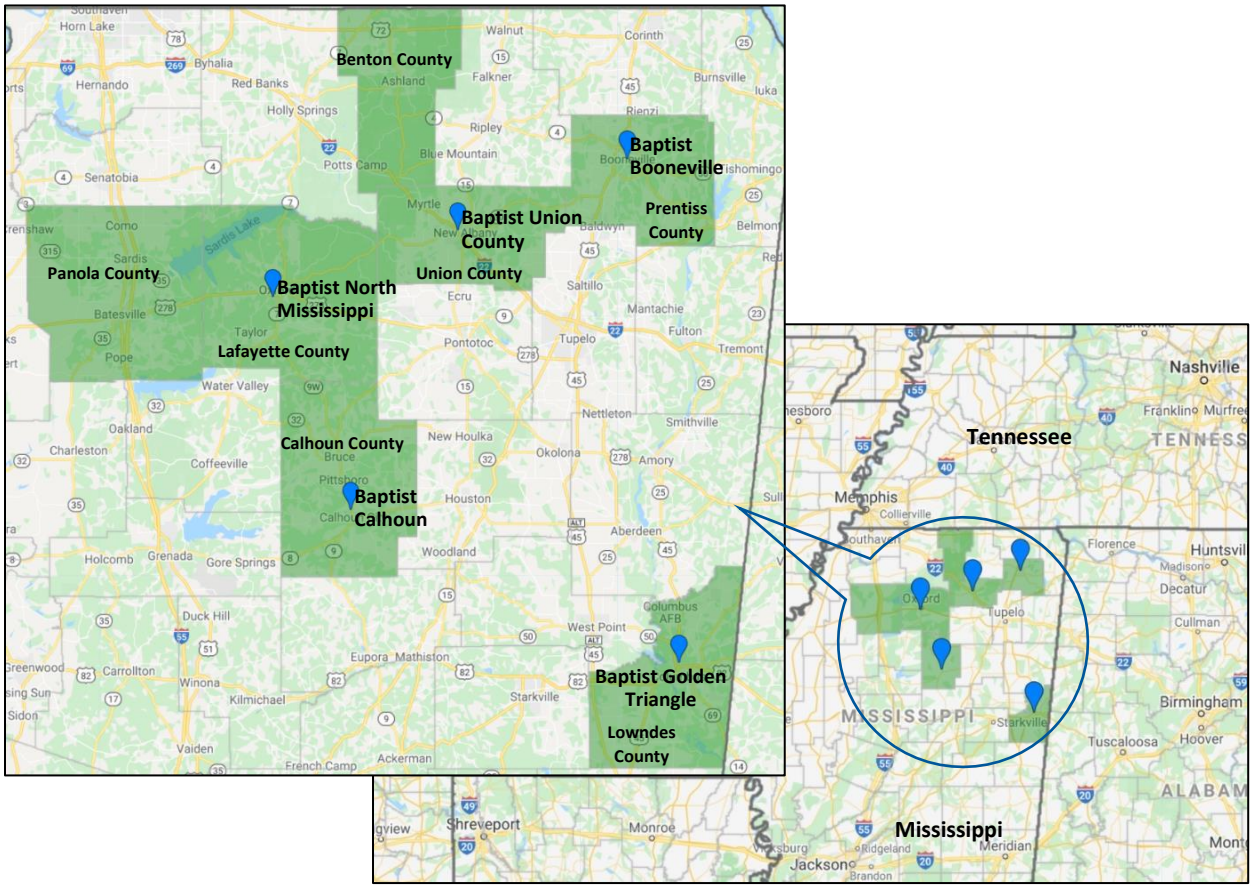
Baptist has 22 affiliate hospitals serving residents in three states. For purposes of the CHNA, Baptist focused on the primary service county(ies) of each of its not-for-profit hospitals to identify health trends and unique disparities within these communities. Hospitals with overlapping service areas were grouped into regions for comparisons of health and socio-economic data.

Baptist Memorial Health Care has five hospitals in the North Mississippi service area, which collaborated on the 2022 CHNA. The study encompassed Benton, Calhoun, Lafayette, Lowndes, Panola, Prentiss and Union counties in Mississippi. Select data for service area ZIP codes are also shown throughout the report.

The following hospitals participated in the 2022 CHNA for the North Mississippi service area.

- Baptist Memorial Hospital-Booneville (Baptist Booneville)
- Baptist Memorial Hospital-Calhoun (Baptist Calhoun)
- Baptist Memorial Hospital-Golden Triangle (Baptist Golden Triangle)
- Baptist Memorial Hospital-North Mississippi (Baptist North Mississippi)
- Baptist Memorial Hospital-Union County (Baptist Union County)

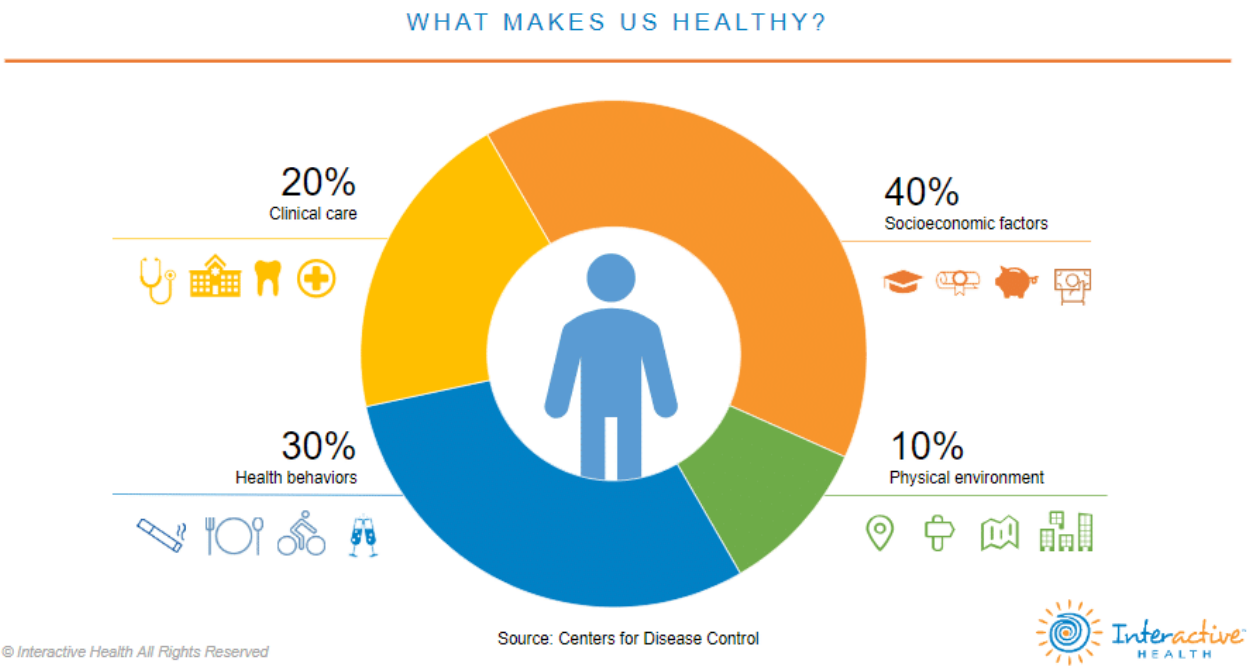
Baptist North Mississippi Service Area



Social Determinants of Health: The connection between our communities and our health

Social determinants of health (SDoH) are the conditions in the environments where people are born, live, learn, work, play, worship and age that affect a wide range of health risks and outcomes. Healthy People 2030, the national benchmark of the United States (U.S.) Centers for Disease Control and Prevention (CDC) for health, recognizes SDoH as central to its framework, naming "social and physical environments that promote good health for all" as one of the four overarching goals for the decade. Healthy People 2030 outlines five key areas of SDoH: economic stability, education access and quality, health care access and quality, neighborhood and built environment and social and community context.

The mix of ingredients that influence each person's overall health profile include individual behaviors, clinical care, environmental factors and social circumstance. While health improvement efforts have historically targeted health behaviors and clinical care, public health agencies, including the U.S. Centers for Disease Control, widely hold that at least **50% of a person's health profile is determined by SDoH.**



Addressing SDoH is a primary approach to achieving *health equity.* Health equity encompasses a wide range of social, economic and health measures but can be simply defined as "a fair opportunity for every person to be as healthy as possible." In order to achieve health equity, we need to look beyond the health care system to dismantle systematic inequities born through racism and discrimination like power and wealth distribution, education attainment, job opportunities, housing and safe environments, to build a healthier community for all people now and in the future.

Understanding Health Equity

Social determinants of health are in part responsible for the unequal and avoidable differences in health status within and between communities. In the North Mississippi service area some of these inequities fall along lines of race, particularly affecting Black/African American communities. As the CDC notes, throughout the U.S. centuries of racism have had a profound impact on communities of color, and this impact creates "inequities in access to a range of social and economic benefits—such as housing, education, wealth and employment. These conditions—often referred to as social determinants of health—are key drivers of health inequities within communities of color, placing those within these populations at greater risk for poor health outcomes."

Through understanding the obstacles to health equity and how those obstacles create disparate outcomes, such as decreased average life expectancy, community partners can plan strategically to decrease health care barriers and improve health outcomes.

A key SDoH metric is poverty. Overall poverty declined across Mississippi and much of the North Mississippi service area since the 2019 CHNA, but economic indicators continue to vary widely by population. Nationally, 11% of white people live in poverty compared to 23% of Black/African American people. In Mississippi, the poverty rate for both groups is elevated, and the gap is significantly larger, with 13% of white residents living in poverty compared to 32% of Black/African American residents.

Within the North Mississippi service area, an example of SDoH inequities is seen in Lowndes County and Columbus ZIP code 39701. Lowndes County overall has a similar median household income as Lafayette County, an area of predominant wealth, but poverty that is more similar to areas with lower overall income. This finding is largely due to wealth disparities, primarily affecting Black/African American people. The median household income for Black/African American residents living in Lowndes County is less than half the income for white residents living in the same community, and the poverty rate is more than three times as high. This disparity is more pronounced in ZIP code 39701, where the median income for Black/African American people is less than one-quarter the income for white people and poverty is more than four times as high.

Socio-economic inequities within the North Mississippi service area correlate with differences in life expectancy. For example, the downtown portion of Columbus with the highest poverty rate and representing a majority Black/African American community, has the lowest life expectancy in Lowndes County of 71 years, compared to a countywide average of 74.6 years. Similar inequities are seen throughout the service area, as demonstrated in the tables and map below.

Examples of Inequity within the North Mississippi Service Area

	Lowndes County			Columbus ZIP Code 39701		
	Overall	White	Black	Overall	White	Black
Median Income	$50,441	$70,656	$27,897	$32,471	$85,407	$19,092
Poverty	20.4%	9.1%	34.8%	29.0%	8.6%	39.5%
Uninsured	12.0%	8.7%	16.0%	17.2%	12.1%	19.9%

Source: U.S. Census Bureau, American Community Survey, 2015-2019

Key Social Determinants of Health Metrics by County and Race

	People in Poverty		Adults with a Bachelor's Degree		People without Health Insurance	
	White	Black	White	Black	White	Black
Benton County	16.5%	22.9%	14.8%	6.0%	16.4%	9.1%
Calhoun County	16.6%	26.2%	14.4%	6.2%	11.5%	9.0%
Lafayette County	18.9%	31.4%	52.5%	25.4%	7.7%	10.2%
Lowndes County	9.1%	34.8%	30.7%	13.5%	8.7%	16.0%
Panola County	11.3%	28.2%	17.0%	11.9%	13.5%	13.1%
Prentiss County	19.8%	34.0%	13.8%	3.9%	11.4%	19.5%
Union County	13.5%	22.8%	14.2%	7.6%	9.7%	11.8%

Source: U.S. Census Bureau, American Community Survey, 2015-2019

Average Life Expectancy by County and Race

	Overall Life Expectancy	White Life Expectancy	Black Life Expectancy	Difference (White – Black)
Benton County	73.5	73.5	72.5	-1.0
Calhoun County	75.4	76.4	72.5	-3.9
Lafayette County	78.1	79.2	74.9	-4.3
Lowndes County	74.6	75.5	72.9	-2.6
Panola County	73.4	74.4	72.3	-2.1
Prentiss County	74.0	73.8	76.1	+2.3
Union County	76.2	76.2	75.1	-1.1

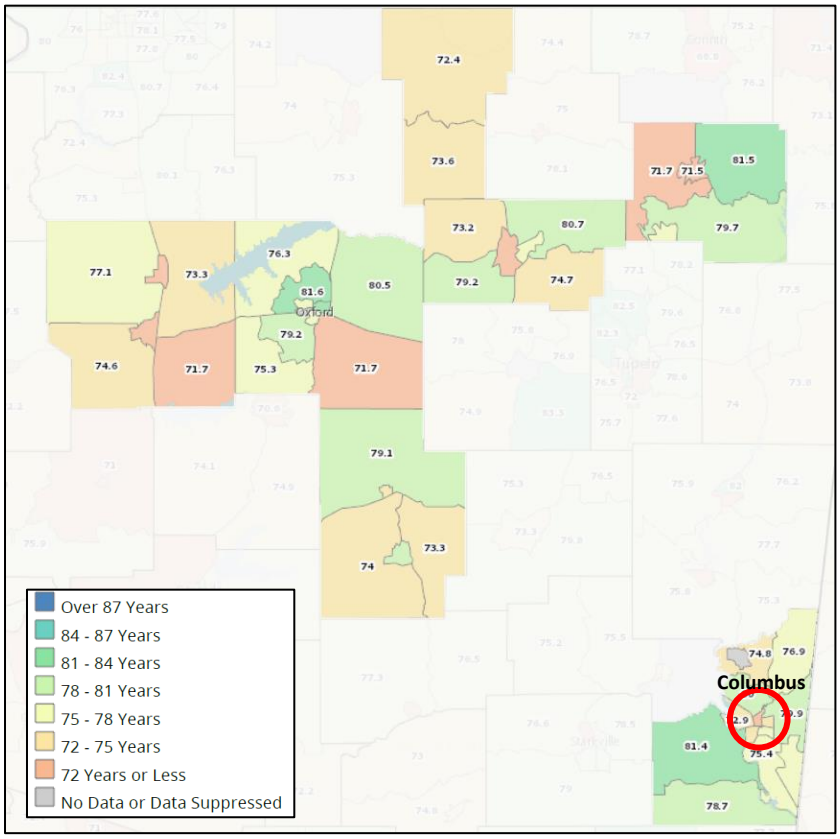
Source: National Vital Statistics System, 2017-2019

Areas of Socio-Economic Disparity within the North Mississippi Service Area and Disproportionate Impact on Communities of Color

ZIP Code	People in Poverty	Adults Not Completing High School	People without Health Insurance	Racial Composition	
				Black	White
39701, Columbus	29.0%	19.8%	17.2%	64.7%	33.4%
38601, Abbeville	16.4%	10.9%	9.7%	41.8%	54.1%
38619, Como	41.4%	21.5%	14.7%	55.4%	38.3%
38621, Crenshaw	41.9%	22.3%	15.2%	75.0%	23.3%
38666, Sardis	24.7%	21.8%	14.6%	54.7%	44.7%
US Benchmark	13.4%	12.0%	8.8%	12.7%	72.5%

Source: U.S. Census Bureau, American Community Survey, 2015-2019

Average Life Expectancy by Census Tract



As part of the 2022 CHNA, a Patient Access to Care and Services Survey was conducted among health care providers and support staff across the Baptist regions. The survey findings demonstrated how SDoH impact clinical care and ultimately health outcomes.

Among respondents serving the North Mississippi service area, nearly 53% "agreed" or "strongly agreed" that SDoH negatively impacted the health of patients and families they serve, and 62% "agreed" or "strongly agreed" that the COVID-19 pandemic negatively impacted health due to delayed preventive or maintenance care. Similarly, approximately 58% of participants "agreed" or "strongly agreed" that the pandemic exacerbated the negative impact of SDoH.

Survey participants across the Baptist regions indicated awareness of the impact of SDoH, but pointed to a lack of resources as a limitation in responding to these issues, as indicated in the following comments:

> *"We do not screen because we do not currently have resources to refer and follow up with patients. However, we GREATLY need to implement screening and referral practices in our specialty clinic. SDoH impacts our patients in all aspects of life and chronic illness management."*
>
> *"We have very scarce resources to help our very underserved patients."*
>
> *"We cannot impact the patients' socio-economic status, nor provide transportation when they have none. All we can do is treat them with respect and dignity while we have them here."*

Several North Mississippi service area providers shared specific cases in which the SDoH impacted patients. For example:

> *"Due to certain discriminating factors, patients delay accessing health care system and get diagnosed later, patients lacking reliable transportation don't receive treatments on time and this effects patient's prognosis."*
>
> *"Many staff in the community in which I work have strong faith-based opinions about the immorality of LGBTQ lifestyle. Although I have not personally seen it impact patient care, I cannot help but think that this strong an unconscious bias would likely do so."*
>
> *"Patient had a Stage 4 cancer, unable to work, spouse was breadwinner, and he was unable to work due to taking care of patient. Home health services were provided but only offer limited services. There were issues with transportation and supplies and patient's insurance was very limited. This causes frequent ER visits to address problems that could have been managed at home with the appropriate resources."*
>
> *"We started seeing a female patient in her 40s about 2 years ago. She has a low literacy level, and she has had problems navigating the health care system. We have tried to help her as much as possible, but we have limited resources. She is on charity care, and she is unable to afford many of the meds that we have prescribed (even though we have tried to do the lowest cost meds available and helped her fill out numerous drug company assistance forms). Her chronic conditions have been uncontrolled since we started seeing her leading to multiple hospital admissions. Sadly, her conditions have progressed to the point where there is not much left to be done. She was admitted to the hospital within the past 2 weeks, and she was discharged home on hospice."*

Collectively, SDoH were identified as the top clinical service gap by survey participants across the Baptist regions. Among the top identified needs was transportation, followed by insurance coverage and economic security. Insurance coverage included both access or insured status and affordable coverage (e.g., copays). Economic security included income or financial support and job opportunities.

COVID-19 Demonstrated Inequities

The COVID-19 pandemic both highlighted and deepened socio-economic and health inequities. According to the Community Vulnerability Index developed by Surgo Ventures, Calhoun, Lowndes and Panola counties were considered more vulnerable to COVID-19 than 90% to 95% of other U.S. counties. Prentiss and Union counties also had high vulnerability and were considered more vulnerable than 77% to 78% of other U.S. counties. Among the factors impacting these findings were unemployment and financial insecurity, older age and underlying health issues, crowded living and working areas (e.g., nursing homes, factories) and housing and transportation challenges.

By the end of 2020, average national unemployment was double what it was at the beginning of the year. Within the North Mississippi service area, all counties saw an increase in unemployment in 2020. Of note, Lowndes and Panola counties saw the largest increases in unemployment and have been among the slowest to recover, as indicated by July 2021 unemployment percentages that were nearly 2 points higher than pre-pandemic levels.

As of Sept. 22, 2021, the North Mississippi service area had a combined 39,108 COVID-19 cases and 677 related deaths. In comparison to the state, all service area counties except Lafayette had a higher case rate; Benton and Panola counties also had a higher death rate. Higher COVID-19 incidence and death rates in Benton and Panola counties may reflect access to care barriers and lower vaccination rates. Both counties have among the lowest health care provider availability in the service area.

As part of the Key Informant Survey, 91 community representatives serving the North Mississippi service area provided their feedback on a wide range of health and social needs and opportunities. Among respondents, nearly 90% “agreed” or “strongly agreed” that COVID-19 had a negative impact on the health and well-being of the people their organization served. When asked to provide recommendations on how community organizations can better serve priority populations in light of COVID-19 and demonstrated societal inequities, respondents provided the following select comments:

> *“By trying to serve people where they are/in their community. Include them in the conversation. Designate seats on the governing board or community advisory board.”*
>
> *“Education of providers and nurses on this before they come into contact with patients.”*
>
> *“Have a diverse workforce so that patients see people like them. Reach out to organizations that serve these populations, be present in events that spread awareness of these populations and the struggles they face.”*
>
> *“Help with better coordination of care, access to pharmaceuticals, good housing, better transportation, reliable internet access, mental health services.”*
>
> *“Poverty is at the core of the issues in serving all populations. Funds to cover health care - whether for the uninsured or the insured with high deductibles - is critical. As are Saturday and evening hours. When people work for low hourly wages, they rarely have PTO and often have no mechanism to replace the income they have lost by "visiting the doctor". When one’s focus is keeping a roof over head and at least some food in pantry and the lights on, health care unless an emergency or unbearable pain is not a realistic option. Organizations that understand poverty and the choices it forces people to make can make better decisions in how to serve that population.”*

Our Community

Population Trends/Changes

Since 2010, Mississippi saw population decline of -0.2% compared to overall national population growth of +7.4%. In line with the state, all North Mississippi service area counties except Lafayette and Union also saw population decline. Population growth within Lafayette County was more than double the national growth percentage, contributing to overall service area population growth of +3,659 residents.

Health needs change as individuals age. Therefore, the age distribution of a community impacts its social and health care needs. The proportion of older adult residents increased across Mississippi and the nation and in all North Mississippi service area counties. This finding suggests health needs and support services for older adults will likely continue to grow in coming years. Within the service area, Benton and Calhoun counties have an older demographic with a higher median age than the state and proportionately more adults age 55 or older. While the older adult population increased across the service area, youth under age 18 comprise approximately 1 in 4 residents in nearly all counties.

Across the service area, representation of racial and ethnic groups other than white and Black/African American is generally consistent with the state and lower than the nation. Mississippi is home to more Black/African American residents than the U.S. overall, and within the North Mississippi service area, Panola and Lowndes county populations comprise approximately 45% Black/African American residents. Lafayette, Prentiss and Union counties are less diverse than the state with 70% or more of residents identifying as white.

Racial and ethnic diversity is increasing nationally and across the North Mississippi service area, particularly for Asian, other race, multiracial and Latinx groups. The multiracial population increased approximately 200% or more from the 2010 Census in all reported counties, Mississippi and the nation.

Socio-Economic Trends

Poverty levels declined across Mississippi and most North Mississippi service area counties over the past decade, but the state overall continues to have lower median incomes and higher poverty than the nation. Economic indicators vary widely across service area counties, representing areas of both wealth and poverty. Consistent with the 2019 CHNA, Lafayette County has a higher median household income than the state and lower poverty than both the state and nation when excluding university students. Union County also reports stronger economics, with a similar median household income as the state and poverty levels that are more consistent with the nation. Overall poverty levels in other service area counties generally align with state trends, affecting approximately 20% of all residents. Of note, Calhoun and Prentiss counties report higher childhood poverty, affecting approximately one-third of children.

COVID-19 had a profound impact on economic security, particularly for children, and as demonstrated in projected food insecurity rates. From 2019 to 2020, the percentage of food insecure children was projected to increase nearly 3 percentage points across Mississippi. Child food insecurity also increased in all North Mississippi service area counties. Consistent with unemployment trends, Lowndes and Panola counties saw the largest increases in child food insecurity of more than 4 percentage points.

Union County also saw similarly high increases in food insecurity in 2020 as Lowndes and Panola counties, and smaller declines in projected food insecurity in 2021.

Mississippi has fewer primary care providers than the nation, as indicated by the rate of providers per 100,000. Within the North Mississippi service area, all counties have a lower primary care provider rate than the nation, and all counties except Lafayette have a lower provider rate than the state. Benton, Calhoun, Panola, Prentiss and Union counties, representing a population of over 105,000, are served by a total of 34 physicians. Benton, Calhoun and Panola counties are designated as High Needs Health Professional Shortage Areas (HPSA). Union County is a HPSA for low-income individuals. High Needs HPSAs are areas with higher poverty, higher prevalence of substance use and/or more vulnerable populations like youth and older adults.

Rural Health Challenges

Much of the North Mississippi service area is rural, with only Benton County classified as a metro area by the U.S. Department of Agriculture. According to the CDC, "rural Americans are more likely to die from heart disease, cancer, unintentional injury, chronic lower respiratory disease and stroke than their urban counterparts." The CDC notes that rural Americans are likely to be older and sicker than their urban counterparts.

There are a number of reasons why rural populations are at greater risk for poorer outcomes, including environmental challenges such as longer drives to receive both emergency and routine care. In addition, according to the CDC, rural Americans tend to have higher rates of cigarette smoking, high blood pressure and obesity. The challenges residents face as a result of these disparities impact health care access in a variety of ways.

Priority Health Needs

It is imperative to prioritize resources and activities toward the most pressing and cross-cutting health needs within our community. In determining the issues on which to focus efforts over the next three-year cycle, Baptist collected feedback from community partners and sought to align with community programs, population health management strategies and diversity, equity and inclusion initiatives. Baptist will focus efforts on the following community health priorities over the next three-year cycle:

- Behavioral Health
- Chronic Disease
- Maternal and Child Health

Behavioral Health

Living with behavioral health conditions can reduce an individual's life expectancy, particularly if they have co-occurring chronic conditions, such as heart disease or diabetes, or engage in risky health behaviors like tobacco or drug use. Behavioral health disorders can reduce a patient's ability to effectively manage other conditions, increasing disease complications and the need for medical care.

More than one-quarter of respondents to the Key Informant Survey selected mental health conditions as one of the top five concerns for the people their organization serves, and availability of specialty care services, including mental health care, were noted as a missing resource within the community.

Nearly 1 in 5 adults across Mississippi and the North Mississippi service area report having frequent mental distress, a higher proportion than the nation overall. Adults in Benton, Calhoun and Prentiss counties have a higher prevalence of mental distress relative to other service area counties, estimated at 18% to 19% of adults. Suicide death data are masked in these communities due to low death counts but should be monitored in light of these trends. Mental health needs should also be monitored in Lowndes County, where the suicide death rate increased in recent years.

Mississippi youth have historically been more vulnerable to mental health concerns, including attempted suicides. Nearly 13% of Mississippi high school students reported an attempted suicide in 2019 compared with a national average of 9%. When considered by subpopulation, attempted suicides were highest among students identifying as lesbian, gay or bisexual (LGB), followed by Black/African Americans, females and Latinx. Of note, nearly 30% of LGB students in Mississippi reported an attempted suicide compared to 23.4% nationwide.

While the demand for mental health services has increased in Mississippi, mental health provider rates have lagged national rates. As of 2020, Mississippi had a mental health provider rate of 169.1 per 100,000 population compared to a national rate of 263.2. Within the North Mississippi service area, availability of mental health providers has increased but all counties are HPSAs or High Needs HPSAs for mental health care, and all counties except Lafayette have a lower rate of providers than the nation.

Across Mississippi and within the North Mississippi service area, residents are less like to report excessive drinking and experience fewer negative outcomes related to alcohol and drugs compared to

national averages. Approximately 14% to 16% of service area adults report excessive drinking compared to a national average of 19%. Mississippi overall has historically had a lower rate of death due to accidental drug overdose than the nation, although this trend should continue to be monitored due to pandemic-related trends. Based on a rolling 12-month count from March 2020 to March 2021, the number of drug overdose deaths is predicted to have increased 48.3% in Mississippi, compared to 30.8% nationally.

Chronic Disease

Prior to COVID-19, the top leading causes of death among all populations in the U.S. were chronic diseases including (in order of U.S. mortality rates) heart disease, cancer, unintentional injuries, chronic lower respiratory diseases, stroke and Alzheimer's disease.

The CDC 's list of major risk factors for chronic disease include smoking, poor nutrition and physical inactivity. Mississippi adults overall have increased risk factors for chronic disease than their peers across the nation. Consistent with SDoH trends, Benton, Calhoun, Panola, Prentiss and Union counties have more risk factors than the state. Approximately one-third of adults in these counties are physically inactive and one-quarter use tobacco. Adults in Lafayette and Lowndes counties report fewer health risk factors than the state but exceed national benchmarks.

Consistent with reporting more health risk factors, Mississippi adults have historically higher prevalence of obesity and diabetes than the nation. Within the North Mississippi service area, one-quarter to one-third of adults have obesity and 1 in 10 adults have diabetes. Panola and Lowndes counties have the highest prevalence of adult obesity and diabetes in the service area, and Panola County saw the largest increase in these measures in recent years.

Benton and Calhoun counties have lower prevalence of adult obesity and diabetes than the state and nation, but these findings should continue to be monitored as both counties have a higher rate of death due to diabetes than the state and nation. The Benton County diabetes death rate is more than double state and national rates, and contrary to state and national trends, increased in recent years.

Mississippi overall has a higher rate of death due to diabetes than the nation, largely due to disparities affecting Black/African American people. Across Mississippi, there is a more than 33-point difference in the death rate between white people and Black/African American people. A similar disparity is seen in Lowndes County.

Cancer is the second leading cause of death nationally and has historically affected a higher proportion of Mid-South residents. Within the North Mississippi service area, all counties have lower cancer incidence rates than the state and nation, but all counties except Lafayette and Panola have higher cancer death rates. This finding suggests delayed cancer screening and later stage diagnosis. With few exceptions, service area residents are generally less likely to receive recommended cancer screenings.

Higher cancer death rates in the service area are also due to disparities in lung cancer and may be a result of higher smoking rates. All counties have a higher rate of lung cancer death than the nation; Lowndes, Panola, Prentiss and Union counties also have a higher rate of death than the state.

Consistent with the state and nation, cancer disparities in the North Mississippi service area disproportionately affect Black/African American people. Across all service area counties, Black/African American people have a higher rate of death than white people. Consistent with other health and socio-economic disparities seen in Lowndes County, the cancer death rate for Black/African American residents living in this community is nearly 100 points higher than for white residents.

Chronic lower respiratory disease (CLRD) includes several chronic conditions of the respiratory tract, including asthma and chronic obstructive pulmonary disease (COPD). Within the North Mississippi service area, Benton, Calhoun, Panola and Prentiss counties have a higher prevalence of both adult asthma and COPD compared to the state and nation. These counties also report the highest prevalence of adult tobacco use in the service area.

Older adults are more at risk for chronic conditions, including multiple chronic conditions or comorbidities. Approximately 74% of Mississippi older adult Medicare beneficiaries have two or more chronic conditions, a higher proportion than the nation (70.3%). Within the North Mississippi service area, all counties except Lafayette report a higher prevalence of comorbidities among older adults compared to the national benchmark. Prentiss County has the highest proportion of beneficiaries with multiple chronic conditions and saw the largest increase in this population from the 2019 CHNA. It is worth noting that the proportion of older adult Medicare beneficiaries with comorbidities increased statewide and nationally and in all service area counties from the 2019 CHNA.

Older adults in all North Mississippi service area counties except Lowndes are more likely to have a disability when compared to the nation, potentially challenging disease management efforts. Of note, approximately half of older adults in Calhoun, Panola and Prentiss counties experience disability.

The Alzheimer's disease death rate among older adults in Mississippi is 100 points higher than the national death rate. All North Mississippi service area counties except Union also have a higher Alzheimer's disease death rate than the nation, despite having a similar prevalence of Alzheimer's disease among older adult Medicare beneficiaries. The Alzheimer's disease death rate increased more than 100 points in Lowndes and Prentiss counties in recent years.

Social determinants of health, such as economic stability, health care access and racism, are in part responsible for the unequal and avoidable differences in health status within and between communities, such as the disparities seen within the North Mississippi service area and between white and Black/African American residents. Addressing barriers to care based on the SDoH is critical to ensure health equity for all residents and to improve outcomes and rates of chronic disease.

Respondents to the Patient Access to Care and Services Survey identified health education and programs among the top community factors that would help improve SDoH for patients and residents. Health education/program topics included diabetes, asthma and preventative care. Other top needed community factors included transportation and social workers or case managers. When asked to describe the ideal scenario for addressing SDoH in the care setting, survey participants serving the North Mississippi service area provided the following select comments:

"A local public health partnership with our hospital to provide vaccines and public health screenings, medical information (especially about covid). Public health and private organizations, like churches, to help the elderly and poverty cases with food, shelter and clothing."

"A resource would be immediately available for patients to receive counseling/apply for assistance, etc. whenever a SDoH need is identified. Staff would be aware of SDoH and screen for needs. (Time required would require FTE adjustment)."

"Additional resources would be huge for our clinic. The biggest need is a social worker/case manager. A pharmacist (even if it's just part time) to help educate patients about their meds and perform med recs. So many of our patients have no idea what they are taking or how to take it."

"Equity of care with complete compassion and open minds."

"It would be great to have closed loop referral so if we sent a patient to a particular clinic and they didn't show up we would know to make outreach."

"This would include Medicare/Medicaid for all, so they don't have to worry about insurance or cost. It would include free transportation and recruiting and maintenance of specialist providers in a closer area."

Maternal and Child Health

All North Mississippi service area counties except Lowndes and Panola have a lower birth rate than the nation; Lafayette County also has a lower birth rate than the state. Of note, despite having a low birth rate, the Lafayette County population increased at a faster rate than the state and nation, potentially indicating significant in-migration of residents.

Mississippi overall reports poorer birth outcomes than the nation, including a higher proportion of teen, low birth weight and premature births, a high prevalence of smoking during pregnancy and a higher infant death rate. With few exceptions, North Mississippi service area counties generally report better birth outcomes than the state overall. Notably, all counties except Benton and Panola have a higher percentage of pregnant people receiving first trimester prenatal care than the state and/or nation.

Birth disparities within the North Mississippi service area generally align with socio-economic trends and existing inequalities primarily affecting Black/African American people. Birth disparities are most evident in Calhoun and Panola counties, where approximately 10% of births are to teens, more than 13% of babies are born with low birth weight and approximately 12% of pregnant people use tobacco.

Birth disparities among Black/African American people are consistent across North Mississippi service area counties. Of note, in Lafayette and Lowndes counties, the proportion of Black/African American pregnant people receiving first trimester prenatal care is 13 to 14 percentage points lower than the proportion of white pregnant people. In Calhoun, Prentiss and Union counties, the low birth weight percentage is approximately 15 percentage points higher for Black/African American people than white people. The statewide infant rate death rate among Black/African American infants is 60% higher than for white infants.

It is also worth noting that while Lafayette and Lowndes counties have historically better birth outcomes than the state and/or the nation, both counties saw a decline in these outcomes in 2019. From 2018 to 2019, Lafayette and Lowndes counties saw a decline in the proportion of pregnant people receiving first trimester prenatal care and an increase in teen, low birth weight and premature births. Lafayette County also saw an increase in tobacco use among pregnant people.

The maternal death rate is a growing concern in the Mid-South and nationally. In Mississippi between 2013 and 2016, there was a total of 136 maternal deaths occurring during pregnancy or within one year of the end of pregnancy. The pregnancy-related death rate for Black/African American people in Mississippi was 51.9 per 100,000 live births, nearly three times the white death rate of 18.9. These findings continue to point to underlying inequities and the need for collective health improvement strategy by community partners to improve health for all residents.

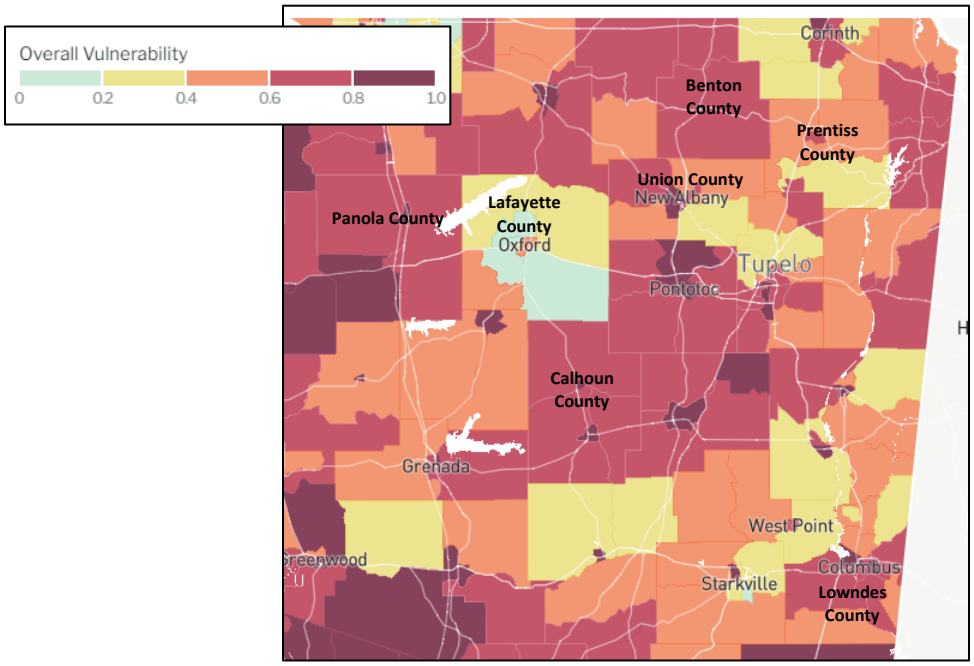
A full summary of CHNA findings for the North Mississippi service area follows.

COVID-19 Impact on Communities

COVID-19 is the name of the disease caused by the SARS-CoV-2 virus. "CO" stands for corona, "VI" for virus and "D" for disease. The number "19" refers to the year 2019 when the first case of COVID-19 was identified. COVID-19 has not impacted all people equally. Rather, certain structural issues—population density, low income, crowded workplaces, etc.—contribute to higher levels of spread and worse outcomes from COVID-19. Surgo Ventures developed the Community Vulnerability Index to measure how well any community in the U.S. could respond to the health, economic and social consequences of COVID-19 without intentional response and additional support.

Within the North Mississippi service area, Calhoun, Lowndes and Panola counties are more vulnerable to COVID-19 than 90% to 95% of other US counties. Primary risk factors for COVID-19 vulnerability include unemployment and financial insecurity. Other risk factors include older age and underlying health issues, crowded living and working areas (e.g., nursing homes, factories) and housing and transportation challenges (e.g., crowded housing, limited public transit).

COVID-19 Community Vulnerability Index



	Vulnerability Level	Description
Benton County	Medium	Average vulnerability among U.S. counties
Calhoun County	Very high	More vulnerable than 94% of U.S. counties
Lafayette County	Low	Lower vulnerability than most U.S. counties
Lowndes County	Very high	More vulnerable than 90% of U.S. counties
Panola County	Very high	More vulnerable than 95% of U.S. counties
Prentiss County	High	More vulnerable than 77% of U.S. counties
Union County	High	More vulnerable than 78% of U.S. counties

Source: COVID Act Now

COVID-19 infection is typically measured by case incidence, which looks at the number of daily new cases per 100,000. When calculating case incidence, an important part of understanding how COVID-19 is affecting certain communities is to analyze the demographics of the community. The COVID-19 pandemic has highlighted health disparities along racial, ethnic and economic lines in the U.S. The following analysis depicts COVID-19 infection for all of the North Mississippi service area, as well as by age group and race and ethnicity.

As of Sept. 22, 2021, the North Mississippi service area had a combined 39,108 COVID-19 cases and 677 related deaths. In comparison to the state, all service area counties except Lafayette had a higher case rate; Benton and Panola counties also had a higher death rate. **Higher COVID-19 incidence and death rates in Benton and Panola counties area potentially indicative of delayed detection or treatment barriers. Both counties have among the lowest health care provider availability in the service area.** Calhoun County also has low provider availability, as well as more socio-economic barriers (e.g., poverty) and an older demographic, but the county reported a lower death rate than other comparable service area counties and the state. This finding should be explored for potential protective factors.

COVID-19 Cases and Deaths (as of Sept. 22, 2021)

	Cases		Deaths	
	Total Cases	Cases per 100,000*	Total Deaths	Deaths per 100,000*
Benton County	1,420	18,571.8	35	457.8
Calhoun County	2,651	19,983.4	40	301.5
Lafayette County	8,218	14,724.2	137	245.5
Lowndes County	10,418	17,693.9	176	298.9
Panola County	6,219	18,727.4	126	379.4
Prentiss County	4,452	17,802.3	77	307.9
Union County	5,730	20,628.6	86	309.6
North Mississippi Service Area Total	39,108	--	677	--
Mississippi	481,397	16,256.4	9,395	317.3

Source: Mississippi State Department of Health

*Rates calculated based on 2020 population counts.

COVID-19 has affected all age groups. While older adults were among the earliest and hardest hit by COVID-19, adults age 25 to 39 made up one-quarter of cases in Mississippi. COVID-19 deaths were concentrated among older adults.

Mississippi COVID-19 Cases and Deaths by Age Group (as of Sept. 22, 2021)

	Cases		Deaths	
Age Group	Count	Percent of Total	Count	Percent of Total
Under 18	82,319	17.6%	8	0.1%
18-24	56,695	12.1%	28	0.3%
25-39	108,956	23.3%	261	2.8%
40-49	68,429	14.6%	478	5.1%
50-64	89,296	19.1%	1963	20.9%
65+	61,414	13.1%	6655	70.9%

Source: Mississippi State Department of Health

Nationally, COVID-19 cases and deaths have been disproportionately higher among Black/African American and Latinx people. **Mississippi differs from the nation in that COVID-19 cases among racial and ethnic groups were largely proportional to their representation within the overall population.**

Mississippi COVID-19 Cases and Deaths by Race and Ethnicity (as of Sept. 22, 2021)

	Percent of Total Population	Percent of Total Cases	Percent of Total Deaths
White	56.0%	58.2%	57.1%
Black or African American	36.6%	35.6%	39.2%
Other race	5.6%	4.9%	2.1%
Latinx origin (any race)	3.6%	3.0%	1.2%
Asian	1.1%	0.5%	0.3%
American Indian or Alaska Native	0.6%	0.8%	1.3%

Source: Mississippi State Department of Health

COVID-19 vaccination will be essential to managing the pandemic. The following table shows the percentage of eligible residents fully vaccinated. **Mississippi had lower vaccine coverage than the nation; all service area counties except Lafayette had lower vaccine coverage than the state.**

COVID-19 Vaccination among Population Age 12 or Older (as of Sept. 22, 2021)

	Fully Vaccinated
Benton County	37.0%
Calhoun County	35.0%
Lafayette County	49.0%
Lowndes County	40.0%
Panola County	38.0%
Prentiss County	36.0%
Union County	34.0%
Mississippi	41.0%
United States	64.3%

Source: Mississippi State Department of Health & Centers for Disease Control and Prevention

The CDC has prioritized vaccine equity, defined as preferential access and administration to those who have been most affected by COVID-19. Among the prominent racial and ethnic groups within the region, vaccine coverage was higher among Asians. Other racial and ethnic groups in Mississippi reported similar vaccine coverage at less than 50%.

COVID-19 At Least Partially Vaccinated by Race and Ethnicity (as of Sept. 20, 2021)

	Mississippi
White	46%
Black or African American	49%
Asian	83%
Latinx (any race)	45%

Source: Kaiser Family Foundation

Service Area Population Statistics

Demographics

Since 2010, the Mississippi population declined by -0.2% compared to national population growth of +7.4%. Within the North Mississippi service area, all counties except Lafayette and Union also saw population decline from 2010. **Population growth within Lafayette County (+17.9%) was more than double the national growth percentage.** In total, the service area saw an increase of +3,659 residents, bolstered by an increase of +8,462 residents in Lafayette County.

2020 Total Population

	Total Population	Percent Change Since 2010
Benton County	7,646	-12.4% ↓
Calhoun County	13,266	-11.3% ↓
Lafayette County	55,813	+17.9% ↑
Lowndes County	58,879	-1.5% ↓
Panola County	33,208	-4.3% ↓
Prentiss County	25,008	-1.1% ↓
Union County	27,777	+2.4% ↑
Mississippi	2,961,279	-0.2%
United States	331,449,281	+7.4%

Source: U.S. Census Bureau, Decennial Census

Health needs change as individuals age. Therefore, the age distribution of a community impacts its social and health care needs. The age distribution and median age of Mississippi is consistent with the nation. Within the North Mississippi service area, **Benton and Calhoun counties have an older demographic, with proportionately more older adults age 55 to 64 and 65 or older compared to the state and nation, and a median age of nearly 42 years.** The Lafayette County population differs from other service area counties with a notably younger demographic, due primarily to a high proportion of young adults age 18 to 24 and the presence of the University of Mississippi. The age distribution of other service area counties is largely consistent with the state, although Prentiss County has a slightly higher proportion of adults age 65 or older.

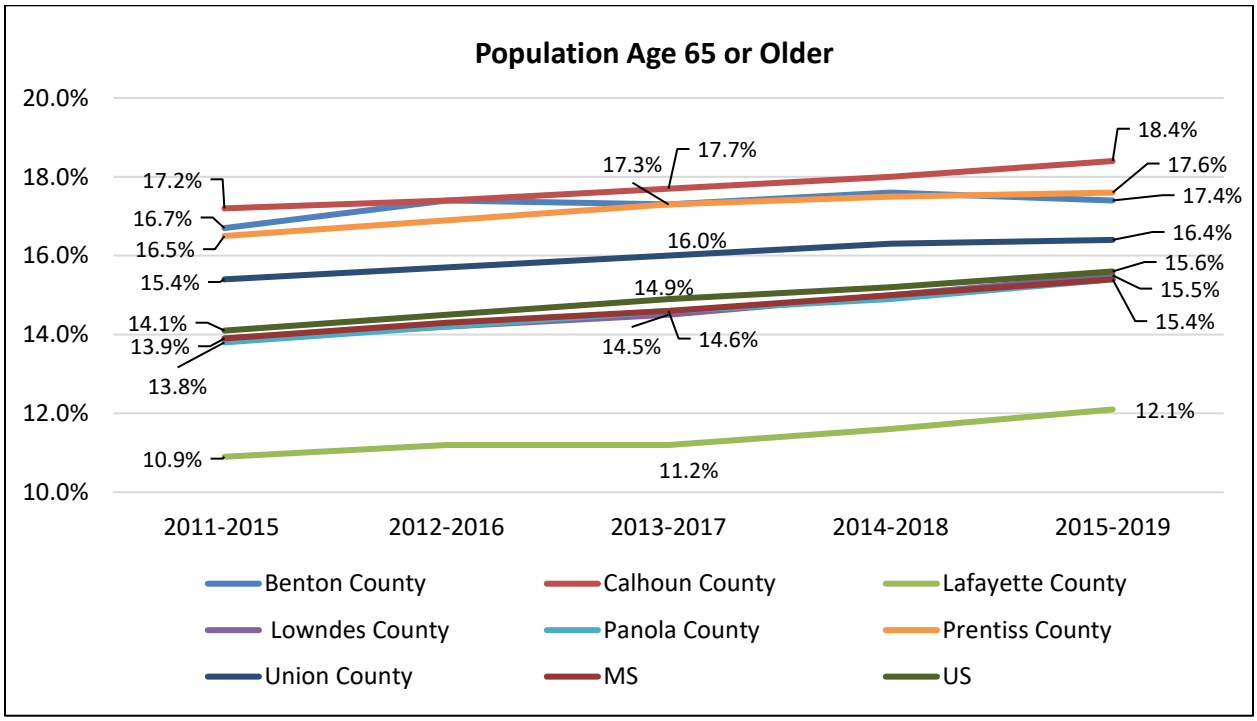
The proportion of older adult residents increased across Mississippi and the nation, and in all North Mississippi service area counties. Nationally, among older adults age 65 or older, the 65 to 74 age category is the fastest growing demographic, largely due to the aging of the baby boomer generation. This finding suggests health needs and support services for older adults will likely continue to grow in coming years.

While the older adult population increased across the North Mississippi service area, youth under age 18 comprise approximately 1 in 4 residents in all counties except Lafayette.

2015-2019 Population by Age

	Gen Z/ Gen C	Gen Z	Millennial	Millennial/ Gen X	Gen X	Boomers	Boomers/ Silent	Median Age
	Under 18 years	18-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65 years and over	
Benton County	21.5%	9.4%	9.9%	13.9%	12.3%	15.7%	17.4%	41.5
Calhoun County	23.8%	8.2%	11.0%	11.4%	13.4%	13.9%	18.4%	41.4
Lafayette County	18.4%	23.0%	14.3%	12.3%	9.6%	10.3%	12.1%	30.5
Lowndes County	23.7%	9.9%	13.7%	11.7%	12.3%	13.3%	15.5%	37.1
Panola County	25.1%	8.8%	13.2%	11.8%	12.7%	13.2%	15.4%	38.3
Prentiss County	22.6%	10.3%	12.1%	12.0%	12.7%	12.6%	17.6%	39.2
Union County	25.1%	8.1%	12.9%	12.8%	12.8%	11.9%	16.4%	37.9
Mississippi	23.9%	9.9%	13.0%	12.4%	12.5%	12.8%	15.4%	37.5
United States	22.6%	9.4%	13.9%	12.6%	13.0%	12.9%	15.6%	38.1

Source: U.S. Census Bureau, American Community Survey



Source: U.S. Census Bureau, American Community Survey

Racial and ethnic diversity varies widely within the North Mississippi service area. Consistent with the 2019 CHNA, **Panola and Lowndes are the most diverse counties with nearly half of residents identifying as Black/African American.** Prentiss and Union are the least diverse counties with 78% to 81% of residents identifying as white. Across the service area, representation of racial and ethnic groups other than white and Black/African American is generally consistent with the state and lower than the

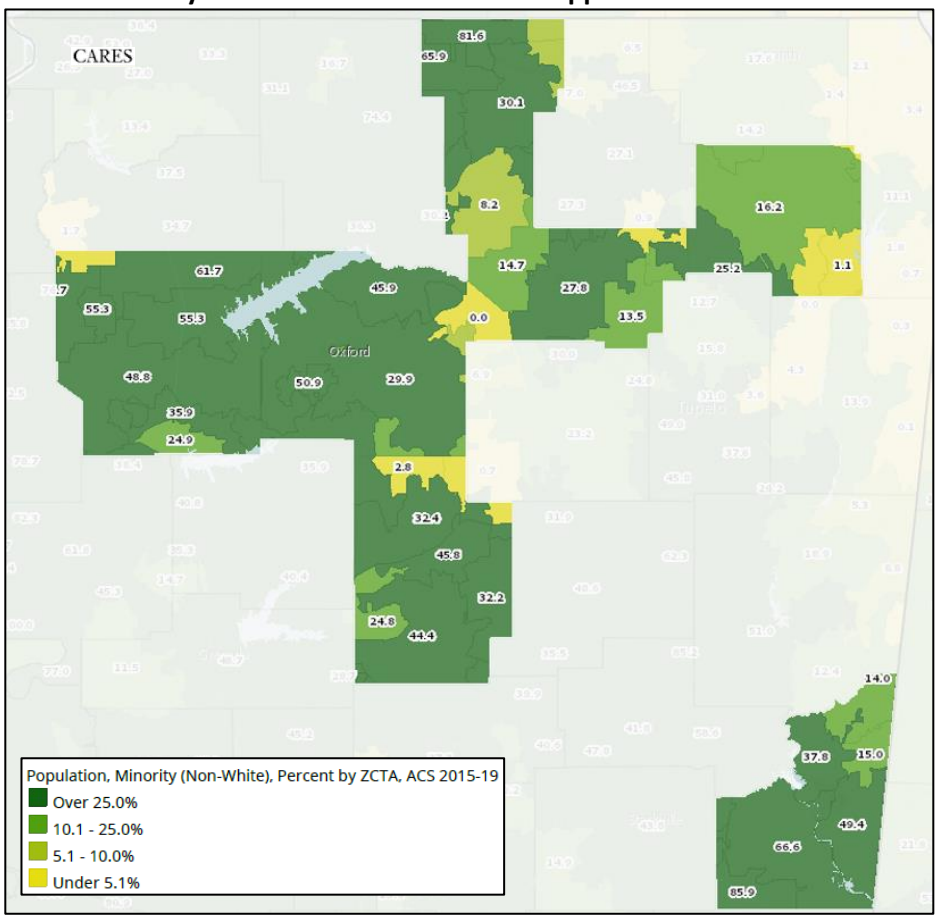
nation. Lafayette County has a slightly higher proportion of Asian residents than Mississippi overall, likely due in part to the university population.

2020 Population by Race and Ethnicity

	White	Black or African American	Asian	American Indian / Alaska Native	Native Hawaiian / Pacific Islander	Other Race	Two or More Races	Latinx origin (any race)
Benton County	59.9%	34.9%	0.0%	0.2%	0.0%	1.3%	3.6%	1.9%
Calhoun County	66.2%	26.1%	0.1%	0.2%	0.0%	3.7%	3.6%	5.6%
Lafayette County	70.4%	20.4%	3.0%	0.2%	0.0%	1.7%	4.4%	3.8%
Lowndes County	50.6%	44.2%	0.9%	0.2%	0.0%	0.9%	3.3%	2.2%
Panola County	47.5%	48.5%	0.2%	0.2%	0.0%	1.0%	2.6%	2.0%
Prentiss County	81.2%	14.3%	0.3%	0.3%	0.0%	0.8%	3.2%	1.6%
Union County	78.3%	14.3%	0.4%	0.2%	0.0%	3.2%	3.5%	4.7%
Mississippi	56.0%	36.6%	1.1%	0.6%	0.0%	1.9%	3.7%	3.6%
United States	61.6%	12.4%	6.0%	1.1%	0.2%	8.4%	10.2%	18.7%

Source: U.S. Census Bureau, Decennial Census

2015-2019 Non-White Population
by ZIP Code in the North Mississippi Service Area



Racial and ethnic diversity is increasing nationally and across the North Mississippi service area, particularly for Asian, other race, multiracial and Latinx groups. **The multiracial population increased approximately 200% or more from the 2010 Census in all reported counties, Mississippi and the nation.** The "other race" category has historically captured ethno-racially mixed individuals, as well as Latinx individuals who do not consider ethnicity as separate or distinct from race.

Consistent with overall population growth within Lafayette County, the county saw growth across all reported racial and ethnic groups. In all other service area counties, the white population declined, and the Black/African American population was stagnant or declined. Benton and Calhoun counties saw the largest overall population decline, and the largest declines in both white and Black/African American populations.

Population Change among Prominent Racial and Ethnic Groups, 2010 to 2020

	White	Black or African American	Asian	Other Race	Two or More Races	Latinx origin (any race)
Benton County	-13.3%	-18.0%	-83.3%	+41.7%	+217.0%	-2.0%
Calhoun County	-13.1%	-16.4%	+6.3%	-2.7%	+181.9%	-7.2%
Lafayette County	+15.6%	+1.6%	+67.5%	+74.5%	+395.9%	+99.6%
Lowndes County	-7.7%	0.0%	+33.8%	+53.9%	+193.9%	+44.7%
Panola County	-8.1%	-4.6%	-5.9%	+52.3%	+187.9%	+37.2%
Prentiss County	-4.7%	+2.4%	+157.6%	+39.3%	+202.7%	+31.9%
Union County	-1.0%	+1.0%	+154.3%	+12.6%	+194.3%	+7.5%
Mississippi	-5.5%	-1.3%	+27.1%	+49.0%	+224.7%	+29.1%
United States	-8.6%	+5.6%	+35.5%	+46.1%	+275.7%	+23.0%

Source: U.S. Census Bureau, Decennial Census

Many Roads Lead to Home

The North Mississippi service area is home to proportionately fewer immigrants than the nation overall. **More than 95% of residents in all service area counties were born in the U.S. compared with a national average of 85%.** Lafayette County has the largest proportion of non-U.S. citizens in the service area and a slightly higher proportion of residents who speak a primary language other than English when compared to the state, although both percentages fall below national averages.

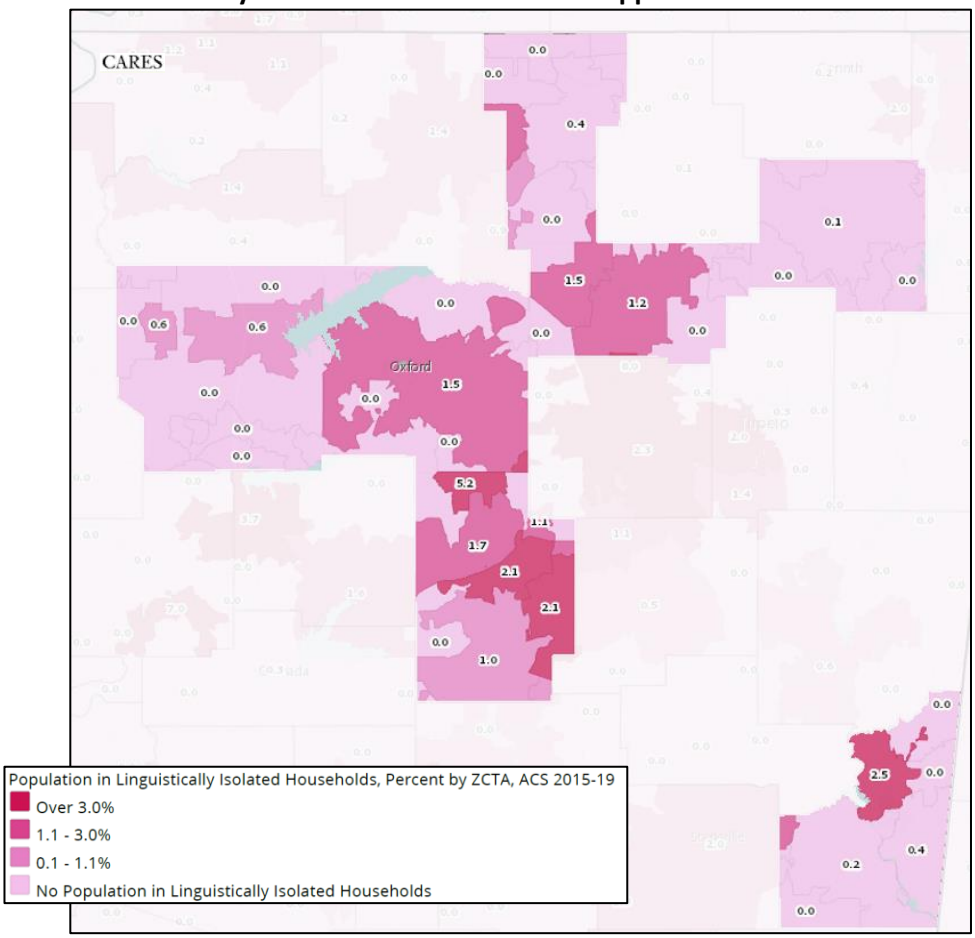
Linguistically isolated households are defined as persons who cannot speak English at least "very well" or who do not live in a household where an adult speaks English "very well." **Few households in the North Mississippi service area are considered linguistically isolated, outside of Calhoun County.** Calhoun County has the largest proportion of Latinx residents in the service area at 5.6%, and when viewed at the ZIP code-level, areas with a higher proportion of linguistically isolated households align with areas of greater Latinx diversity. Of note, **more than 5% of households in Calhoun County ZIP code 38913 (Banner) are considered linguistically isolated, the highest proportion in the service area.**

2015-2019 Nativity and Citizenship Status

	U.S. citizen, born in the U.S.	U.S. citizen, born in Puerto Rico or U.S. Island Areas	U.S. citizen, born abroad of American parent(s)	U.S. citizen by naturalization	Not a U.S. citizen	Speak Primary Language Other Than English
Benton County	98.2%	0.0%	0.2%	0.7%	0.9%	2.6%
Calhoun County	96.7%	0.0%	0.1%	0.7%	2.5%	5.3%
Lafayette County	95.2%	0.3%	0.8%	1.4%	2.3%	5.2%
Lowndes County	96.8%	0.2%	0.7%	1.4%	0.9%	3.1%
Panola County	98.4%	0.1%	0.1%	0.2%	1.1%	1.8%
Prentiss County	97.3%	0.2%	0.5%	0.7%	1.3%	3.0%
Union County	97.1%	0.0%	0.4%	0.7%	1.9%	3.6%
Mississippi	97.0%	0.2%	0.5%	0.9%	1.4%	4.0%
United States	84.9%	0.6%	1.0%	6.7%	6.8%	21.6%

Source: U.S. Census Bureau, American Community Survey

2015-2019 Population in Linguistically Isolated Households by ZIP Code in the North Mississippi Service Area



Poverty

Poverty levels declined across Mississippi and most North Mississippi service area counties over the past decade, but the state overall continues to have lower median incomes and higher poverty than the nation. Economic indicators vary widely across service area counties, representing areas of both wealth and poverty. Consistent with the 2019 CHNA, Lafayette County has a higher median household income than the state and lower poverty than both the state and nation. Note: overall poverty skews higher in Lafayette County due to university students who report little or no income. Childhood and older adult poverty are more accurate measures for Lafayette County. Union County also reports stronger economics, with a similar median household income as the state and poverty levels that are more consistent with the nation.

Lowndes County reports a similar median household income as Lafayette County, but poverty levels that exceed state and/or national averages. This difference is largely due to wealth disparities particularly affecting Black/African American people. County-wide median household income is $70,656 for white householders and $27,897 for Black/African American householders. Nearly 35% of Black/African American people live in poverty compared with 9% of white people, the largest disparity in the service area. Poverty among Black/African American residents in Lowndes County was unchanged from the 2019 CHNA.

Benton, Calhoun, Panola and Prentiss counties generally have similar poverty levels as the state and lower overall median household incomes. The exception is higher poverty among youth and older adults in Calhoun and Prentiss counties. In both counties, approximately 1 in 3 children and 1 in 5 older adults live in poverty. Of note, while poverty declined statewide and nationally, it was largely consistent in Benton and Prentiss Counties over the past decade.

Statewide and nationally, poverty declined for all reported racial and ethnic groups from the 2019 CHNA, but people of color continue to be disproportionately impacted. Across Mississippi, approximately one-quarter to one-third of Black/African American, Latinx, multiracial and other race populations live in poverty compared to 13% of the white population. Within the North Mississippi service area, wealth disparities are most prominent in Lowndes County, but exist across all counties. When viewed at the ZIP code-level, areas of higher poverty also generally follow racial lines, particularly affecting Black/African American people.

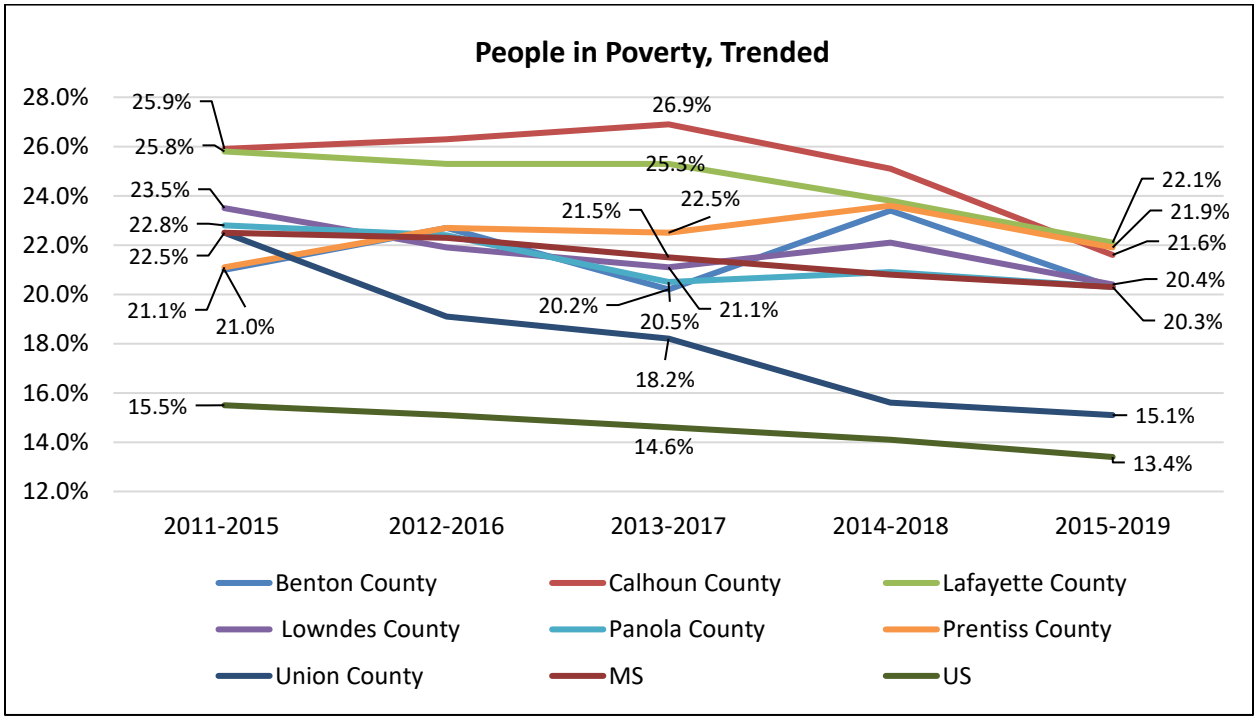
Note, income and poverty data reflect pre-COVID-19 findings and likely do not demonstrate economic hardship experienced by individuals and families during the pandemic. Unemployment and food insecurity data for 2020 and 2021 provide insight into the economic impact of the pandemic.

COVID-19 had a significant impact on unemployment rates across the nation. By the end of 2020, average national unemployment was double what it was at the beginning of the year. Within the North Mississippi service area, all counties saw an increase in unemployment in 2020. Of note, **Lowndes and Panola counties saw the largest increases in unemployment in 2020 and have been among the slowest to recover**, as indicated by July 2021 unemployment percentages that are nearly 2 points higher than pre-pandemic levels.

Economic Indicators

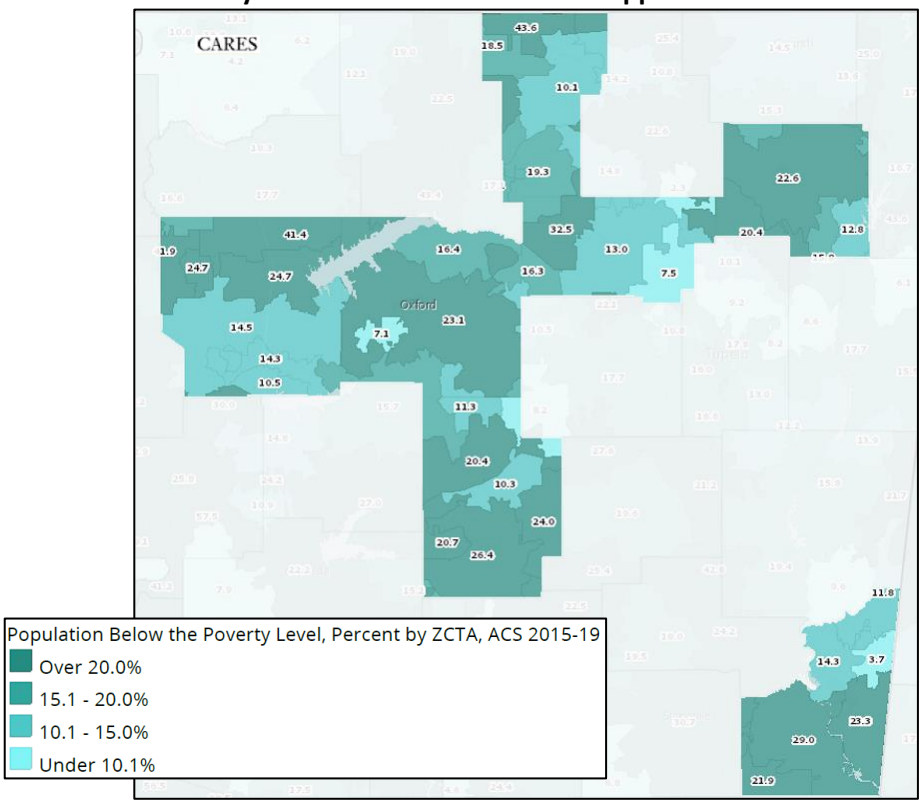
	Benton County	Calhoun County	Lafayette County	Lowndes County	Panola County	Prentiss County	Union County	Mississippi	United States
Income and Poverty (2015-2019)									
Median household income	$36,258	$37,263	$50,272	$50,441	$38,304	$39,256	$45,754	$45,081	$62,843
People in poverty	20.3%	21.6%	22.1%	20.4%	20.3%	21.9%	15.1%	20.3%	13.4%
Children in poverty	17.7%	33.2%	17.8%	29.6%	25.9%	35.0%	22.3%	28.7%	18.5%
Older adults (65+) in poverty	12.4%	18.6%	5.6%	14.8%	11.1%	16.0%	10.9%	12.8%	9.3%
Households with SNAP* benefits	11.9%	15.0%	6.1%	15.6%	17.2%	16.5%	12.3%	15.4%	11.7%
Unemployment									
January 2020	6.4%	6.1%	4.2%	5.3%	6.6%	4.9%	4.3%	5.5%	4.0%
2020 average	8.3%	8.1%	6.1%	8.3%	9.8%	7.0%	7.1%	8.1%	8.1%
July 2021	7.7%	6.3%	5.9%	7.0%	8.3%	5.9%	4.9%	6.7%	5.7%

Source: U.S. Census Bureau, American Community Survey & U.S. Bureau of Labor Statistics
*Supplemental Nutrition Assistance Program



Source: U.S. Census Bureau, American Community Survey

2015-2019 Population in Poverty
by ZIP Code in the North Mississippi Service Area



2015-2019 People in Poverty among Prominent Racial and Ethnic Groups with 2019 CHNA Comparison (2012-2016)

	White	Black / African American	Asian	Other Race	Two or More Races	Latinx origin (any race)
Benton County	**16.5%**	**22.9%** ↓	**0.0%**	**67.3% (n=70)** ↑	**47.0% (n=117)** ↓	**53.3%** ↑
2019 CHNA	16.5%	32.7%	0.0%	0.0%	66.7% (n=10)	0.0%
Calhoun County	**16.6%** ↓	**26.2%** ↓	**20.6% (n=7)** ↓	**47.1%** ↓	**62.0%** ↓	**45.6%** ↓
2019 CHNA	20.0%	37.1%	100% (n=5)	56.7%	65.0%	58.2%
Lafayette County	**18.9%** ↓	**31.4%** ↓	**23.2%** ↓	**27.1%** ↑	**8.0%** ↓	**24.5%** ↓
2019 CHNA	22.6%	33.2%	32.3%	11.6%	13.9%	43.7%
Lowndes County	**9.1%** ↓	**34.8%**	**0.0%**	**0.0%** ↓	**23.3%**	**21.4%** ↓
2019 CHNA	11.4%	35.3%	0.0%	51.1% (n=140)	17.0%	25.4%
Panola County	**11.3%** ↓	**28.2%** ↓	**0.0%**	**100% (n=49)** ↑	**39.9%** ↓	**11.6%** ↓
2019 CHNA	13.5%	30.0%	0.0%	28.3% (n=13)	64.7%	15.1%
Prentiss County	**19.8%** ↑	**34.0%** ↓	**0.0%**	**50.0% (n=34)** ↑	**50.9%** ↓	**43.9%** ↑
2019 CHNA	17.8%	47.0%	0.0%	29.0% (n=38)	77.1%	25.3%
Union County	**13.5%** ↓	**22.8%** ↓	**0.0%**	**14.7%** ↓	**25.0%** ↓	**18.4%** ↓
2019 CHNA	17.0%	27.7%	0.0%	73.3%	40.5%	57.6%
Mississippi	**12.8%**	**31.6%**	**13.3%**	**27.6%**	**25.4%**	**24.9%**
2019 CHNA	14.1%	35.0%	14.0%	34.5%	29.0%	30.5%
United States	**11.1%**	**23.0%**	**10.9%**	**21.0%**	**16.7%**	**19.6%**
2019 CHNA	12.4%	26.2%	12.3%	25.4%	19.3%	23.4%

Source: U.S. Census Bureau, American Community Survey

*Arrows indicate an increase or decrease or greater than one percentage point. Low population counts are noted in parentheses and should be interpreted with caution.

Food Insecurity

Food insecurity is defined as not having reliable access to a sufficient amount of nutritious, affordable food. Food insecurity is associated with lower household income and poverty, as well as poorer overall health status. Similar to unemployment rates, COVID-19 had a profound impact on food insecurity, particularly among children. From 2019 to 2020, the percentage of food insecure children was projected to increase nearly 3 percentage points across Mississippi.

The proportion of food insecure residents was projected to increase in all North Mississippi service area counties from 2019 to 2020, but **consistent with unemployment rates, Lowndes and Panola counties saw disproportionately larger increases in food insecurity.** In both counties from 2019 to 2020, the proportion of food insecure residents increased approximately 2.5 percentage points and the proportion of food insecure children increased more than 4 percentage points.

Union County also saw similarly high increases in food insecurity in 2020 as Lowndes and Panola counties, and smaller declines in projected food insecurity in 2021. In all other service area counties, projected food insecurity for 2021 is generally on par with 2019 estimates.

Trended and Projected Food Insecurity

	Benton County	Calhoun County	Lafayette County	Lowndes County	Panola County	Prentiss County	Union County	Mississippi	United States
All Residents									
2021 (projected)	**18.2%**	**19.3%**	**19.7%**	**23.7%**	**16.2%**	**14.0%**	**17.8%**	**18.7%**	**12.9%**
2020 (projected)	**19.5%**	**22.0%**	**21.3%**	**27.0%**	**17.4%**	**16.6%**	**19.2%**	**20.1%**	**13.9%**
2019	17.6%	18.7%	19.3%	23.4%	15.9%	13.9%	16.8%	18.5%	10.9%
2018	18.6%	20.5%	19.5%	25.4%	15.2%	15.6%	17.8%	18.7%	11.5%
2017	17.3%	18.6%	18.1%	24.9%	18.4%	20.5%	20.1%	19.2%	12.5%
Children									
2021 (projected)	**19.3%**	**19.7%**	**23.7%**	**16.2%**	**14.0%**	**17.8%**	**21.8%**	**22.2%**	**17.9%**
2020 (projected)	**22.0%**	**21.3%**	**27.0%**	**17.4%**	**16.6%**	**19.2%**	**24.5%**	**24.9%**	**19.9%**
2019	18.7%	19.3%	23.4%	15.9%	13.9%	16.8%	20.4%	22.3%	14.6%
2018	20.5%	19.5%	25.4%	15.2%	15.6%	17.8%	21.0%	23.0%	15.2%
2017	18.6%	18.1%	24.9%	18.4%	20.5%	20.1%	23.1%	22.9%	16.1%

Source: Feeding America

Education

High school graduation is one of the strongest predictors of longevity and economic stability. Within the North Mississippi service area, educational attainment among adults generally aligns with income and poverty status. Adults in all counties except Lafayette are less likely to complete high school when compared to the nation, and adults in all counties except Lafayette and Lowndes are less likely to complete high school when compared to the state. Of note, **while Lafayette and Lowndes counties report the highest educational attainment in the service area, they also report the largest education disparities between white and Black/African American residents.** In comparison to white people, the

proportion of Black/African American people attaining a bachelor's degree is 17 percentage points lower in Lowndes County and 27 points lower in Lafayette County.

Benton and Calhoun counties have the lowest median household incomes in the service area and the highest proportion of adults not completing high school. **Approximately 1 in 4 adults in Benton and Calhoun counties have not completed high school compared with 1 in 10 adults nationwide.** Adults in Panola, Prentiss and Union counties report similar educational attainment that is lower than both state and national benchmarks. Of note, while Union County overall reports lower educational attainment, it has higher median income and lower poverty compared to other service area counties. This finding potentially indicates availability of well-paying blue-collar jobs.

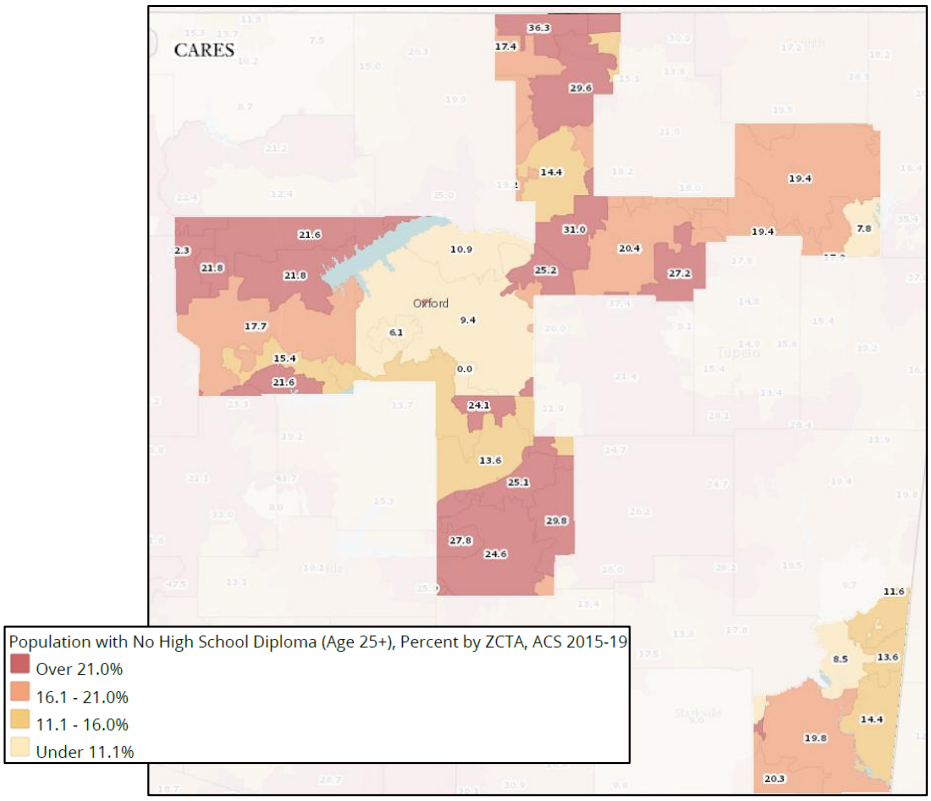
Statewide and nationally, educational attainment increased across racial and ethnic groups from the 2019 CHNA, but improvements were marginal and continue to reflect disparities among people of color. Improvements in educational attainment were varied across the North Mississippi service area, but in general benefited white residents.

2015-2019 Population (Age 25 or Older) by Educational Attainment

	Less than high school diploma	High school graduate (includes GED)	Some college or associate's degree	Bachelor's degree	Graduate or professional degree
Benton County	27.4%	33.4%	27.6%	5.9%	5.6%
Calhoun County	22.5%	37.3%	28.4%	6.4%	5.4%
Lafayette County	9.5%	18.7%	26.1%	25.6%	20.0%
Lowndes County	14.0%	32.0%	30.7%	14.8%	8.6%
Panola County	19.4%	36.6%	29.1%	9.5%	5.4%
Prentiss County	19.9%	34.5%	33.2%	8.1%	4.3%
Union County	21.9%	33.7%	31.1%	7.7%	5.6%
Mississippi	15.5%	30.4%	32.1%	13.7%	8.4%
United States	12.0%	27.0%	28.9%	19.8%	12.4%

Source: U.S. Census Bureau, American Community Survey

2015-2019 Population with No High School Diploma by ZIP Code in the North Mississippi Service Area



2015-2019 Population with a Bachelor's Degree by Prominent Racial and Ethnic Group with 2019 CHNA Comparison (2012-2016)

	White	Black / African American	Asian	Other Race	Two or More Races	Latinx origin (any race)
Benton County	**14.8%** ↑	**6.0%** ↓	**0.0%**	**3.4% (n=2)** ↑	**3.9% (n=5)** ↑	**5.0% (n=6)** ↓
2019 CHNA	12.1%	10.9%	0.0%	0.0%	0.0%	19.1%
Calhoun County	**14.4%** ↑	**6.2%**	**0.0%**	**2.8% (n=9)** ↑	**12.5% (n=4)** ↓	**3.3% (n=12)** ↑
2019 CHNA	13.3%	5.4%	0.0%	0.0%	20.0% (n=3)	2.3% (n=8)
Lafayette County	**52.5%** ↑	**25.4%** ↑	**71.3%** ↓	**10.4%** ↑	**29.8%** ↑	**24.0%** ↑
2019 CHNA	46.3%	18.1%	80.8%	0.0%	28.2%	20.1%
Lowndes County	**30.7%** ↑	**13.5%** ↑	**19.6%** ↓	**36.1%** ↓	**30.1%** ↓	**13.7%** ↓
2019 CHNA	28.4%	12.3%	51.8%	45.6%	54.8%	44.9%
Panola County	**17.0%** ↓	**11.9%**	**100% (n=5)**	**0.0%**	**40.0%** ↑	**1.1% (n=5)**
2019 CHNA	18.5%	12.2%	100% (n=4)	0.0%	0.0%	0.6% (n=2)
Prentiss County	**13.8%**	**3.9%**	**5.8% (n=20)** ↓	**0.0%**	**0.0%**	**21.3%** ↑
2019 CHNA	13.0%	4.6%	37.0% (n=17)	0.0%	10.7% (n=6)	0.0%
Union County	**14.2%** ↓	**7.6%**	**100% (n=45)** ↑	**10.2%** ↑	**17.3%** ↑	**9.3%** ↑
2019 CHNA	16.9%	8.4%	0.0%	0.0%	16.0%	3.6%
Mississippi	**25.7%**	**15.4%**	**40.3%**	**10.8%**	**26.7%**	**14.8%**
2019 CHNA	24.5%	14.6%	39.2%	9.5%	24.0%	12.9%
United States	**33.5%**	**21.6%**	**54.3%**	**12.0%**	**31.9%**	**16.4%**
2019 CHNA	31.6%	20.0%	52.1%	10.8%	29.1%	14.7%

Source: U.S. Census Bureau, American Community Survey

*Arrows indicate an increase or decrease or greater than one percentage point. Low population counts are noted in parentheses and should be interpreted with caution.

Housing

Housing is the largest single expense for most households and should represent 30% of a household's monthly income. The median home value for Mississippi is less expensive than the median home value for the U.S. overall, and fewer homeowners are considered housing cost burdened compared to the U.S. benchmark. **In all North Mississippi service area counties except Lafayette and Lowndes, the median home value is lower than state and national medians and more residents own their home. However, consistent with having lower median incomes and higher poverty levels, more homeowners in Benton, Calhoun, Panola and Prentiss counties are considered cost burdened when compared to state and national benchmarks.** Lowndes County also has a higher proportion of cost burdened homeowners than the state and nation, a finding that is consistent with wealth disparities among residents.

Lafayette County has the largest proportion of renter-occupied households in the service area and the largest proportion of cost burdened renters, but these percentages are skewed by university students. Rental cost burden should be explored in Panola County, where 30.4% of households are renter occupied and 53% of renters are cost burdened, a higher proportion than the state and nation. **Areas of high housing cost burden in Panola County include Batesville and Sardis**, as shown in the map on the following page.

2015-2019 Housing Indicators

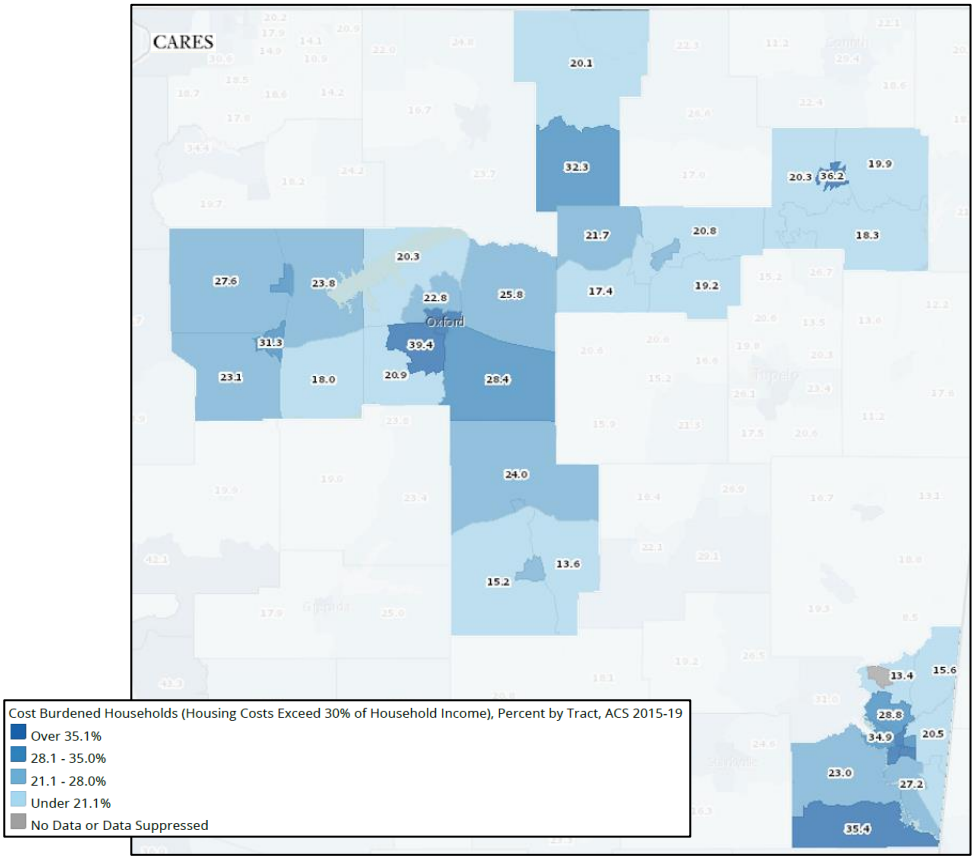
	Owners			Renters		
	Occupied Units	Median Home Value	Cost-Burdened*	Occupied Units	Median Rent	Cost-Burdened*
Benton County	80.6%	$78,000	34.2%	19.4%	$503	28.8%
Calhoun County	74.5%	$70,500	28.5%	25.5%	$581	37.1%
Lafayette County	62.0%	$199,700	25.1%	38.0%	$954	61.4%
Lowndes County	63.5%	$134,200	29.1%	36.5%	$805	47.8%
Panola County	69.6%	$83,300	29.9%	30.4%	$679	53.0%
Prentiss County	72.7%	$92,700	33.5%	27.3%	$588	49.2%
Union County	73.1%	$100,600	23.1%	26.9%	$696	33.5%
Mississippi	68.2%	$119,000	26.5%	31.8%	$780	49.3%
United States	64.0%	$217,500	27.8%	36.0%	$1,062	49.6%

Source: U.S. Census Bureau, American Community Survey

*Defined as spending 30% or more of household income on rent or mortgage expenses.

The following map depicts the percentage of cost burdened households by census tract within the service area. While the prevalence of housing cost burden is generally low across the counties, pockets of disparity exist, particularly near city centers. **Housing cost burden is as high as 36.2% in Booneville in Prentiss County; 26.4% in New Albany in Union County and 48% in Columbus in Lowndes County.** The southern portion of Lowndes County also has a higher proportion of cost burdened households, a finding that is consistent with other economic disparities primarily affecting Black/African American people.

2015-2019 Cost Burdened Households
by Census Tract in the North Mississippi Service Area



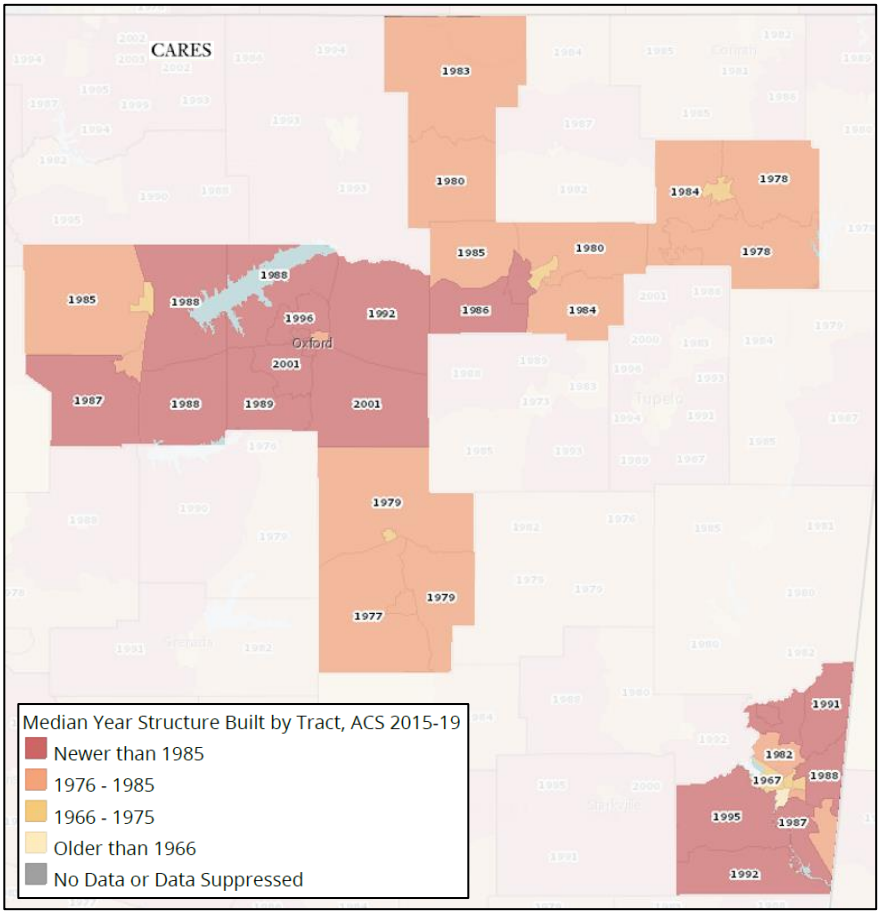
Mississippi overall has newer housing stock in comparison to the nation with approximately 1 in 4 housing units built after 1999 compared to 1 in 5 nationwide. Within the North Mississippi service area, the age of housing stock varies widely. Calhoun and Prentiss counties have the oldest housing stock with 55.9% of units built before 1980. Lafayette County has the newest housing stock with 8% of units built after 2013. When viewed by census tract, newer housing is concentrated in and around Oxford and in the suburbs of Columbus in Lowndes County.

2015-2019 Housing by Year Built

	Before 1980	1980-1999	2000-2009	2010-2013	2014 or Later
Benton County	43.7%	40.7%	11.9%	2.7%	0.9%
Calhoun County	55.9%	32.1%	9.0%	1.8%	1.2%
Lafayette County	26.6%	33.8%	22.0%	9.6%	8.0%
Lowndes County	49.2%	31.7%	14.2%	2.6%	2.3%
Panola County	41.5%	41.7%	11.4%	3.1%	2.1%
Prentiss County	55.9%	32.6%	8.2%	2.4%	1.0%
Union County	46.7%	34.3%	11.4%	3.9%	3.8%
Mississippi	45.2%	32.1%	17.0%	3.4%	2.4%
United States	53.6%	27.3%	14.0%	2.7%	2.5%

Source: U.S. Census Bureau, American Community Survey

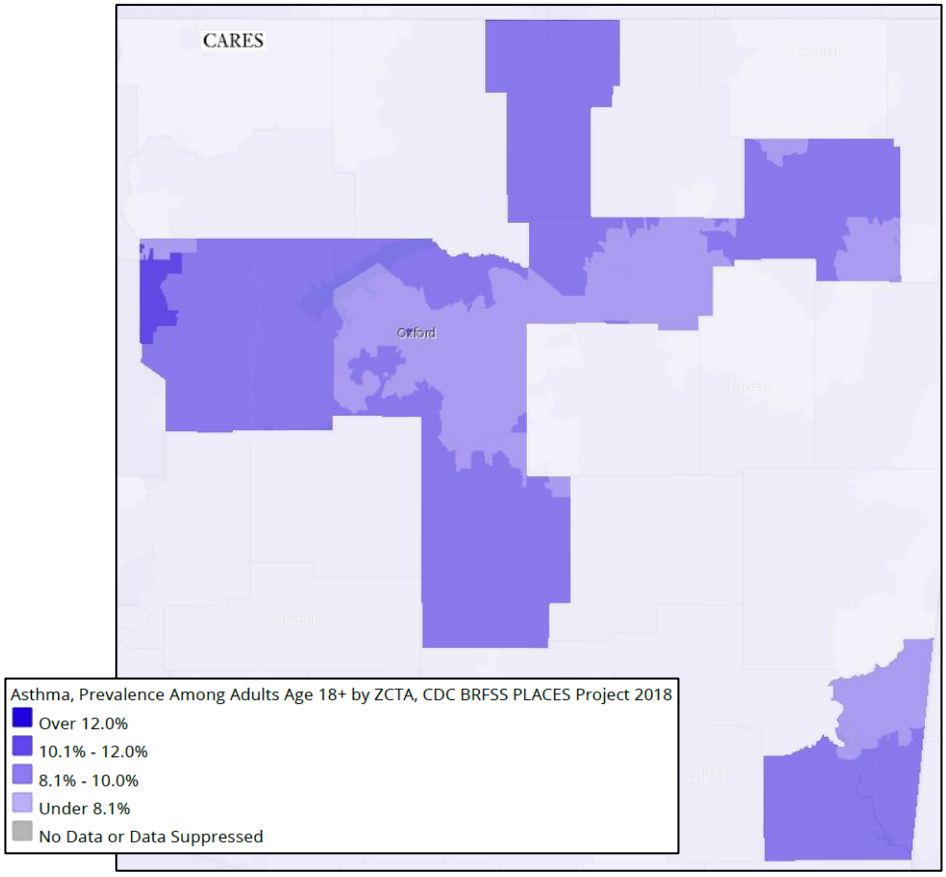
2015-2019 Median Year of Housing Build
by Census Tract in the North Mississippi Service Area



Quality and affordable housing has a direct impact on health. Unhealthy housing puts residents at risk of health issues including lead poisoning, asthma, injury and other chronic diseases. Housing built before 1979 may contain lead paint and other hazardous materials like asbestos.

Mississippi residents have a slightly higher prevalence of asthma than their peers nationwide. As of 2018, nearly 10% of Mississippi adults reported having a current asthma diagnosis compared to 9% nationally. The following map depicts adult asthma prevalence by ZIP code in the North Mississippi service area. **Areas of higher asthma prevalence generally align with areas with more socio-economic barriers, including older housing and poverty. For example, Crenshaw ZIP code 38621 in Panola County reports the highest prevalence of adult asthma in the service area (12.2%), one of the highest poverty levels (41.9%) and a median housing age of 1985.**

2018 Adult Asthma Prevalence by ZIP Code in the North Mississippi Service Area



Asthma is the most common chronic condition among children, and a leading cause of school absenteeism and hospitalization. In 2019, 25% of children in Mississippi reported ever being diagnosed with asthma compared to 21.8% nationwide. Nationally, Black/African American and Latinx children are more likely to live in rented households and areas with older housing. These trends, coupled with other SDoH barriers, contribute to a disproportionately higher prevalence of asthma among Black/African American and Latinx children compared to other racial groups. **In Mississippi, 28% of Black/African American children have been diagnosed with asthma compared to 22.1% of white children.**

2019 High School Students Ever Diagnosed with Asthma

	Mississippi	United States
Total	25.0%	21.8%
Race and Ethnicity		
Black or African American	28.0%	29.2%
White	22.1%	19.8%
Latinx origin (any race)	21.4%	21.0%

Source: Centers for Disease Control and Prevention, YRBS

The Point-in-Time (PIT) count is a count of sheltered and unsheltered people experiencing homelessness required by the United States Department of Housing and Urban Development (HUD) for communities that participate in its Continuum of Care (CoC) program. The count is usually conducted in the last 10 days of January each year. Sheltered locations include emergency shelters and transitional housing. Unsheltered locations include cars, streets, parks, etc.

The HUD CoC program is designed to provide the services and resources needed to assist individuals and families experiencing homelessness. As part of their planning responsibility, each CoC entity must conduct a PIT count of homeless persons at least biennially. Mississippi has three CoC programs that cover its urban centers in Jackson and the remainder of its largely rural communities. The following data, provided by Mississippi CoCs, provide insight into the homeless population and service gaps.

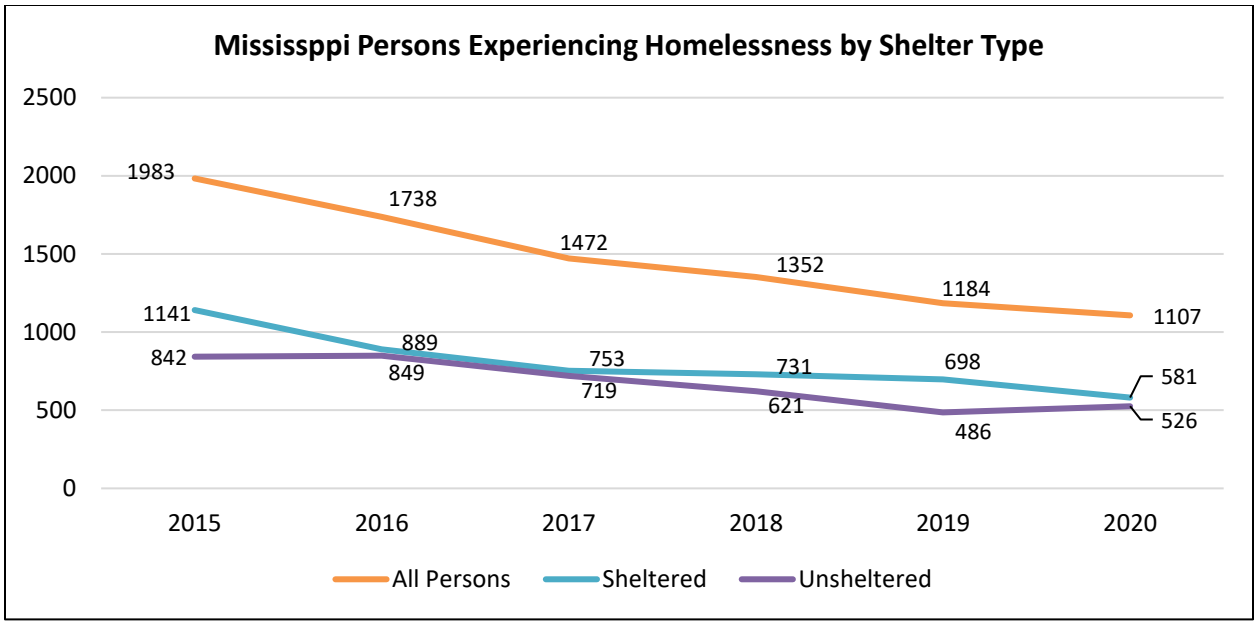
As of 2020, a total of 1,107 people in Mississippi were experiencing homelessness. Many of these individuals resided in the Jackson (36.7%) metro area. More than 1 in 10 individuals experiencing homelessness were youth under age 18 and/or chronically homeless, having experienced homelessness for at least one year. Approximately 6% of individuals were veterans. Black/African American people were disproportionately represented among individuals experiencing homelessness. **In Mississippi, Black/African American residents represent 36.6% of the total population, but 50% of individuals experiencing homelessness in 2020.**

The number of people experiencing homelessness declined in Mississippi through 2020, but it may have increased in 2021 due to economic hardships for individuals and families resulting from the COVID-19 pandemic. The 2021 PIT count is pending release and results should be interpreted with caution as many CoC programs did not conduct an unsheltered homeless count due to pandemic restrictions.

2020 Mississippi Point-in-Time Homeless Count by Continuum of Care (CoC) Program

	Jackson / Rankin & Madison Counties CoC	Gulf Port / Gulf Coast Regional CoC	Balance of State CoC	Mississippi Statewide
Total	406	254	447	1,107
Household Type				
Individuals	300	191	362	853
Families	106	63	85	254
Individual Characteristics				
Chronically homeless	80	3	63	146
Under age 18	69	40	56	165
Veterans	35	8	25	68
Race and Ethnicity				
White	142	167	203	512
Black/African American	255	69	230	554
Other race	9	18	14	41
Hispanic/Latinx	1	14	3	18

Source: U.S. Department of Housing and Urban Development Exchange



Source: U.S. Department of Housing and Urban Development Exchange

Related to housing concerns is access to computers and internet service. Termed the "digital divide," there is a growing gap between the underprivileged members of society—especially poor, rural, elderly and disabled populations—who do not have access to computers or the internet and the wealthy, middle-class and young Americans living in urban and suburban areas who have access.

Mississippi overall has lower digital access than the nation. North Mississippi service area counties, excluding Lafayette and Lowndes, have lower digital access than the state. Of note, only 60% to 66% of households in Benton, Calhoun, Panola and Union counties have an internet subscription and/or broadband internet.

2015-2019 Households by Digital Access

	With Computer Access			With Internet Access	
	Computer Device	Desktop / Laptop	Smartphone	Internet Subscription	Broadband Internet
Benton County	82.9%	45.2%	74.7%	59.4%	59.2%
Calhoun County	75.3%	52.8%	65.0%	65.4%	64.3%
Lafayette County	93.2%	79.9%	85.6%	83.2%	83.1%
Lowndes County	84.9%	65.0%	76.8%	77.4%	77.2%
Panola County	79.7%	52.5%	71.9%	60.7%	59.8%
Prentiss County	78.3%	55.0%	70.4%	71.9%	71.6%
Union County	81.2%	55.9%	74.2%	66.1%	66.1%
Mississippi	83.8%	63.2%	75.4%	71.9%	71.5%
United States	90.3%	77.8%	79.9%	83.0%	82.7%

Source: U.S. Census Bureau, American Community Survey

Illuminating Health Inequities

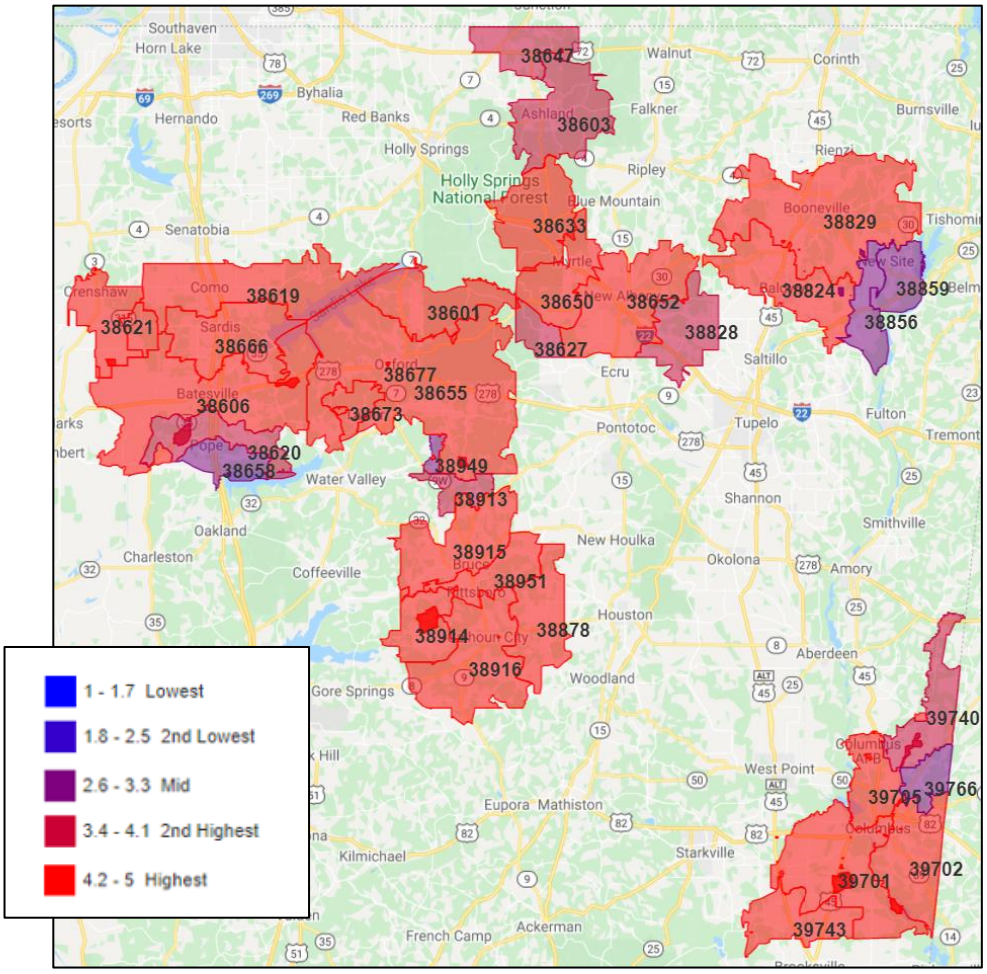
A host of indexes are available to illustrate the potential for health disparities and inequities at the community-level based on SDoH. A description of each index is provided below followed by data visualizations of each tool that show how well North Mississippi service area communities fare compared to state and national benchmarks.

Tools for Identifying Disparity

The following data visualizations illustrate the potential for health disparities and inequities at the community-level based on SDoH barriers. A description of each data visualization tool is provided below:

- **Community Need Index (CNI)**: The CNI is a ZIP code-based index of community socio-economic need calculated nationwide. The CNI scores ZIP codes on a scale of 1.0 to 5.0, with 1.0 indicating a ZIP code with the least need and 5.0 indicating a ZIP code with the most need compared to the U.S. national average of 3.0. The CNI weights, indexes and scores ZIP codes by socio-economic barriers, including income, culture, education, insurance and housing.
- **Vulnerable Population Footprint**: The Vulnerable Population Footprint identifies areas where high concentrations of people living in poverty and people living without a high school diploma overlap. Areas are reported by census tract. Census tracts are statistical subdivisions of a county that have roughly 4,000 inhabitants.
- **Area Deprivation Index (ADI)**: The ADI provides a census block group measure of socio-economic disadvantage based on income, education, employment and housing quality. ADI scores are displayed at the block group level on a scale from 1 (least disadvantaged) to 10 (most disadvantaged). A block group is a subdivision of a census tract and typically contains between 250 and 550 housing units.
- **Racial Disparities and Disproportionality Index (RDDI):** The RDDI was developed by the Corporation for Supportive Housing (CSH) to assess unique systems and measure whether a racial and/or ethnic group's representation in a particular public system is proportionate to, over or below their representation in the overall population. The index can be viewed as the likelihood of one group experiencing an event, compared to the likelihood of another group experiencing that same event. Results are provided on a state-by-state basis.

Community Need Index

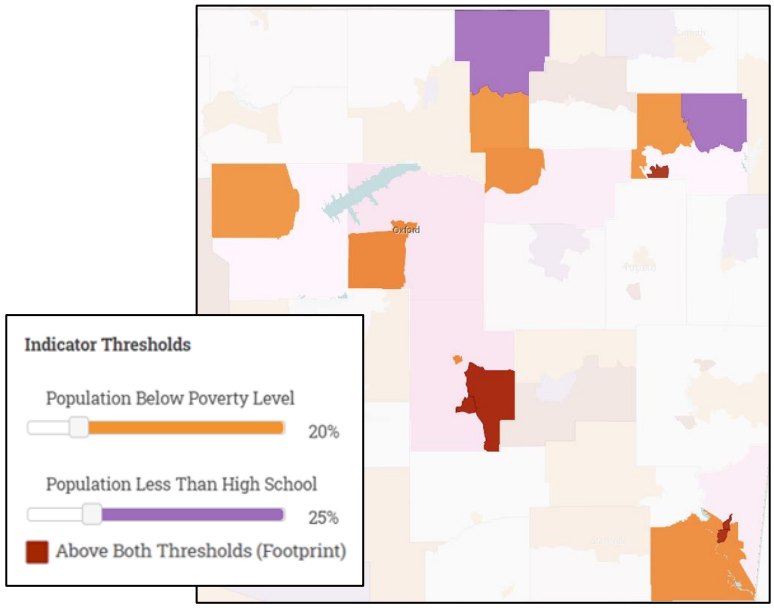


ZIP Code	Town	CNI Score	ZIP Code	Town	CNI Score
38949	Paris	3.0	38658	Pope	3.2
38856	Marietta	3.0	39766	Steens	3.2
38859	New Site	3.0			
38828	Blue Springs	3.4	38603	Ashland	3.6
39740	Caledonia	3.4	38647	Michigan City	3.6
38620	Courtland	3.6	38913	Banner	3.6
38627	Etta	3.6			
38655	Oxford	4.2	39702	Columbus	4.4
38673	Taylor	4.2	39743	Crawford	4.4
38650	Myrtle	4.2	38666	Sardis	4.6
38652	New Albany	4.2	38677	University	4.6
38824	Baldwyn	4.2	38601	Abbeville	4.6
38829	Booneville	4.2	38621	Crenshaw	4.6
38914	Big Creek	4.2	38619	Como	4.6
39705	Columbus	4.2	38878	Vardaman	4.6
38606	Batesville	4.4	38915	Bruce	4.6
38633	Hickory Flat	4.4	38916	Calhoun City	4.6
38951	Pittsboro	4.4	39701	Columbus	5.0

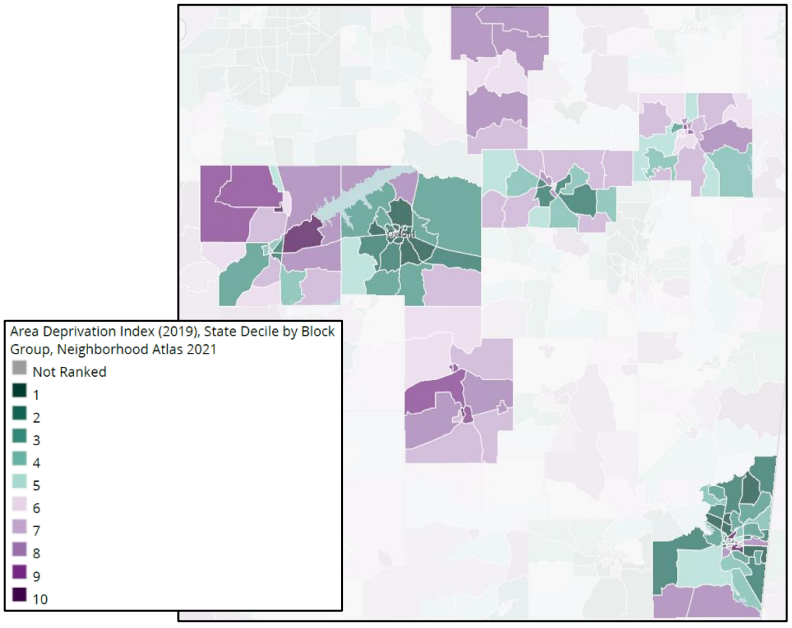
Lowest need

Highest need

Vulnerable Population Footprint



Area Deprivation Index



The North Mississippi service area has an average CNI score of 4.2, a consistent finding with the 2019 CHNA report of 4.3 and indicating high overall community need. **All but five ZIP codes in the service area score in high need categories.** Columbus ZIP code 39701 in Lowndes County continues to have the highest CNI score in the service area, with a maximum score of 5.0. Select census blocks in Columbus City have the maximum ADI score and are identified as vulnerable populations based on high concentrations of poverty and low educational attainment. Areas in and around Booneville in Prentiss County, Calhoun City in Calhoun County and Batesville in Panola also have high CNI scores and are identified as areas of disparity by the ADI and/or Vulnerable Population Footprint.

Comparing health indicators with population statistics demonstrates the adverse impact of SDoH on populations that historically and continually experience inequities. **Residents of Columbus ZIP code 39701 experience the most socio-economic barriers and are among the most diverse populations in the service area with a majority Black/African American population of 64.7%. Similarly, residents of Como ZIP code 38619 and Crenshaw ZIP code 38621 in Panola County experience notable disparities, including more than 40% of residents and 58% of children living in poverty.** More than half of residents in these ZIP codes identify as Black/African American. In this way we can begin to see how inequities perpetuate persistent disparities in health and social outcomes.

The following table lists the SDoH that contribute to ZIP code CNI scores and are often indicative of health disparities. ZIP codes with a CNI score of 3.4 or higher are shown, in descending order, by CNI score.

2015-2019 Social Determinants of Health by Geography
Red = Higher CNI Score from the 2019 CHNA

ZIP Code (County)	Population in Poverty	Children in Poverty	Primary Language Other Than English	Less than HS Diploma	Without Health Insurance	2022 CHNA CNI Score	2019 CHNA CNI Score
39701, Columbus (Lowndes)	29.0%	37.5%	3.4%	19.8%	17.2%	5.0	5.0
38601, Abbeville (Lafayette)	16.4%	26.8%	3.5%	10.9%	9.7%	4.6	4.6
38619, Como (Panola)	41.4%	58.9%	0.6%	21.5%	14.7%	4.6	4.6
38621, Crenshaw (Panola)	41.9%	59.2%	0.4%	22.3%	15.2%	4.6	4.8
38666, Sardis (Panola)	24.7%	45.1%	0.9%	21.8%	14.6%	4.6	4.8
38677, University (Lafayette)*	100.0%	0.0%	2.0%	50.0%	2.9%	4.6	4.8
38878, Vardaman (Calhoun)	24.0%	34.2%	12.3%	29.8%	15.1%	4.6	4.6
38915, Bruce (Calhoun)	20.4%	27.6%	4.9%	13.6%	15.4%	4.6	4.6
38916, Calhoun City (Calhoun)	26.4%	47.1%	3.2%	24.7%	10.0%	4.6	4.6
38606, Batesville (Panola)	14.5%	14.6%	1.2%	17.8%	10.9%	4.4	4.2
38633, Hickory Flat (Benton)	19.3%	30.3%	3.7%	14.4%	13.1%	4.4	4.4
38951, Pittsboro (Calhoun)	10.3%	11.9%	4.1%	25.1%	4.8%	4.4	4.2
39702, Columbus (Lowndes)	23.3%	32.1%	1.6%	14.4%	12.5%	4.4	4.6
39743, Crawford (Lowndes)	21.9%	52.0%	3.1%	20.4%	3.9%	4.4	4.4
38650, Myrtle (Union)	32.5%	50.9%	3.0%	31.0%	11.2%	4.2	4.2
38652, New Albany (Union)	13.0%	16.4%	5.4%	20.3%	10.6%	4.2	4.4
38655, Oxford (Lafayette)	23.1%	17.0%	6.0%	9.3%	9.1%	4.2	4.0
38673, Taylor (Lafayette)	7.1%	10.0%	0.5%	6.1%	4.2%	4.2	3.6
38824, Baldwyn (Prentiss)	20.4%	34.9%	0.7%	19.4%	15.1%	4.2	4.4
38829, Booneville (Prentiss)	22.6%	35.3%	3.8%	19.4%	11.3%	4.2	4.2
38914, Big Creek (Calhoun)	20.7%	19.0%	0.5%	27.8%	13.4%	4.2	4.2
39705, Columbus (Lowndes)	14.3%	27.2%	4.9%	8.4%	8.2%	4.2	4.2
38603, Ashland (Benton)	10.1%	3.4%	4.4%	29.6%	13.1%	3.6	4.0
38620, Courtland (Panola)	14.3%	18.9%	9.7%	15.4%	14.0%	3.6	3.4
38627, Etta (Union)	16.3%	11.1%	0.0%	25.2%	19.1%	3.6	3.6
38647, Michigan City (Benton)	43.6%	35.6%	0.0%	36.3%	22.1%	3.6	3.8
38913, Banner (Calhoun)	11.3%	9.8%	2.9%	24.1%	6.5%	3.6	3.6
38828, Blue Springs (Union)	7.5%	9.0%	0.5%	27.2%	10.6%	3.4	4.0
39740, Caledonia (Lowndes)	11.8%	15.4%	4.3%	11.6%	4.6%	3.4	3.6
Mississippi	20.3%	28.7%	4.0%	15.5%	12.3%	NA	NA
United States	13.4%	18.5%	21.6%	12.0%	8.8%	NA	NA

Source: U.S. Census Bureau, American Community Survey
*Home ZIP code for the University of Mississippi; data are skewed by university students.

2015-2019 Population (Pop.) by Prominent Racial and Ethnic Groups

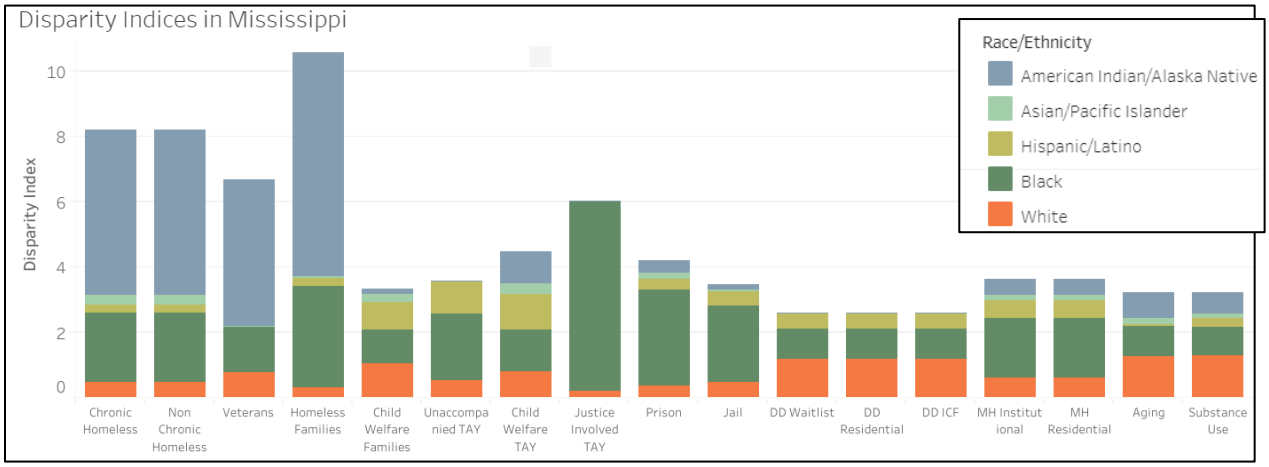
ZIP Code (County)	Total Pop.	White	Black or African American	Two or More Races	Latinx origin (any race)
39701, Columbus (Lowndes)	13,346	33.4%	64.7%	1.1%	2.6%
38601, Abbeville (Lafayette)	2,073	54.1%	41.8%	2.2%	2.6%
38619, Como (Panola)	5,368	38.3%	55.4%	6.3%	2.3%
38621, Crenshaw (Panola)	1,791	23.3%	75.0%	0.4%	0.9%
38666, Sardis (Panola)	6,546	44.7%	54.7%	0.3%	0.9%
38677, University (Lafayette)	4,120	84.4%	10.9%	1.9%	1.6%
38878, Vardaman (Calhoun)	3,111	67.8%	16.8%	0.3%	15.9%
38915, Bruce (Calhoun)	3,422	67.6%	24.9%	1.3%	5.2%
38916, Calhoun City (Calhoun)	4,945	55.6%	39.2%	3.1%	3.0%
38606, Batesville (Panola)	15,594	51.2%	45.7%	2.8%	0.7%
38633, Hickory Flat (Benton)	2,270	91.8%	8.1%	0.1%	2.2%
38951, Pittsboro (Calhoun)	1,074	54.2%	45.8%	0.0%	3.5%
39702, Columbus (Lowndes)	23,215	50.6%	48.1%	0.7%	1.5%
39743, Crawford (Lowndes)	1,394	14.1%	85.7%	0.1%	0.0%
38650, Myrtle (Union)	4,165	85.3%	6.7%	4.8%	3.3%
38652, New Albany (Union)	16,775	72.2%	21.3%	1.1%	6.4%
38655, Oxford (Lafayette)	43,536	70.1%	24.7%	0.8%	2.9%
38673, Taylor (Lafayette)	874	49.1%	49.1%	0.3%	0.0%
38824, Baldwyn (Prentiss)	7,301	74.8%	22.2%	2.6%	0.5%
38829, Booneville (Prentiss)	19,023	83.8%	8.5%	4.3%	1.9%
38914, Big Creek (Calhoun)	894	75.2%	17.8%	7.0%	0.0%
39705, Columbus (Lowndes)	12,695	62.2%	31.0%	3.1%	2.7%
38603, Ashland (Benton)	3,071	69.9%	25.4%	1.3%	5.3%
38620, Courtland (Panola)	3,571	64.1%	34.9%	0.9%	11.0%
38627, Etta (Union)	1,375	100.0%	0.0%	0.0%	0.0%
38647, Michigan City (Benton)	711	18.4%	69.6%	12.0%	0.0%
38913, Banner (Calhoun)	460	97.2%	0.0%	0.0%	2.8%
38828, Blue Springs (Union)	4,293	86.5%	11.3%	1.6%	0.7%
39740, Caledonia (Lowndes)	5,297	86.0%	11.1%	0.7%	2.5%
Mississippi	2,984,418	58.4%	37.7%	1.4%	3.1%
United States	324,697,795	72.5%	12.7%	3.3%	18.0%

Source: U.S. Census Bureau, American Community Survey

The RDDI measures whether a racial group's representation in a particular public system is proportionate to their representation in the overall population. Public systems include homelessness, veterans, prison/justice systems, child welfare, developmental disabilities, mental health institutions, aging population and substance use. An index of 1 signifies equal representation; an index below 1 signifies underrepresentation and an index above 1 signifies overrepresentation in a system.

Across Mississippi, American Indian/Alaska Native residents represent less than 1% of the total population but are the most overrepresented in public systems with an index score of 5.07. Black/African American people also have a higher index score of 2.09, indicating overrepresentation in

public systems. **In Mississippi, Black/African American people are most overrepresented in prison and justice systems.** This finding is consistent with systemic issues of racism within the nation's criminal justice system that leads to disproportionate incarceration and sentencing among people of color.



Source: Corporation for Supportive Housing
*TAY: Transition-age youth; DD: Developmental Disability; MH: Mental Health

Life expectancy is another measure of adverse SDoH. Across Mississippi, life expectancy is highest for Latinx and Asian residents. Life expectancy disparity trends are largely reflected in mortality data presented in this report. In service area counties with notable life expectancy differences between white and Black/African American people (Calhoun, Lafayette, Lowndes and Panola), the all-cause death rate among Black/African American people is approximately 100 to 250 points higher than for white people. In Prentiss County, where Black/African American people have higher life expectancy than white people, the all-cause death rate is lower for Black/African American people than white people.

Consistent with having overall positive socio-economic indicators, Lafayette County has the highest life expectancy in the North Mississippi service area and higher life expectancy than the state. In contrast, Benton and Panola counties have lower overall life expectancy than Mississippi, living on average 1.5 years less than their peers statewide.

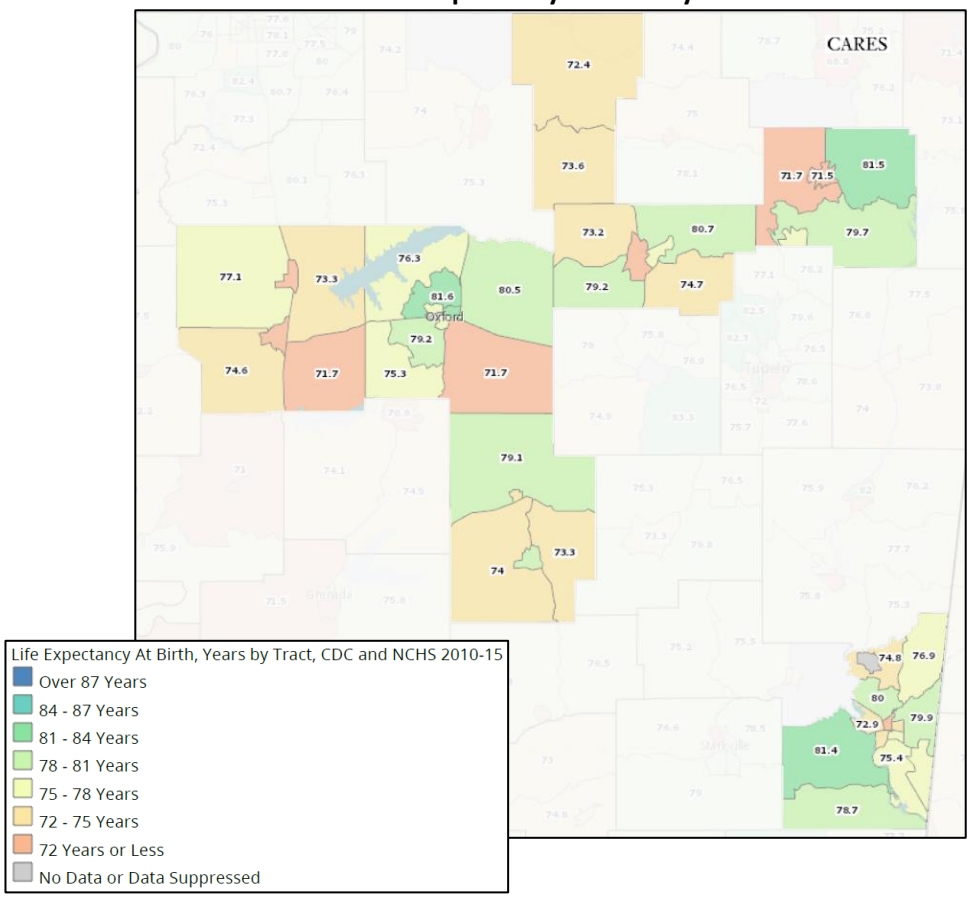
At the census tract-level, areas of lower life expectancy largely align with areas of more socio-economic barriers and racial inequities. **Life expectancy in and around Columbus, Booneville and Batesville is less than 73 years.** Similar disparities in life expectancy are also seen in Sardis in Panola County and New Albany in Union County.

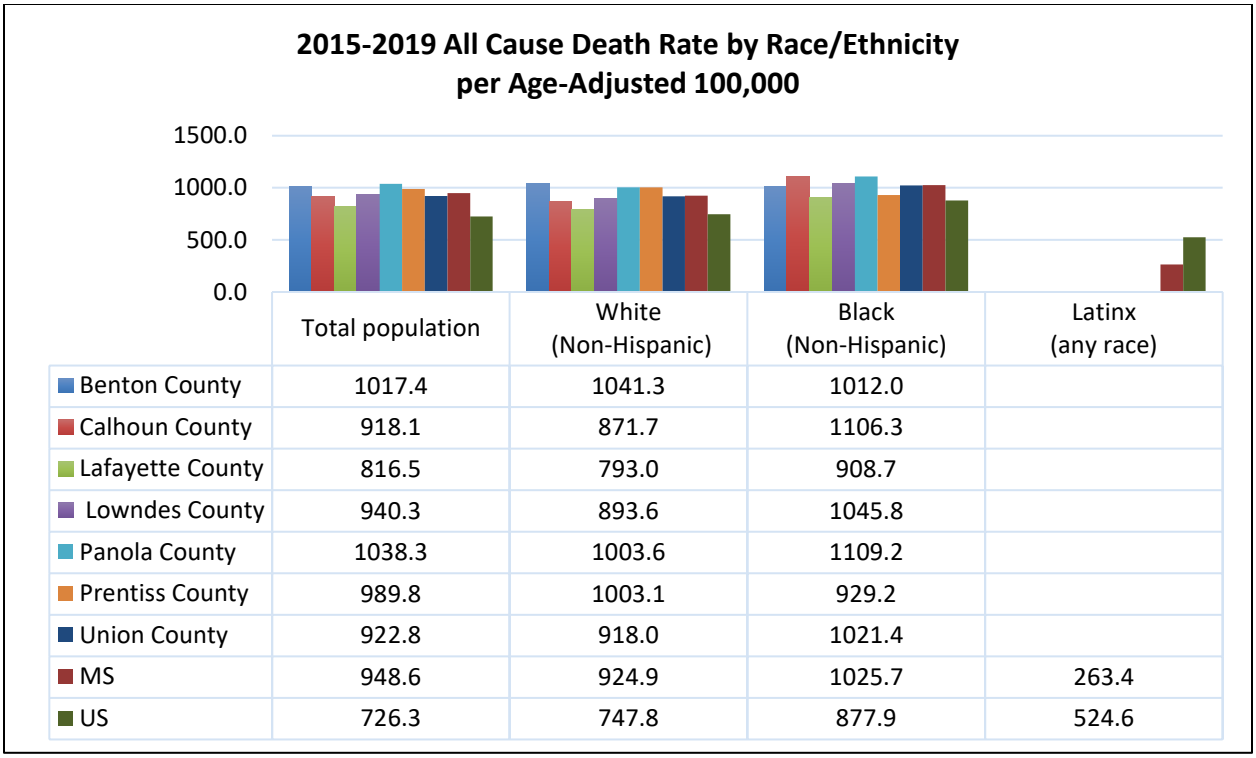
2017-2019 Life Expectancy by Race and Ethnicity

	Overall Life Expectancy	White	Black	Asian	Latinx origin (any race)
Benton County	73.5	73.5	72.5	NA	NA
Calhoun County	75.4	76.4	72.5	NA	NA
Lafayette County	78.1	79.2	74.9	NA	NA
Lowndes County	74.6	75.5	72.9	NA	NA
Panola County	73.4	74.4	72.3	NA	NA
Prentiss County	74.0	73.8	76.1	NA	NA
Union County	76.2	76.2	75.1	NA	NA
Mississippi	74.9	75.7	73.1	84.9	100.4

Source: National Vital Statistics System

2010-2015 Life Expectancy at Birth by Census Tract





	Total population	White (Non-Hispanic)	Black (Non-Hispanic)	Latinx (any race)
Benton County	1017.4	1041.3	1012.0	
Calhoun County	918.1	871.7	1106.3	
Lafayette County	816.5	793.0	908.7	
Lowndes County	940.3	893.6	1045.8	
Panola County	1038.3	1003.6	1109.2	
Prentiss County	989.8	1003.1	929.2	
Union County	922.8	918.0	1021.4	
MS	948.6	924.9	1025.7	263.4
US	726.3	747.8	877.9	524.6

Source: Centers for Disease Control and Prevention
*Latinx data are not available by county due to low death counts.

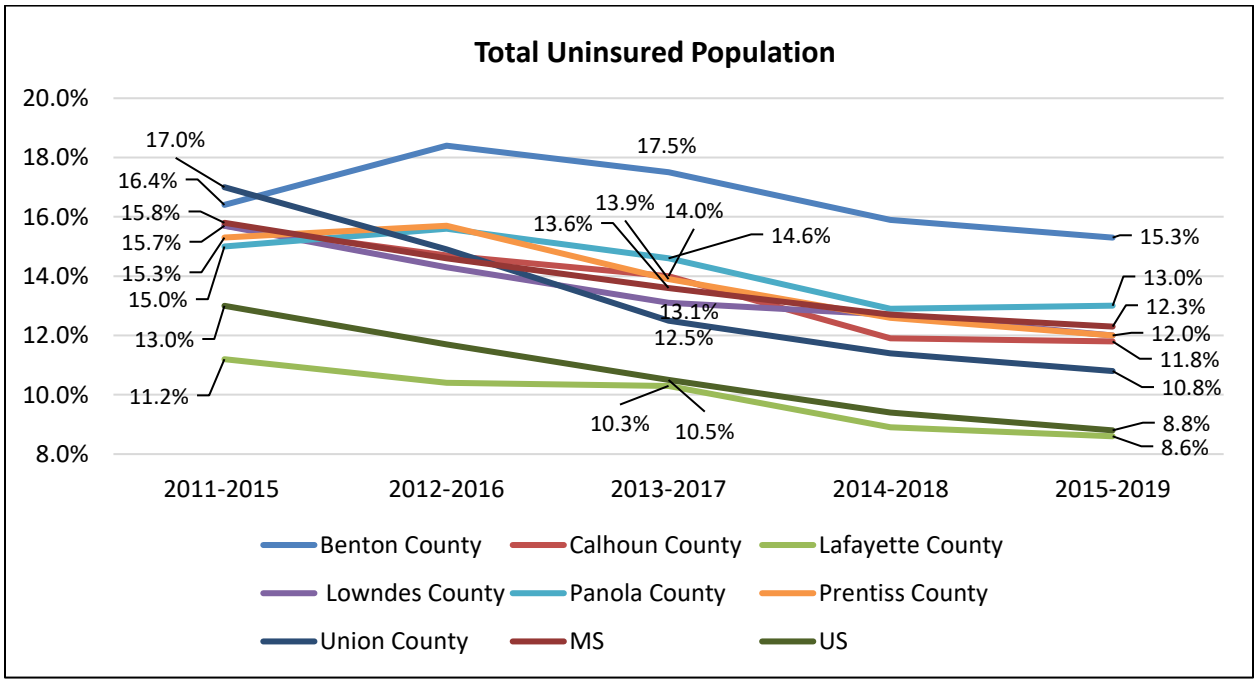
A Closer Look at Health Statistics

Access to Health Care

The percentage of uninsured residents in the North Mississippi service area continued to decline from the 2019 CHNA. From 2011-2015 to 2015-2019, the percent uninsured declined approximately 1 to 6 percentage points across the service area, with the largest decline in Union County. Mississippi did not expand Medicaid under the Affordable Care Act, and outside of Union County, the percent uninsured declined at a slower rate than the nation overall. All counties except Lafayette and Lowndes have a higher percentage of residents covered by Medicaid than the nation overall, but only Benton and Calhoun counties saw an increase in Medicaid coverage from the 2019 CHNA.

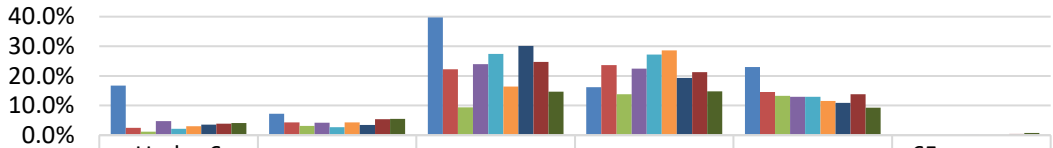
Consistent with age and socio-economic factors, approximately half of residents in Benton, Calhoun, Panola and Prentiss counties are insured by Medicaid and/or Medicare, a higher proportion than the state and nation. Lowndes and Union counties largely mirror statewide insurance trends, while Lafayette County residents are more likely to have employer-based insurance than both the state and nation.

Despite overall improvement in the percent uninsured across the North Mississippi service area, all counties except Lafayette have a higher uninsured percentage than the nation, and no counties meet the HP2030 goal of 92.1% insured residents. **Benton County continues to have the highest percent uninsured, particularly affecting young adults.** Nearly 40% of Benton County young adults age 19 to 25 are uninsured compared with 14.7% nationally. Calhoun, Lowndes and Panola counties also have a high percentage of uninsured young adults, as well as a high percentage of uninsured working age adults 26 to 44 years old.



Source: U.S. Census Bureau, American Community Survey

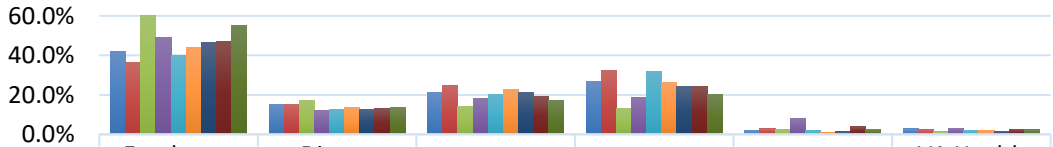
Uninsured Population by Age



	Under 6 years	6-18 years	19-25 years	26-44 years	45-64 years	65 years or over
Benton County	16.7%	7.2%	39.7%	16.2%	23.0%	0.0%
Calhoun County	2.5%	4.3%	22.2%	23.6%	14.5%	0.0%
Lafayette County	1.2%	3.1%	9.4%	13.8%	13.3%	0.0%
Lowndes County	4.8%	4.2%	24.0%	22.4%	13.0%	0.0%
Panola County	2.2%	2.7%	27.4%	27.2%	12.9%	0.1%
Prentiss County	3.0%	4.3%	16.4%	28.6%	11.6%	0.0%
Union County	3.6%	3.5%	30.1%	19.3%	10.9%	0.0%
MS	3.9%	5.4%	24.7%	21.3%	13.8%	0.4%
US	4.1%	5.5%	14.7%	14.8%	9.3%	0.8%

Source: U.S. Census Bureau, American Community Survey

Insured Population by Coverage Type (alone or in combination)



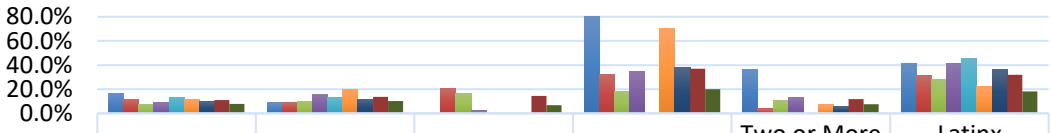
	Employer-based	Direct-purchase	Medicare	Medicaid	TRICARE	VA Health Care
Benton County	41.7%	15.1%	21.3%	26.6%	1.9%	2.8%
Calhoun County	36.4%	15.3%	24.5%	32.2%	2.8%	2.3%
Lafayette County	60.7%	17.2%	14.3%	13.2%	2.4%	1.3%
Lowndes County	49.1%	11.9%	18.3%	18.7%	7.8%	3.2%
Panola County	39.9%	12.8%	20.4%	31.8%	1.8%	1.9%
Prentiss County	43.8%	13.8%	22.6%	26.3%	0.8%	1.8%
Union County	46.7%	12.8%	21.2%	24.1%	1.4%	1.6%
MS	46.8%	13.0%	19.0%	24.1%	3.9%	2.6%
US	55.2%	13.6%	17.3%	20.2%	2.7%	2.3%

Source: U.S. Census Bureau, American Community Survey

The uninsured percentage declined for all racial and ethnic groups across Mississippi, but individuals of color continue to be disproportionately uninsured compared to white people. Approximately 1 in 3 "other race" and Latinx residents are uninsured compared to 1 in 10 white residents. "Other race" has

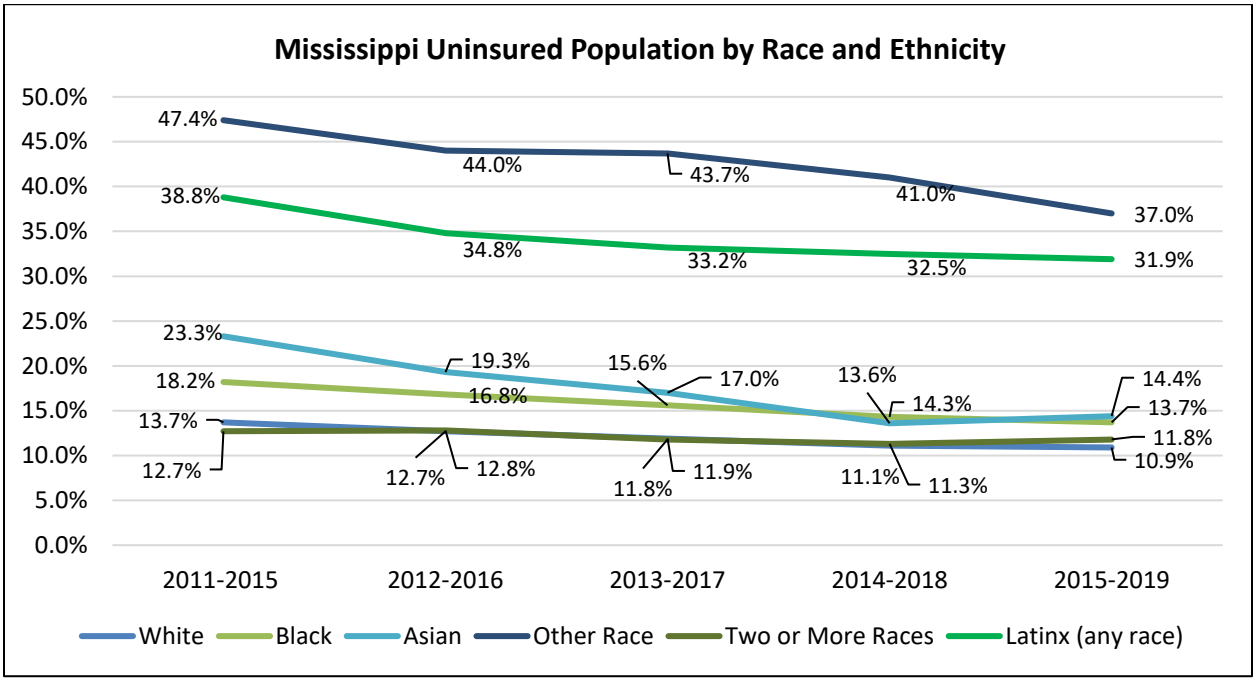
historically captured ethno-racially mixed individuals, as well as Latinx individuals who do not consider ethnicity as separate or distinct from race. Notable racial and ethnic uninsured disparities also exist across the North Mississippi service area, although uninsured percentages among non-white and non-Black/African American residents generally reflect small population counts. Among Black/African American residents, disparities in Lowndes and Prentiss counties should be further explored.

Uninsured Population by Race and Ethnicity



	White	Black	Asian	Other Race	Two or More Races	Latinx (any race)
Benton County	16.4%	9.1%	0.0%	80.8%	36.1%	41.6%
Calhoun County	11.5%	9.0%	20.6%	32.5%	3.7%	31.0%
Lafayette County	7.7%	10.2%	16.2%	18.1%	10.9%	28.2%
Lowndes County	8.7%	16.0%	2.1%	34.3%	13.4%	41.4%
Panola County	13.5%	13.1%	0.0%	0.0%	0.0%	45.5%
Prentiss County	11.4%	19.5%	0.0%	70.1%	7.1%	22.1%
Union County	9.7%	11.8%	0.0%	37.7%	5.7%	36.3%
MS	10.9%	13.7%	14.4%	37.0%	11.8%	31.9%
US	7.9%	10.1%	6.7%	19.9%	7.7%	18.2%

Source: U.S. Census Bureau, American Community Survey



Source: U.S. Census Bureau, American Community Survey

Availability of health care providers also impacts access to care and health outcomes. Mississippi has fewer primary care providers than the nation, as indicated by a rate of providers per 100,000. Within the North Mississippi service area, all counties have a lower primary care provider rate than the nation, and all counties except Lafayette have a lower provider rate than the state. Benton, Calhoun, Panola, Prentiss and Union counties, representing a population of over 105,000, are served by a total of 34 physicians. **Benton, Calhoun and Panola counties are designated by the Federal Department of Health and Human Services as High Needs Health Professional Shortage Areas (HPSA). Union County is a HPSA for low-income individuals.** Despite differences in access to primary care, a similar proportion of service area adults have had a recent physical checkup in comparison to the state and nation.

Mississippi overall has fewer dentists than the nation and fewer adults receiving regular dental care. All North Mississippi service area counties except Lowndes have fewer dentists than the state, and all counties except Lafayette have fewer adults receiving dental care. **Less than half of adults in Benton, Calhoun, Panola and Prentiss counties have received dental care within the past year. These four counties are served by a combined 25 dentists.** Calhoun, Lowndes and Union counties are designated as High Needs dental HPSAs; Prentiss County is a dental HPSA for low-income individuals.

When viewed at the ZIP code-level, disparities in adult dental care access generally align with existing socio-economic barriers and racial inequities. **In Columbus in Lowndes County, 42.3% of adults in ZIP code 39701 have received recent dental care compared to 58.9% of adults in neighboring ZIP code 39705.** Residents of ZIP code 39701 are more than twice as likely to identify as Black/African American and/or live in poverty.

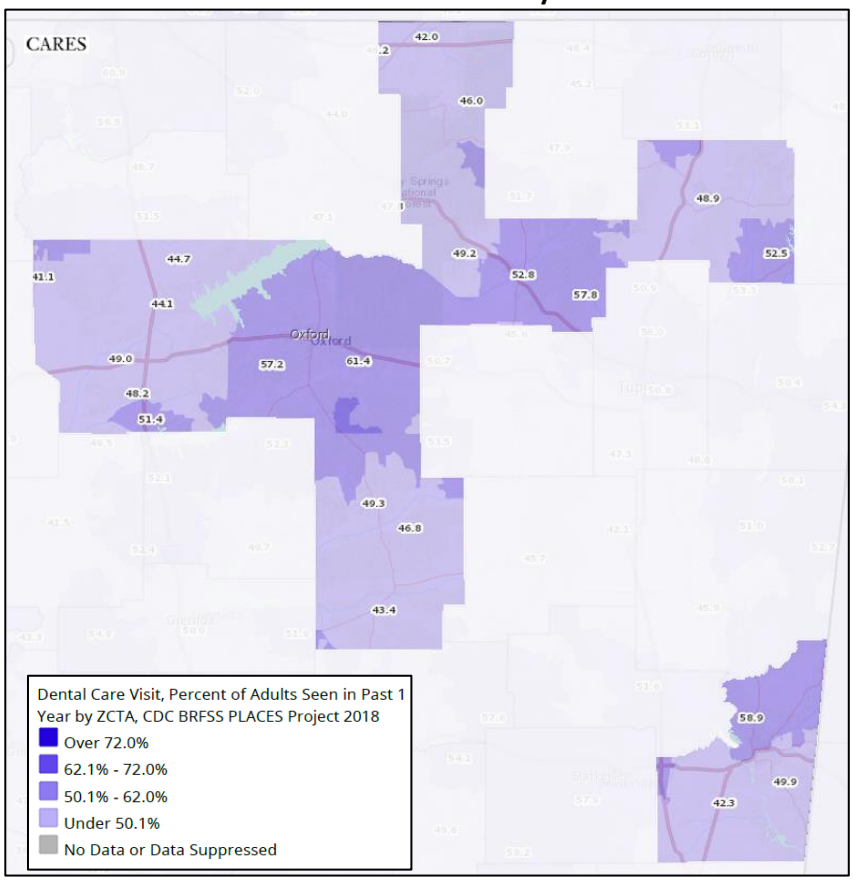
COVID-19 had a significant impact on access to care. Individuals nationwide delayed regular preventive and maintenance care due to fear of contracting COVID-19 in a health care setting and new financial constraints, among other concerns. Nationally, the percentage of adults receiving a routine physical checkup declined from 77.6% in 2019 to 76% in 2020. **Mississippi did not see a notable decline in care access from 2019 (77.3%) to 2020 (77.1%).** Note: county-level data for 2020 are not yet available.

Primary and Dental Provider Rates and Adult Health Care Access

	Primary Care		Dental Care	
	Physicians per 100,000 Population (2018)	Routine Checkup within Past Year (2018)*	Dentists per 100,000 Population (2019)	Dental Visit within Past Year (2018)*
Benton County	12.1 (n=1)	74.5%	24.2 (n=2)	44.7%
Calhoun County	13.9 (n=2)	73.7%	20.9 (n=3)	46.0%
Lafayette County	62.1 (n=34)	75.0%	46.3 (n=25)	60.2%
Lowndes County	47.5 (n=28)	76.0%	56.3 (n=33)	50.9%
Panola County	20.5 (n=7)	77.2%	26.3 (n=9)	46.2%
Prentiss County	39.5 (n=10)	73.7%	43.8 (n=11)	48.3%
Union County	48.9 (n=14)	73.2%	38.2 (n=11)	52.3%
Mississippi	52.9	75.8%	48.8	54.5%
United States	75.8	75.1%	71.4	66.2%

Source: Health Resources and Services Administration & Centers for Disease Control and Prevention, PLACES & BRFSS
*Data are reported as age-adjusted percentages.

North Mississippi Service Area Adults with an Annual Dental Visit by ZIP Code



Health Risk Factors and Chronic Disease

Routine preventive care contributes to fewer health risk factors and better health status. Despite a similar proportion of adults in the North Mississippi service area accessing primary care services as the state and nation overall, they are generally less healthy than their peers, including more health risk factors and higher prevalence and mortality due to chronic disease.

Mississippi adults overall have increased risk factors for chronic disease, including lack of physical activity and tobacco use. **All North Mississippi service area counties exceed national benchmarks for poor physical health and smoking; all counties except Lafayette and Lowndes also exceed Mississippi benchmarks.** Approximately one-third of adults in Benton, Calhoun, Panola, Prentiss and Union counties are physically inactive and one-quarter use tobacco.

The following report sections further explore health risk factors and chronic disease, and their connection to underlying SDoH. Social determinants of health not only lead to poorer health outcomes and the onset of disease, but they are also likely to impede disease management and treatment efforts, further exacerbating poorer health outcomes.

2018 Age-Adjusted Adult (18+) Physical Health Outcomes

	Physical Health Not Good for 14 or More Days in Past 30 Days	No Leisure-Time Physical Activity in Past 30 Days
Benton County	16.8%	35.5%
Calhoun County	16.6%	35.1%
Lafayette County	12.7%	25.5%
Lowndes County	14.6%	28.5%
Panola County	16.6%	36.0%
Prentiss County	17.7%	34.9%
Union County	14.9%	32.4%
Mississippi	14.5%	30.9%
United States	11.8%	23.6%

Source: Centers for Disease Control and Prevention, PLACES & BRFSS

2018 Age-Adjusted Adults (18+) Who Are Current Smokers*

	Percentage
Benton County	26.5%
Calhoun County	25.6%
Lafayette County	18.6%
Lowndes County	21.6%
Panola County	24.8%
Prentiss County	26.1%
Union County	23.8%
Mississippi	20.8%
United States	15.9%

Source: Centers for Disease Control and Prevention, BRFSS

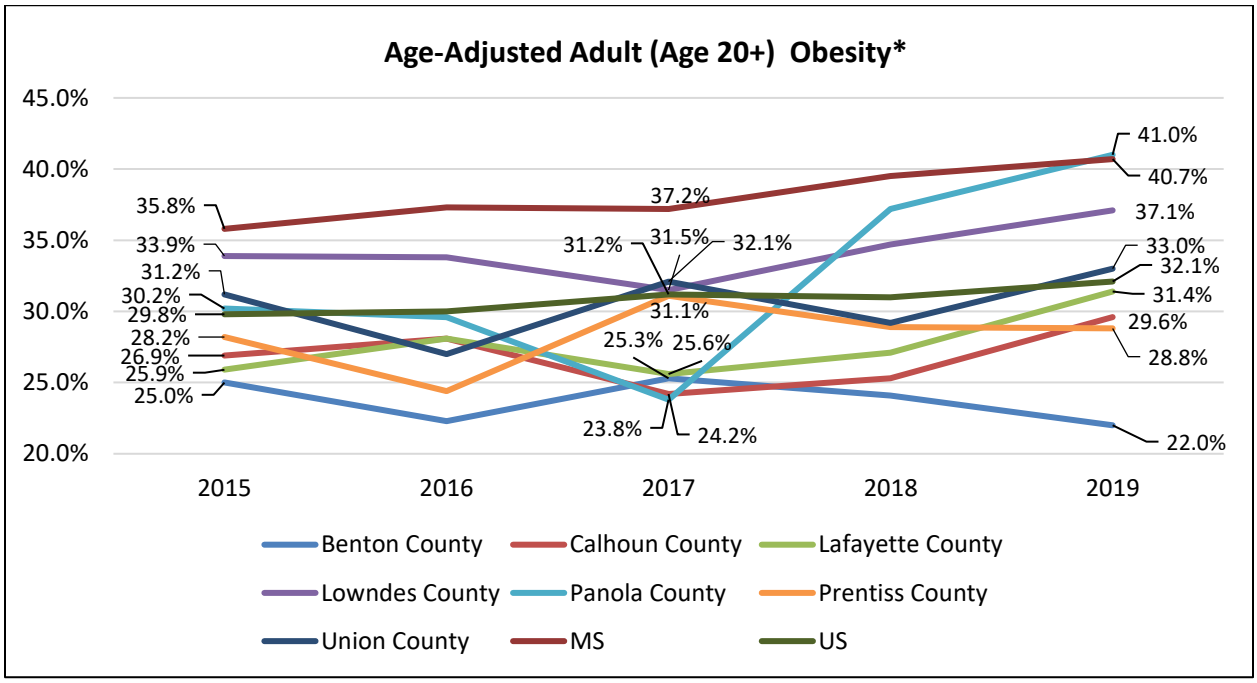
*A change in reporting methodology occurred in 2018 providing age-adjusted county percentages. Data prior to 2018 were reported as crude percentages and are not comparable.

Obesity and Diabetes

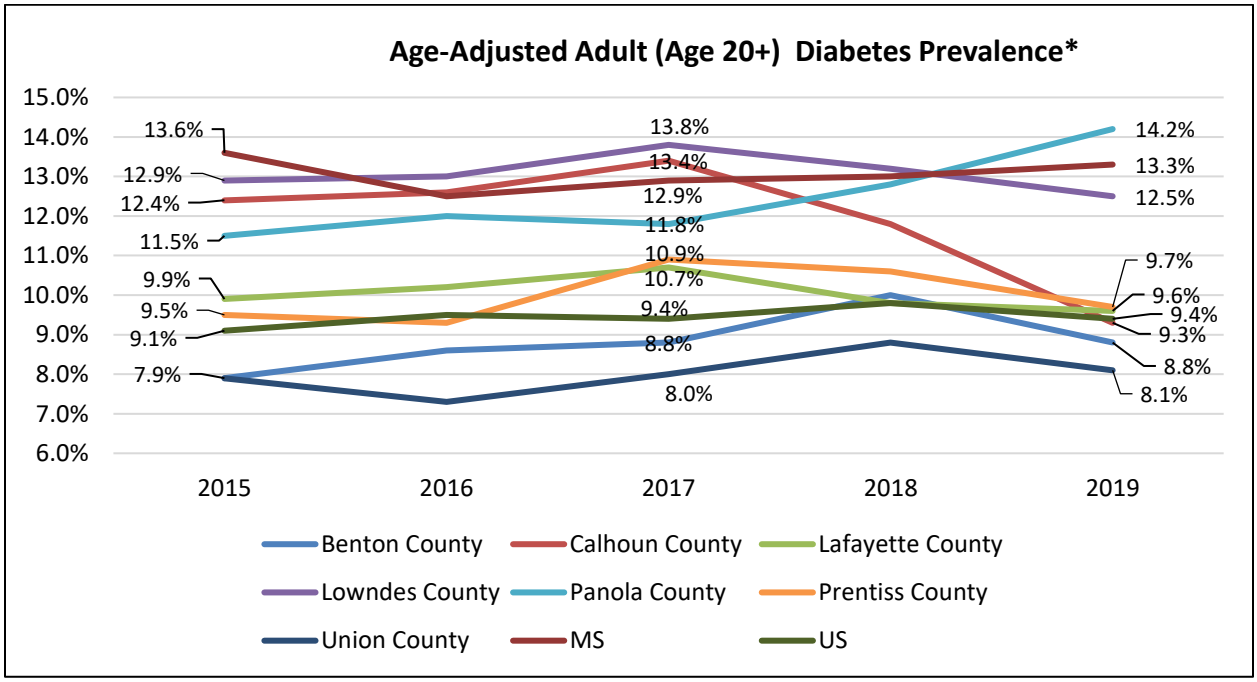
Mississippi adults overall have historically higher prevalence of obesity and diabetes than the nation. In the North Mississippi service area, approximately one-quarter to one-third of adults have obesity and 1 in 10 adults have diabetes. **Panola and Lowndes counties have the highest prevalence of adult obesity and diabetes in the service area. Of note, Panola County saw the largest percentage point increase in adult obesity (+11 points) and diabetes (+3 points) from 2015 to 2019.** Benton and Calhoun counties have lower adult obesity and diabetes than the state and nation, but higher rates of diabetes death, potentially indicating a need for diabetes care management services. **The Benton County diabetes death rate is more than double state and national rates, and contrary to state and national trends, increased in recent years.**

Note: State and national obesity and diabetes prevalence data are reported for adults aged 18 or older, while county-level data are reported for adults age 20 or older, based on data availability. Comparisons between the counties, state and nation should be interpreted with caution.

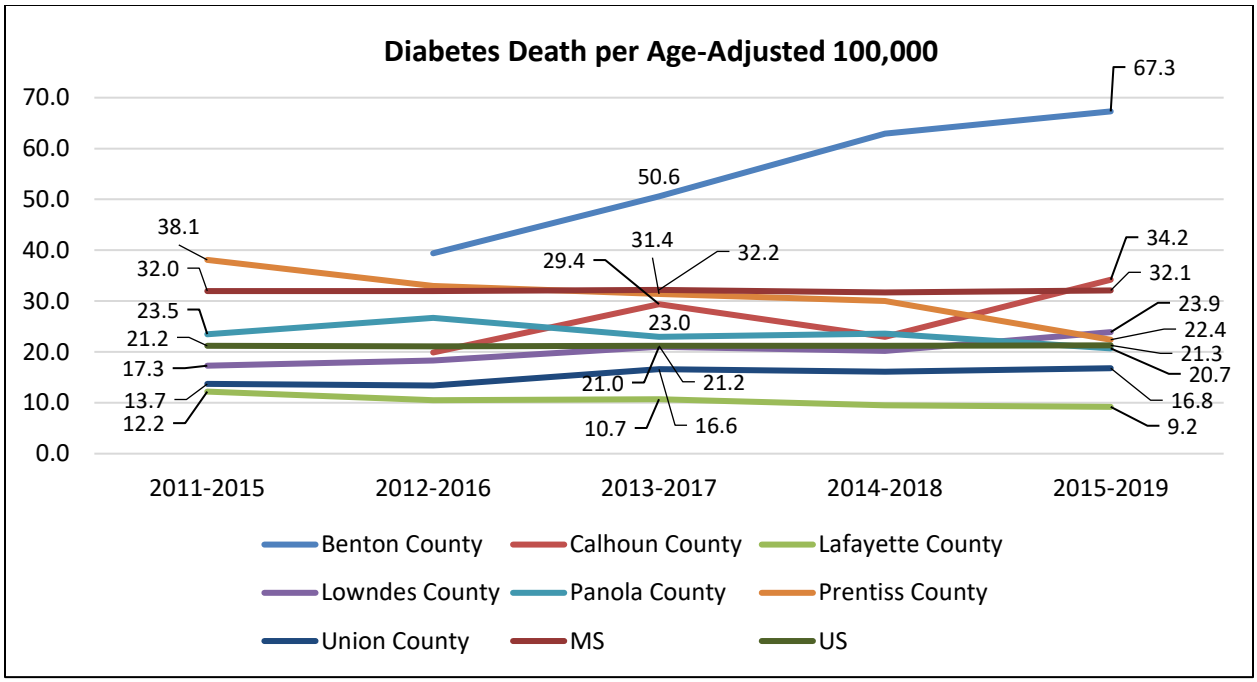
Mississippi overall has a higher rate of death due to diabetes than the nation, largely due to disparities among Black/African American people. **Across Mississippi, there is a more than 33-point difference in the death rate between white and Black/African American people.** A similar disparity is seen in Lowndes County.



Source: Centers for Disease Control and Prevention, US Diabetes Surveillance System & BRFSS
*State and national data are reported as a percentage of adults age 18+ based on data availability.



Source: Centers for Disease Control and Prevention, US Diabetes Surveillance System & BRFSS
*State and national data are reported as a percentage of adults age 18+ based on data availability.



Source: Centers for Disease Control and Prevention
*Death rate data are not available for Benton and Calhoun counties prior to 2012-2016.

2015-2019 Diabetes Death Rate per Age-Adjusted 100,000 by Race and Ethnicity

	Total Population	White, Non-Hispanic	Black or African American, Non-Hispanic	Latinx origin (any race)
Benton County	67.3	66.9	NA	NA
Calhoun County	34.2	31.8	NA	NA
Lafayette County	9.2	NA	NA	NA
Lowndes County	23.9	12.8	44.1	NA
Panola County	20.7	NA	39.1	NA
Prentiss County	22.4	21.5	NA	NA
Union County	16.8	NA	NA	NA
Mississippi	32.1	22.6	55.8	NA
United States	21.3	18.8	38.3	25.1

Source: Centers for Disease Control and Prevention

Heart Disease

Heart disease is the leading cause of death nationally. High blood pressure and cholesterol are two of the primary causes of heart disease and can be preventable. **Mississippi and North Mississippi service area adults have a higher prevalence of high blood pressure and/or high cholesterol than the nation overall, and a higher rate of death due to heart disease.** Within the North Mississippi service area, all counties except Lafayette and Union exceed the statewide benchmark for high blood pressure, and all counties except Benton and Calhoun exceed the statewide rate of death due to heart disease. While the

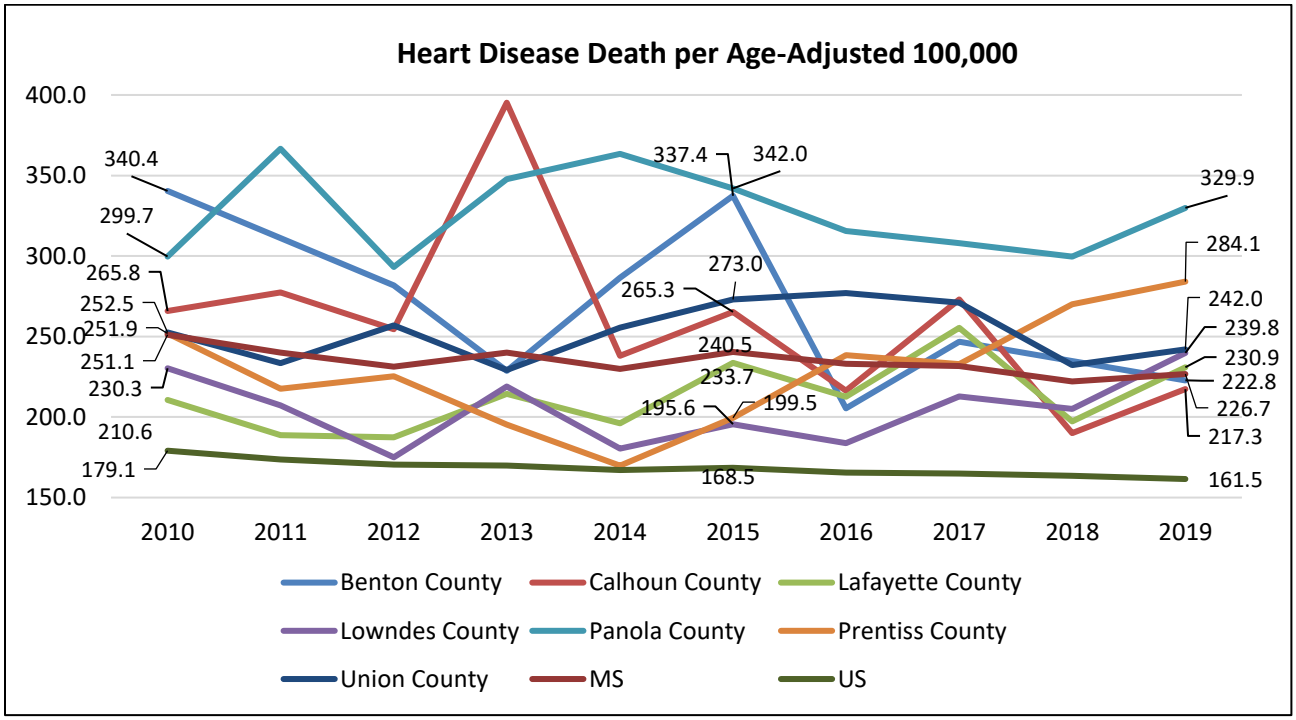
rate of death due to heart disease generally declined across Mississippi and the U.S., it has been variable among North Mississippi service area counties. Lafayette, Lowndes, Panola and Prentiss counties report a higher rate of death in 2019 than in 2010.

Across Mississippi, the nation and all North Mississippi service area counties except Prentiss, heart disease death rates are higher among Black/African American people than other racial or ethnic groups. **Calhoun County has the largest disparity in heart disease death rates between Black/African American and white people at nearly 100 points.** Of note, Black/African American residents of Prentiss County have a lower rate of heart disease death than white residents and higher overall life expectancy.

2017 Age-Adjusted Adult (Age 18+) Heart Disease Risk Factors Prevalence

	Adults with High Blood Pressure	Adults with High Cholesterol
Benton County	40.9%	33.7%
Calhoun County	39.6%	34.2%
Lafayette County	36.1%	33.0%
Lowndes County	39.8%	33.2%
Panola County	40.7%	33.3%
Prentiss County	39.1%	34.5%
Union County	36.9%	34.4%
Mississippi	38.2%	33.5%
United States	29.7%	29.3%

Source: Centers for Disease Control and Prevention, PLACES & BRFSS



Source: Centers for Disease Control and Prevention

2015-2019 Heart Disease Death Rate per Age-Adjusted 100,000 by Race and Ethnicity

	Total Population	White, Non-Hispanic	Black or African American, Non-Hispanic	Latinx origin (any race)
Benton County	229.2	219.0	245.8	NA
Calhoun County	231.9	211.5	310.9	NA
Lafayette County	225.7	214.8	264.5	NA
Lowndes County	207.6	200.8	215.0	NA
Panola County	319.2	288.7	366.1	NA
Prentiss County	245.1	249.5	215.7	NA
Union County	258.5	256.9	286.6	NA
Mississippi	230.7	223.8	250.2	51.8
United States	164.8	168.5	208.7	113.9

Source: Centers for Disease Control and Prevention

Cancer

Cancer is the second leading cause of death nationally. Mississippi overall has higher cancer incidence and death rates than the nation. This finding is likely reflective of both increased health risk factors and lower access to cancer screenings for early detection and treatment. Mississippi adults are less likely to receive cancer screenings compared to national benchmarks.

All North Mississippi service area counties have a lower rate of cancer incidence than Mississippi and the nation, but all counties except Lafayette and Panola have higher death rates. This finding suggests delayed cancer screening and later stage diagnosis. All counties have fewer women receiving mammograms when compared to the state, and all counties except Lafayette and Union have fewer adults receiving colorectal cancer screenings. Note: A higher percentage of women in all counties receive cervical cancer screenings when compared to the state, a finding that should be explored for success factors in promoting other preventive practices.

Higher cancer death rates in the service area are also due to disparities in lung cancer and may be a result of higher smoking rates. All counties have a higher rate of lung cancer death than the nation; Lowndes, Panola, Prentiss and Union counties also have a higher rate of death than the state.

Overall cancer death rates have been variable in all service area counties since 2010, but generally increased in Lowndes and Union counties. **From 2010 to 2019, the cancer death rate increased 61.9 points in Union County and 49.5 points in Lowndes County.** Lowndes County had the highest cancer death rate in the service area and higher rates of death due to female breast, colorectal, lung and prostate cancer than the state and nation.

Panola County saw a notable decline in cancer death in 2018 and 2019, but it has historically had a higher rate of death than both the state and nation. Based on 2014 to 2018 aggregate data, Panola County had the highest cancer incidence and death rates in the service area and exceeded state and national death rates due to female breast, colorectal, lung and prostate cancers. Cancer disparities in Panola County should continue to be monitored.

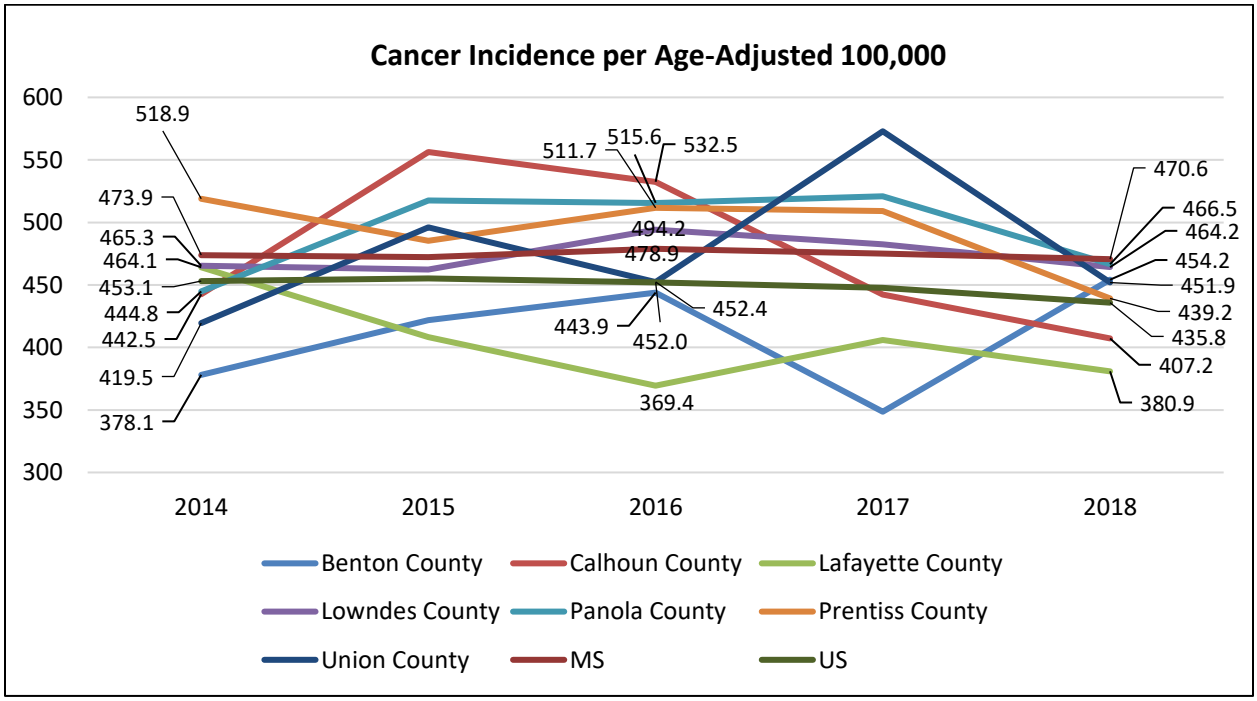
Lafayette County differs from other service area counties with overall positive cancer outcomes. The county has a lower, declining rate of cancer incidence than the state and nation and nearly meets the HP2030 goal for cancer-related death. While cancer screening practices are low across the service area, they are better in Lafayette County relative to other counties.

Consistent with the state and nation, cancer disparities in the North Mississippi service area disproportionately affect Black/African American people. **Across all service area counties, Black/African American people have a higher rate of death than white people.** This disparity is most evident in Lowndes County, where the cancer death rate for Black/African American people is nearly 100 points higher than for white people.

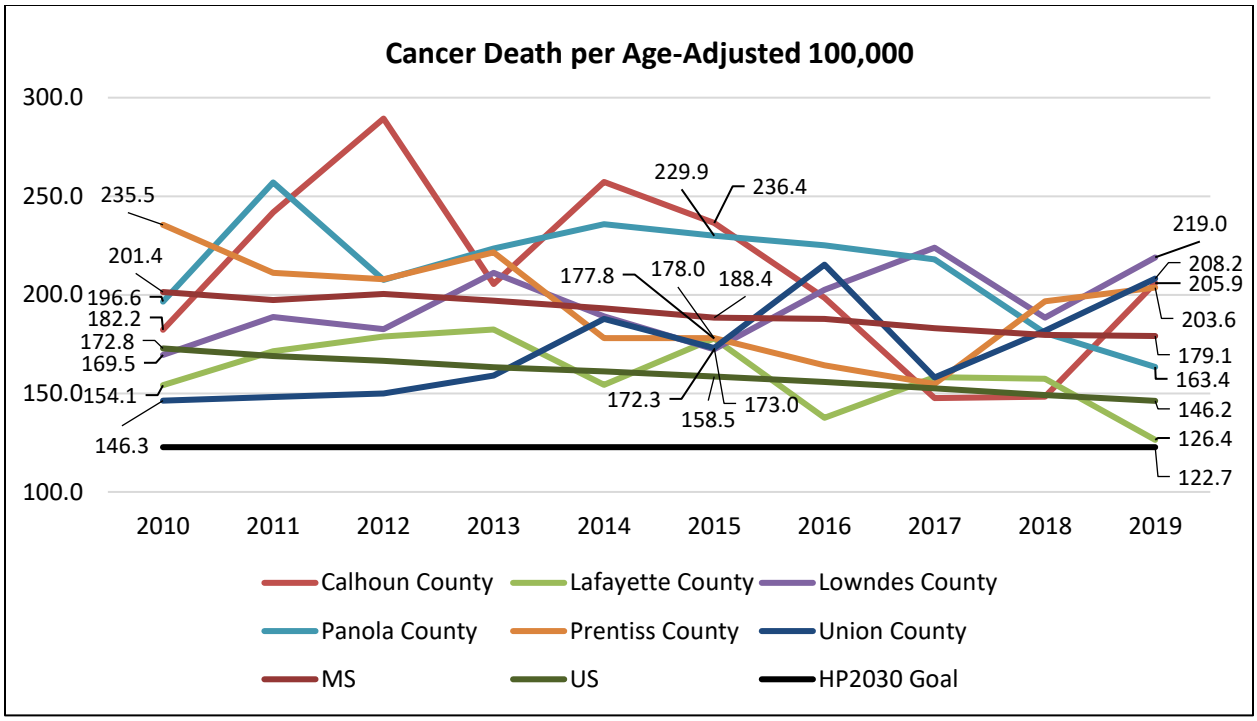
2018 Age-Adjusted Adult Cancer Screening Practices

	Mammogram in the Past 2 Years (50-74 years)	Cervical Cancer Screening (21-65 years)	Colon Cancer Screening (50-74 years)
Benton County	64.8%	83.3%	57.2%
Calhoun County	63.6%	83.9%	56.9%
Lafayette County	68.2%	86.5%	61.5%
Lowndes County	67.0%	85.4%	59.9%
Panola County	67.8%	84.7%	60.0%
Prentiss County	62.6%	82.3%	59.4%
Union County	64.9%	84.4%	62.2%
Mississippi	69.8%	75.2%	60.7%
United States	77.8%	85.5%	65.0%

Source: Centers for Disease Control and Prevention, PLACES & BRFSS



Source: Mississippi Cancer Registry & Centers for Disease Control and Prevention, United States Cancer Statistics



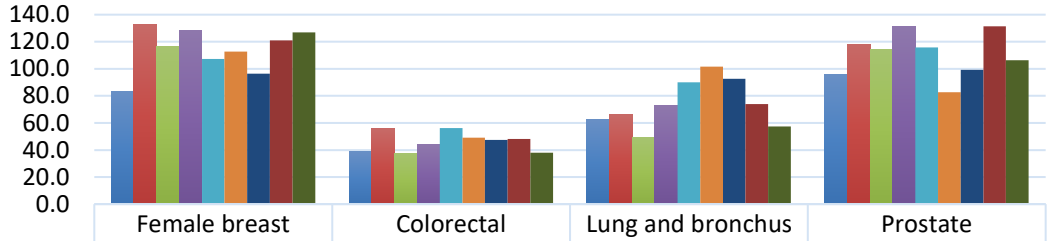
Source: Centers for Disease Control and Prevention
*Benton County data are not trended due to unreported rates in 2011 and 2016-2019. The 2015 rate of death was 213.1 per 100,000 compared to a statewide rate of 188.4.

2014-2018 Age-Adjusted Cancer Incidence and Death per 100,000 Population by Race and Ethnicity

	Benton County	Calhoun County	Lafayette County	Lowndes County	Panola County	Prentiss County	Union County	Mississippi	United States
Cancer Incidence									
Total Population	407.0	476.1	404.6	473.6	492.6	492.2	479.2	474.1	449.0
White	387.2	451.6	394.1	463.6	506.8	492.5	481.9	471.6	451.3
Black or African American	455.9	553.2	462.1	486.6	470.7	494.2	478.9	483.3	445.4
Latinx origin (any race)	NA	NA	NA	NA	NA	NA	NA	NA	345.5
Cancer Death									
Total Population	174.0	197.4	156.8	195.3	217.9	174.2	182.9	186.4	155.6
White	172.0	195.9	141.8	180.4	219.5	174.5	183.0	180.5	156.4
Black or African American	178.8	224.6	235.1	224.8	226.4	200.0	205.1	208.0	177.6
Latinx origin (any race)	NA	NA	NA	NA	NA	NA	NA	46.7	111.3

Source: Mississippi Cancer Registry & Centers for Disease Control and Prevention

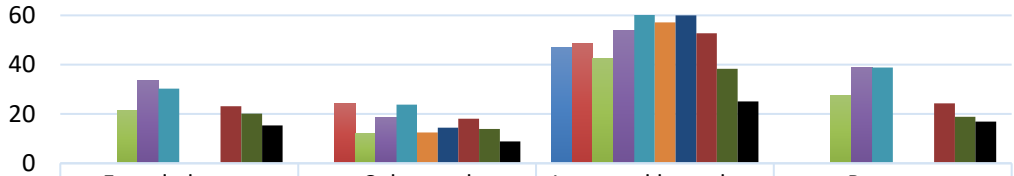
2014-2018 Cancer Incidence per Age-Adjusted 100,000 Population



	Female breast	Colorectal	Lung and bronchus	Prostate
Benton County	83.5	38.9	62.5	96.1
Calhoun County	132.5	55.7	66.3	118.3
Lafayette County	116.3	37.7	49.6	114.5
Lowndes County	128.4	44.0	72.7	131.1
Panola County	107.2	56.1	90.0	115.7
Prentiss County	112.8	49.0	101.6	82.6
Union County	96.4	47.5	92.5	99.2
MS	120.9	48.1	74.0	131.5
US	126.9	38.1	57.3	106.4

Source: Mississippi Cancer Registry & Centers for Disease Control and Prevention, United States Cancer Statistics

2014-2018 Cancer Death per Age-Adjusted 100,000 Population*



	Female breast	Colorectal	Lung and bronchus	Prostate
Benton County			47.1	
Calhoun County		24.2	48.6	
Lafayette County	21.3	12.2	42.4	27.5
Lowndes County	33.4	18.4	53.7	38.9
Panola County	30.3	23.8	66.9	38.9
Prentiss County		12.5	57.1	
Union County		14.4	60.0	
MS	23.2	18.1	52.7	24.3
US	20.1	13.9	38.4	18.9
HP2030	15.3	8.9	25.1	16.9

Source: Centers for Disease Control and Prevention

*Data are reported by county as available.

Respiratory Disease

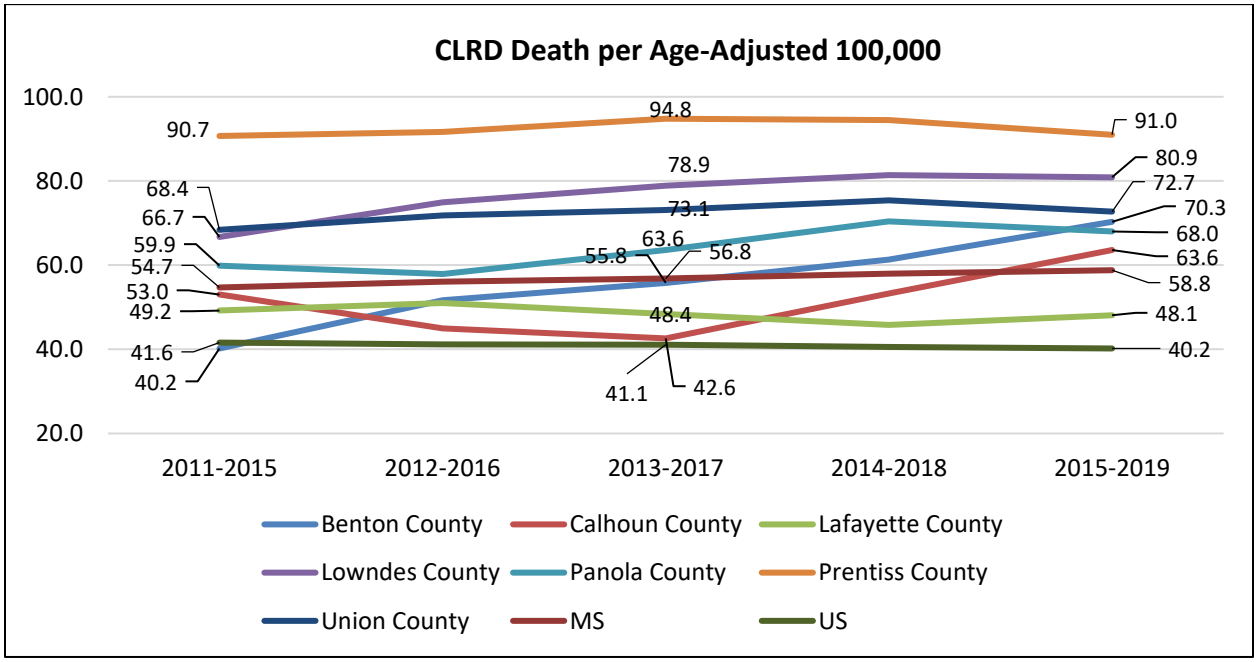
Chronic lower respiratory disease (CLRD) includes several chronic conditions of the respiratory tract, including asthma and chronic obstructive pulmonary disease (COPD). Within the North Mississippi service area, **Benton, Calhoun, Panola and Prentiss counties have a higher prevalence of both adult asthma and COPD compared to the state and nation. These counties also report the highest prevalence of adult tobacco use in the service area.**

All counties except Lafayette exceed state and national benchmarks for death due to CLRD. Contrary to the nation, the CLRD death rate slowly increased in Mississippi and in all North Mississippi service area counties except Lafayette and Prentiss over the past five years. While the death rate was stable in Prentiss County, the county has the highest death rate in the service area, exceeding the state death rate by more than 30 points. Across the nation, Mississippi and the North Mississippi service area, white people have higher rates of CLRD death than other racial or ethnic groups.

2018 Age-Adjusted Adult (Age 18+) Respiratory Disease Prevalence

	Adults with Current Asthma Diagnosis	Adults with COPD
Benton County	10.9%	9.8%
Calhoun County	10.8%	9.9%
Lafayette County	9.4%	7.1%
Lowndes County	10.2%	8.0%
Panola County	11.1%	9.3%
Prentiss County	10.5%	10.5%
Union County	9.9%	8.8%
Mississippi	9.5%	9.0%
United States	9.1%	6.2%

Source: Centers for Disease Control and Prevention, PLACES & BRFSS



Source: Centers for Disease Control and Prevention

2015-2019 CLRD Death Rate per Age-Adjusted 100,000 by Race and Ethnicity

	Total Population	White, Non-Hispanic	Black or African American, Non-Hispanic	Latinx origin (any race)
Benton County	70.3	82.5	NA	NA
Calhoun County	63.6	69.5	NA	NA
Lafayette County	48.1	51.5	NA	NA
Lowndes County	80.9	80.6	85.3	NA
Panola County	68.0	80.8	41.6	NA
Prentiss County	91.0	96.3	NA	NA
Union County	72.7	78.3	NA	NA
Mississippi	58.8	67.7	38.5	NA
United States	40.2	45.5	29.8	17.0

Source: Centers for Disease Control and Prevention

Aging Population

Mississippi is an aging state. From 2011-2015 to 2015-2019, the statewide proportion of residents age 65 or older increased from 13.9% to 15.4%, a similar rate of growth as the nation overall.

According to the Centers for Medicare & Medicaid Services, approximately 74% of Mississippi older adult Medicare beneficiaries have two or more chronic conditions, a higher proportion than the nation (70.3%). **Within the North Mississippi service area, all counties except Lafayette report a higher prevalence of comorbidities among older adults compared to the national benchmark.** Prentiss County has the highest proportion of beneficiaries with multiple chronic conditions and saw the largest increase in this population from the 2019 CHNA, from 76% to 82.1%. Benton, Calhoun and Union counties also saw an approximate 5-point increase in the proportion of beneficiaries with multiple chronic conditions from the 2019 CHNA.

Older adults in all North Mississippi service area counties except Lowndes are more likely to have a disability when compared to the nation; all counties except Lafayette and Lowndes also exceed the statewide benchmark. Calhoun County has the largest proportion of older adults experiencing disability (50.2%), followed by Panola and Prentiss counties at approximately 45%. The most common disability among service area older adults is ambulatory (walking), followed predominantly by independent living or hearing. Without appropriate support services, disabilities can impede disease management and treatment efforts and further exacerbate poorer health outcomes

Across the North Mississippi service area there is opportunity to improve older adult health status through better access to preventive services, such as recommended vaccines and cancer screenings. **Approximately 1 in 4 older adult men and 1 in 5 older adult women in the service area are up to date on preventive services**, **a lower proportion than the state and nation overall.** Men are more likely than women to be up to date on preventive services.

2018 Chronic Condition Comorbidities among Medicare Beneficiaries 65 Years or Older

	0 to 1 Condition	2 to 3 Conditions	4 to 5 Conditions	6 or More Conditions
Benton County	22.6%	28.2%	26.2%	23.1%
Calhoun County	29.0%	27.5%	23.4%	20.2%
Lafayette County	29.6%	31.7%	22.6%	16.1%
Lowndes County	23.3%	30.0%	26.7%	20.0%
Panola County	25.6%	29.2%	25.1%	20.1%
Prentiss County	17.9%	27.7%	28.0%	26.4%
Union County	24.8%	29.7%	25.3%	20.2%
Mississippi	25.9%	29.3%	24.7%	20.1%
United States	29.7%	29.4%	22.8%	18.2%

Source: Centers for Medicare & Medicaid Services

2015-2019 Older Adult Population by Disability Status

	Benton County	Calhoun County	Lafayette County	Lowndes County	Panola County	Prentiss County	Union County	Mississippi	United States
Total population	17.4%	21.6%	10.8%	11.7%	18.3%	19.8%	19.0%	16.4%	12.6%
65 years or older	43.5%	50.2%	36.2%	34.4%	44.5%	44.7%	42.0%	41.4%	34.5%
Ambulatory	33.0%	30.7%	24.3%	21.7%	32.5%	32.3%	28.1%	28.6%	21.9%
Hearing	16.9%	25.4%	12.1%	14.2%	12.3%	17.2%	19.3%	15.3%	14.3%
Independent living	20.0%	16.8%	17.5%	12.6%	22.7%	22.7%	17.2%	18.4%	14.2%
Cognitive	4.6%	14.7%	8.3%	7.6%	13.4%	9.4%	9.3%	11.5%	8.6%
Vision	9.0%	17.4%	7.6%	7.3%	8.7%	9.0%	6.8%	8.8%	6.3%

Source: U.S. Census Bureau, American Community Survey

2018 Age-Adjusted Older Adult (65+) Clinical Preventive Services*

	Older Adult Men Who Are Up To Date On Clinical Preventive Services	Older Adult Women Who Are Up To Date On Clinical Preventive Services
Benton County	23.8%	19.0%
Calhoun County	23.3%	20.1%
Lafayette County	26.3%	21.0%
Lowndes County	25.9%	18.0%
Panola County	24.4%	20.0%
Prentiss County	25.7%	20.7%
Union County	25.5%	19.1%
Mississippi	45.2%	43.0%
United States	42.4%	41.6%

Source: Centers for Disease Control and Prevention, PLACES & BRFSS

*Includes a flu vaccine in the past year, pneumococcal pneumonia vaccine ever, colorectal cancer screening and mammogram in the past two years (women).

Older adult health care utilization and costs increase significantly with a higher number of reported chronic diseases. Tracking these indicators helps plan allocation of resources to best anticipate and serve need in the community. **When compared with the nation, Mississippi overall has higher per capita spending among older adult Medicare beneficiaries, regardless of number of chronic conditions. Related to this finding, Mississippi also reports a higher number of emergency department (ED) visits among beneficiaries.**

Within the North Mississippi service area, Calhoun County reports higher spending among beneficiaries than the state and nation and generally more ED visits. In Benton and Panola counties, more than half of beneficiaries have four or more chronic conditions and spending and ED visits among these individuals exceeds state and/or national benchmarks. Lafayette, Lowndes, Prentiss and Union counties generally report lower spending than the nation. Of note, while overall spending among beneficiaries is generally lower in Lowndes County, ED visit rates are among the highest in the service area, indicating potential barriers to primary care access.

2018 Per Capita Standardized Spending* for Medicare Beneficiaries Age 65 Years or Older

	0 to 1 Condition	2 to 3 Conditions	4 to 5 Conditions	6 or More Conditions
Benton County	$1,770	$4,456	$10,979	$31,336
Calhoun County	$2,235	$5,854	$11,871	$32,808
Lafayette County	$2,334	$5,820	$10,502	$27,904
Lowndes County	$1,963	$5,113	$10,709	$26,937
Panola County	$1,945	$5,416	$11,532	$33,910
Prentiss County	$2,358	$4,799	$9,618	$27,080
Union County	$1,974	$4,741	$9,211	$27,670
Mississippi	$2,077	$5,727	$11,150	$31,143
United States	$1,944	$5,502	$10,509	$29,045

Source: Centers for Medicare & Medicaid Services

*Standardized spending takes into account payment factors that are unrelated to the care provided (e.g., geographic variation in Medicare payment amounts).

2018 ED Visits per 1,000 Medicare Beneficiaries Age 65 Years or Older

	0 to 1 Condition	2 to 3 Conditions	4 to 5 Conditions	6 or More Conditions
Benton County	134.9	296.2	753.4	1,996.1
Calhoun County	186.1	391.3	758.8	1,828.6
Lafayette County	139.3	300.7	666.4	1,783.3
Lowndes County	235.1	476.9	866.0	2,160.9
Panola County	163.2	351.4	642.4	2,027.9
Prentiss County	168.1	357.4	667.9	1,667.7
Union County	128.3	359.1	605.7	1,753.2
Mississippi	138.6	350.5	686.5	1,885.5
United States	122.6	318.4	621.1	1,719.1

Source: Centers for Medicare & Medicaid Services

Nationally and in Mississippi, the most common chronic conditions among older adult Medicare beneficiaries, in order of prevalence, are hypertension, high cholesterol and arthritis. In comparison to the nation, Mississippi older adult Medicare beneficiaries generally report a higher prevalence of chronic conditions, with the exception of asthma, cancer and high cholesterol.

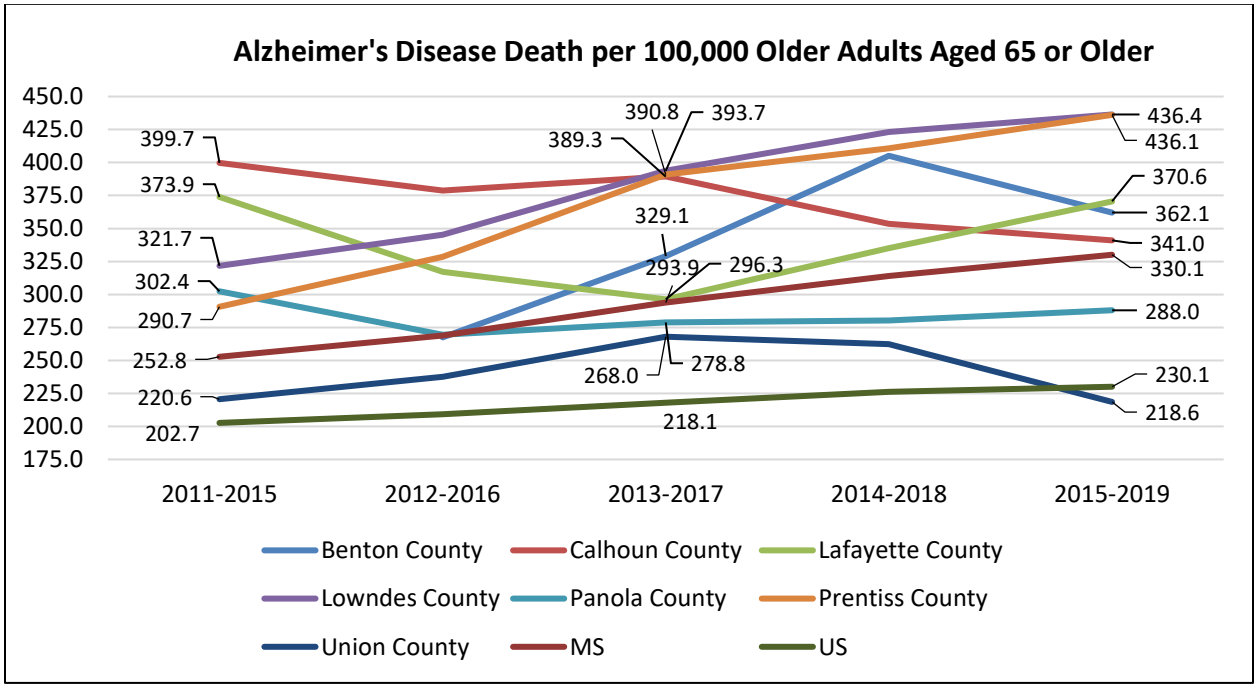
Consistent with having the highest proportion of older adult Medicare beneficiaries with multiple chronic conditions, Prentiss County has a higher prevalence of nearly all reported conditions when compared to the state and nation. When viewed by condition, nearly all counties have a higher prevalence of chronic kidney disease, hypertension and/or ischemic heart disease. **Of note, approximately 70% or more of beneficiaries in all counties except Calhoun and Lafayette have hypertension.**

2018 Chronic Condition Prevalence among Medicare Beneficiaries Age 65 Years or Older

	Benton County	Calhoun County	Lafayette County	Lowndes County	Panola County	Prentiss County	Union County	Mississippi	United States
Alzheimer's Disease	12.2%	12.8%	10.9%	11.2%	12.8%	13.5%	12.1%	12.9%	11.9%
Arthritis	40.1%	38.9%	35.4%	41.6%	36.5%	47.3%	39.6%	39.8%	34.6%
Asthma	4.2%	2.3%	3.0%	3.7%	2.7%	6.7%	3.1%	3.7%	4.5%
Cancer	8.5%	7.9%	8.0%	8.3%	7.9%	8.0%	8.4%	8.8%	9.3%
Chronic Kidney Disease	26.8%	29.5%	21.4%	26.8%	27.7%	33.5%	24.7%	25.3%	24.9%
COPD	14.6%	10.8%	7.8%	12.0%	11.8%	20.5%	12.9%	12.6%	11.4%
Depression	20.1%	15.3%	13.4%	13.8%	14.0%	20.3%	19.0%	16.4%	16.0%
Diabetes	34.7%	29.3%	26.8%	32.1%	31.6%	33.9%	30.2%	30.7%	27.1%
Heart Failure	17.4%	18.3%	16.5%	15.8%	21.2%	18.2%	16.9%	16.1%	14.6%
High Cholesterol	55.1%	40.9%	49.1%	54.7%	46.0%	56.7%	51.6%	48.9%	50.5%
Hypertension	71.4%	64.7%	61.5%	71.0%	71.1%	76.3%	68.8%	67.9%	59.8%
Ischemic Heart Disease	35.8%	36.4%	31.3%	29.4%	36.7%	39.4%	33.1%	31.9%	28.6%
Stroke	4.4%	3.5%	3.4%	3.8%	3.9%	3.7%	4.1%	4.4%	3.9%

Source: Centers for Medicare & Medicaid Services

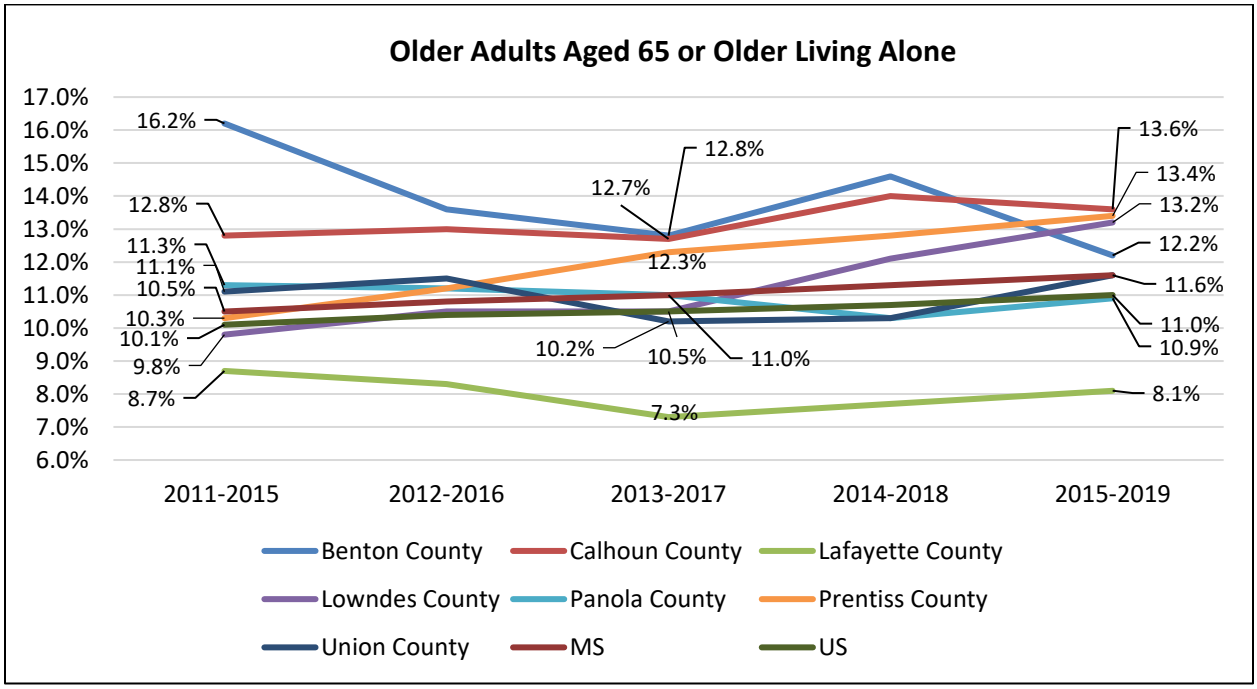
The Alzheimer's disease death rate among Mississippi older adults is 100 points higher than the national death rate. **All North Mississippi service area counties except Union also have a higher Alzheimer's disease death rate than the nation, despite having a similar prevalence of Alzheimer's disease among older adult Medicare beneficiaries.** The Alzheimer's disease death rate increased more than 100 points in Lowndes and Prentiss counties from 2011-2015 to 2015-2019.



Source: Centers for Disease Control and Prevention

In older adults, chronic illness often leads to diminished quality of life and increased social isolation. Social isolation may also impede effective chronic illness management and accelerate the negative impact of chronic diseases. One indicator of social isolation among older adults is the percentage of adults age 65 years or older who live alone. Consistent with the nation, the proportion of older adults living alone increased across Mississippi and in most North Mississippi service area counties.

Older adults in Benton, Calhoun, Lowndes and Prentiss counties are more likely to live alone when compared to state and national benchmarks, a finding of note due to a higher prevalence of comorbidities, disability and/or ED utilization among older adults in these counties.



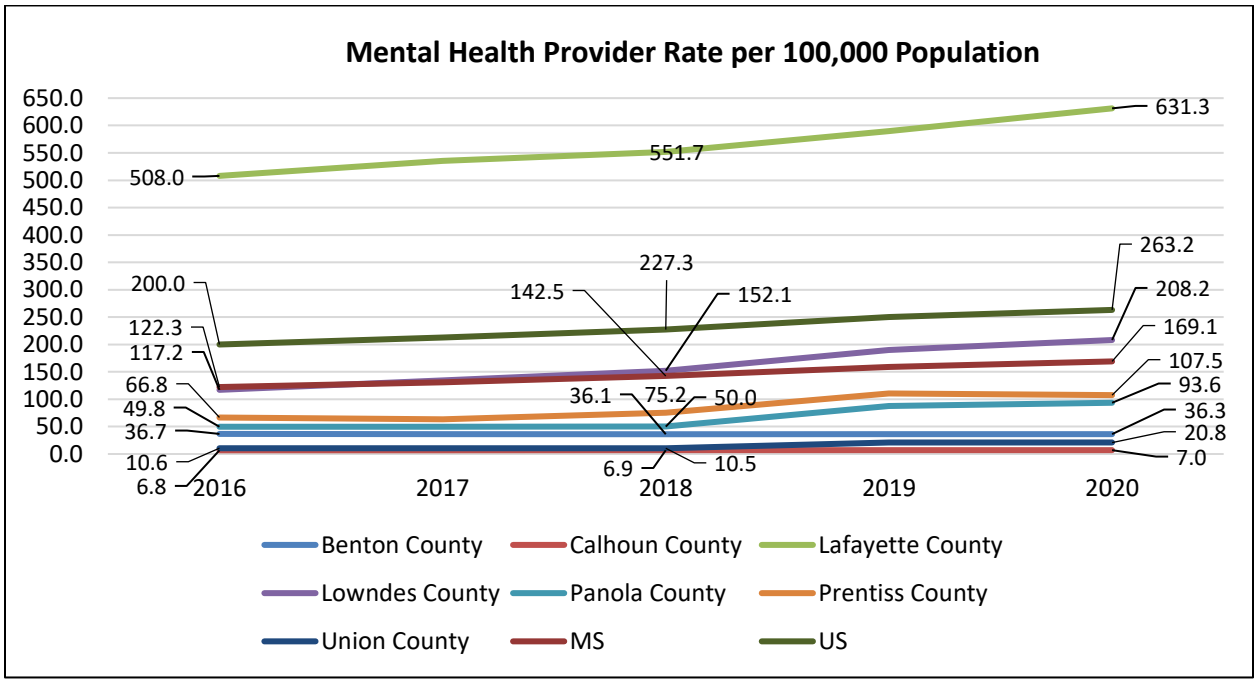
Source: U.S. Census Bureau, American Community Survey

Behavioral Health and Substance Use Disorder

Access to mental health providers is improving nationally and across Mississippi and the North Mississippi service area. However, Mississippi overall has fewer mental health providers than the nation, as indicated by the rate of providers per 100,000 population.

Within the North Mississippi service area, mental health providers are concentrated in Lafayette County, but the county is still designated as a HPSA for mental health care. Calhoun County is also designated as a HPSA for mental health care; all other counties are designated as High Needs HPSAs for mental health care.

Note: The mental health provider rate includes psychiatrists, psychologists, licensed clinical social workers, counselors and mental health providers that treat alcohol and other drug abuse, among others. It does not account for potential shortages in specific provider types.



Source: Centers for Medicare and Medicaid Services

Nearly 1 in 5 adults across Mississippi and the North Mississippi service area report having poor mental health on 14 or more days during a 30-day period, a higher proportion than the nation overall. Adults in Benton, Calhoun and Prentiss counties have a higher prevalence of mental distress relative to other service area counties. Frequent mental distress is an indicator of persistent, and likely severe, mental health issues, which may impact quality of life and overall wellness.

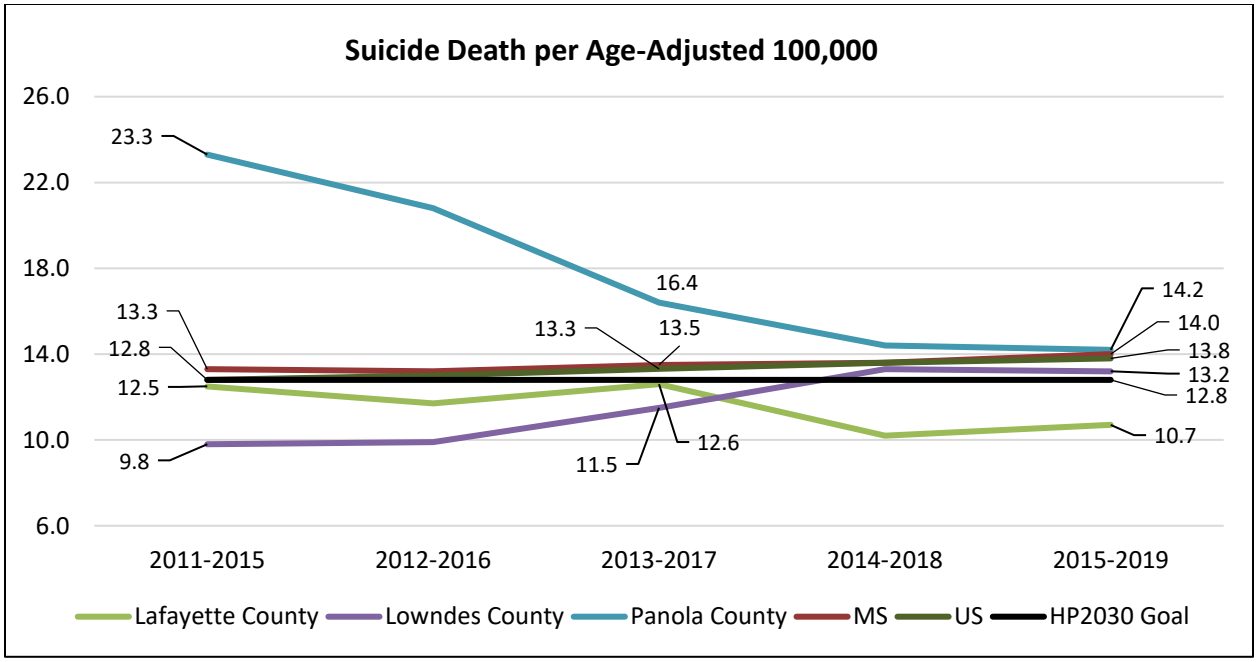
2018 Age-Adjusted Adult (Age 18+) Poor Mental Health Days

	Average Mentally Unhealthy Days per Month	Frequent Mental Distress: 14 or More Poor Mental Health Days per Month
Benton County	5.5	18.2%
Calhoun County	5.4	18.2%
Lafayette County	4.6	14.7%
Lowndes County	4.7	15.8%
Panola County	5.3	17.8%
Prentiss County	5.7	18.7%
Union County	5.1	16.9%
Mississippi	4.5	15.7%
United States	4.1	12.9%

Source: Centers for Disease Control and Prevention, BRFSS

Frequent mental distress is a risk factor for suicide. Suicide deaths steadily increased across the U.S. and Mississippi over the past decade. Within the North Mississippi service area, suicide death rates are masked in Benton, Calhoun and Prentiss counties due to low death counts, but other mental health measures indicate high vulnerability to suicide in these counties. **Panola and Lowndes counties have a similar suicide death rate as the state and nation, but the death rate in Lowndes County increased. Suicide deaths also increased in Union County.** In 2015 to 2019, Union County had 22 suicide deaths for a rate of 15.9 per 100,000; prior years of data are masked due to low death counts. In Lafayette County, the suicide death rate generally declined and meets the HP2030 goal.

Suicide death rates should continue to be monitored as deaths reflect pre-COVID-19 pandemic rates. An analysis of demographic characteristics for suicide deaths occurring from 2015 to 2019 suggests that deaths are more prominent among males, middle-aged adults and white residents.



Source: Centers for Disease Control and Prevention

2015-2019 Mississippi Suicide Deaths, Demographic Characteristics

	Suicide Deaths	Age-Adjusted Rate per 100,000
Gender		
Female	417	5.3
Male	1,699	23.6
Age*		
5-14	30	1.5
15-24	283	13.6
25-34	347	17.6
35-44	359	19.6
45-54	343	18.3
55-64	354	18.5
65-74	224	16.4
75-84	130	18.9
85+	46	17.9
Race and Ethnicity		
White, Non-Hispanic	1,779	20.1
Black/African American, Non-Hispanic	300	5.4
Latinx origin (any race)	17	NA

Source: Centers for Disease Control and Prevention
*Rates are not age-adjusted.

Substance use disorder affects a person's brain and behaviors and leads to an inability to control the use of substances which include alcohol, marijuana and opioids, among others. Alcohol is the most prevalent addictive substance used among adults.

When compared to the nation, **fewer adults across Mississippi and the North Mississippi service area report excessive drinking.** Excessive drinking includes heavy and/or binge drinking. All counties except Panola and Prentiss also report a lower percentage of driving deaths due to alcohol impairment than the nation. Driving deaths due to alcohol impairment accounted for 70 deaths in Panola County and 39 deaths in Prentiss County between 2015 and 2019.

Alcohol Use Disorder Indicators

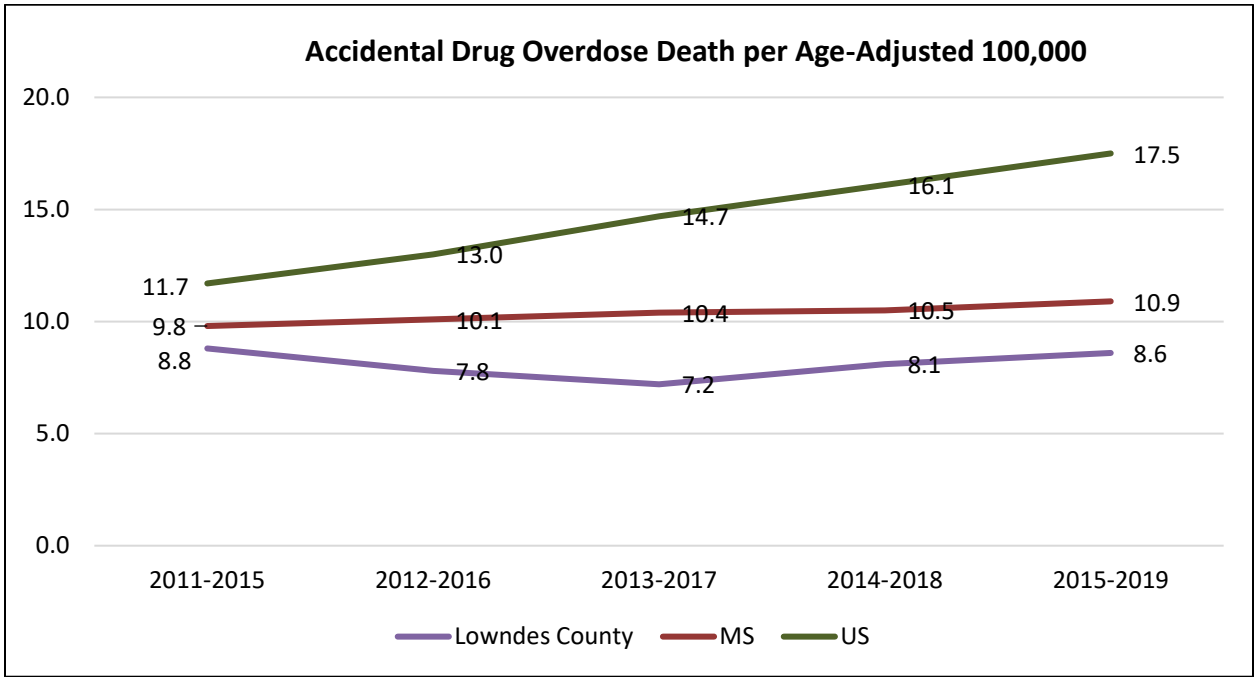
	2018 Adults Reporting Excessive Drinking (age-adjusted)	2015-2019 Driving Deaths due to Alcohol Impairment (%, count)
Benton County	14.5%	14.3%, n=21
Calhoun County	14.8%	26.3%, n=19
Lafayette County	16.0%	26.1%, n=46
Lowndes County	13.8%	10.2%, n=49
Panola County	14.1%	28.6%, n=70
Prentiss County	15.1%	41.0%, n=39
Union County	15.4%	14.7%, n=34
Mississippi	14.8%	19.6%
United States	19.0%	27.0%

Source: Centers for Disease Control and Prevention, BRFSS

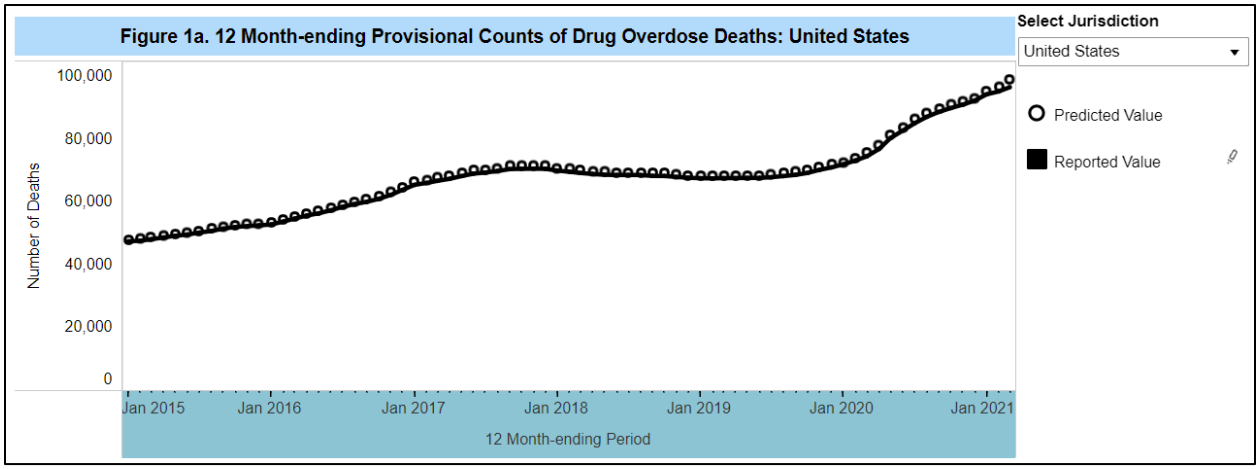
The CDC reports that the number of accidental drug overdose deaths nationwide increased by nearly 5% from 2018 to 2019 and has quadrupled since 1999. Over 70% of the 70,630 overdose deaths in 2019 involved an opioid. Nationally, heroin- and prescription opioid-involved deaths are declining, while synthetic opioid-involved deaths are increasing. Synthetic opioids such as fentanyl are laboratory produced and have similar effects as natural opioids, but can have far greater potency, increasing the risk for overdose and death.

Mississippi and the North Mississippi service area as a whole have experienced fewer accidental drug overdose deaths than the nation. Accidental drug overdose death rates are masked in all service area counties except Lowndes due to low death counts. The Lowndes County death rate has been historically stable and lower than state and national benchmarks.

Accidental drug overdose death rates should continue to be monitored in light of the COVID-19 pandemic. Provisional data released by the CDC predicts that 2020 and 2021 brought the highest number of overdose deaths ever in the U.S. **Based on a rolling 12-month count from March 2020 to March 2021, the number of drug overdose deaths is predicted to have increased 48.3% in Mississippi, compared to a national increase of 30.8%.**



Source: Centers for Disease Control and Prevention



Source: Centers for Disease Control and Prevention

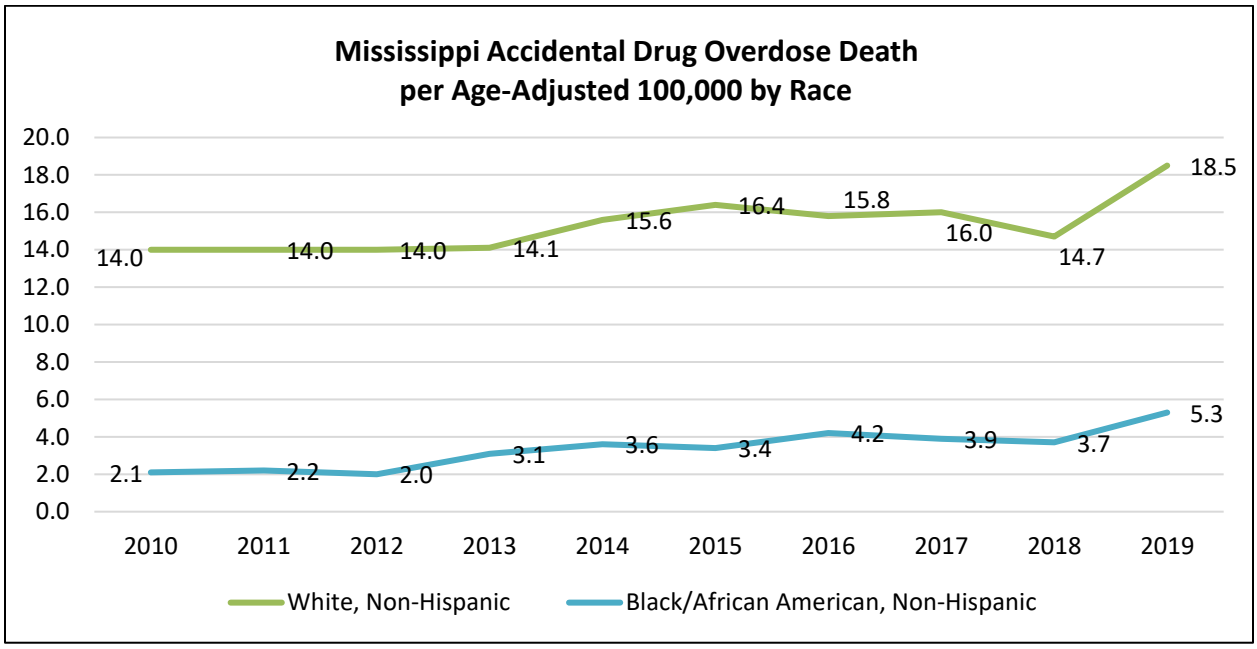
While the opioid epidemic has affected all genders and age groups, the largest proportion of accidental overdose deaths has historically been among males and young to middle-aged adults. From 2015 to 2019, males accounted for 63% of overdose deaths in Mississippi. When considered by age, adults age 35 to 44 accounted for the largest proportion of overdose deaths in Mississippi (25.6%), followed by teens and young adults age 15 to 24 (23.4%) and adults age 35 to 44 (23.1%).

2015-2019 Mississippi Accidental Overdose Deaths, Demographic Characteristics

	Accidental Overdose Deaths	Age-Adjusted Rate per 100,000
Gender		
Female	576	7.7
Male	987	14.3
Age*		
5-14	92	4.4
15-24	366	18.6
25-34	401	21.9
35-44	361	19.3
45-54	252	13.2
55-64	67	4.9
65-74	12	NA
75-84	11	NA
85+	46	17.9
Race and Ethnicity		
White, Non-Hispanic	1,325	16.3
Black/African American, Non-Hispanic	212	4.1
Latinx origin (any race)	14	NA

Source: Centers for Disease Control and Prevention
*Rates are not age-adjusted.

Studies conducted by the National Institutes of Health have found that Black/African American people are less likely to be prescribed medications for opioid use disorder, or to have access to life saving antidote drugs like naloxone. These inequities have contributed to sharp increases in overdose deaths among Black/African American people in recent years. **In Mississippi, both white and Black/African American residents saw an increase in accidental overdose deaths from 2018 to 2019, but the death rate among Black/African American people increased nearly 50% compared to approximately 25% among white people.** White residents continue to have a death rate that is more than triple the death rate among Black/African American residents.

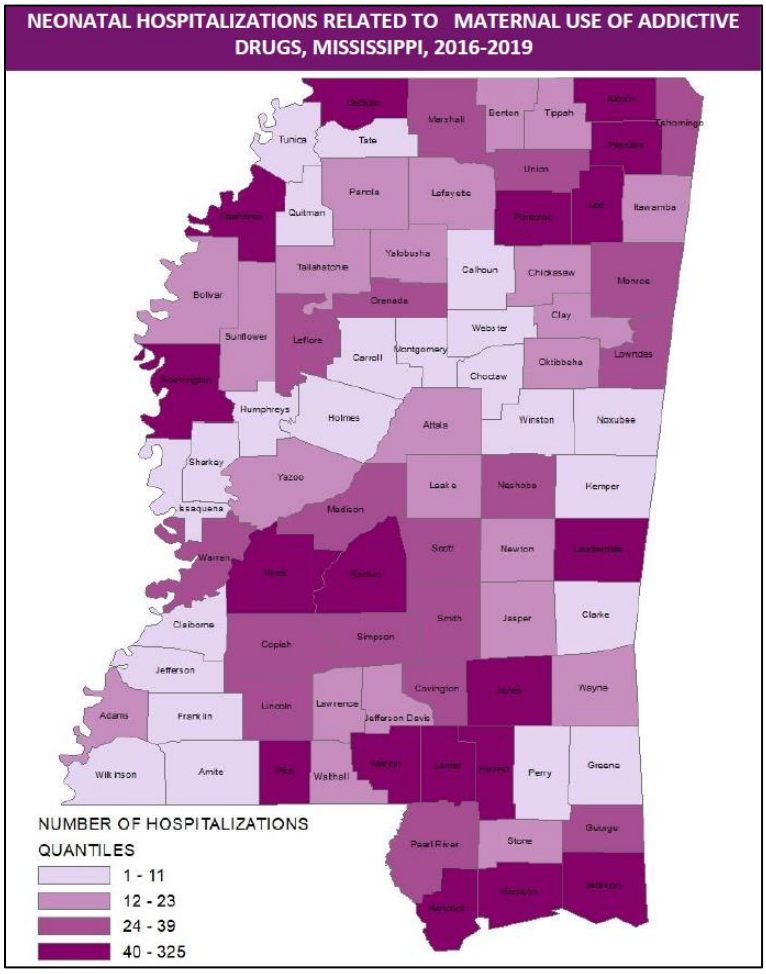


Source: Centers for Disease Control and Prevention
*Latinx death rate data are not trended due to low death counts.

Neonatal abstinence syndrome (NAS) is defined as an array of withdrawal symptoms that develop soon after birth in newborns exposed to addictive drugs while in the mother's womb. Although most commonly associated with opioid exposure, other substances, including antidepressants and benzodiazepines, can also cause NAS. In addition to difficulties of withdrawal after birth, problems in the baby may include premature birth, seizures, respiratory distress, birth defects, poor growth and other developmental problems.

According to the most recent report on NAS by the Mississippi State Department of Health, the number of NAS cases increased statewide from 113 in 2010 to 854 in 2019. Among infant stays related to NAS, comorbidities were highly prevalent: 26.4% were born prematurely, 25.6% had a coexisting low birth weight, 25.7% had coexisting respiratory conditions and 13.9% had a coexisting congenital disease. Among the 854 hospitalizations in 2019, 85.5% were covered by Medicaid and 8.1% were uninsured. Rates were nearly identical for Black/African American and white newborns. Infants residing in rural areas had slightly higher hospitalization rates than infants residing in urban areas; rates were highest in the northeastern corner of the state and in south Mississippi.

Within the North Mississippi service area, **Prentiss County had a higher number of neonatal hospitalizations relative to other Mississippi counties, falling within the highest quintile of 40-325 hospitalizations.**



Source: Mississippi State Department of Health

Youth Health

Overweight and Obesity

Childhood obesity is a persistent and significant threat to the long-term health of today's youth. The CDC reports that children who have obesity are more likely to have high blood pressure and high cholesterol; glucose intolerance, insulin resistance and Type 2 diabetes; breathing problems like asthma and sleep apnea; joint and musculoskeletal problems; psychological and social problems, such as anxiety, depression, low self-esteem and bullying; among other concerns.

A higher proportion of Mississippi high school students have obesity compared to the nation overall, and the proportion is increasing. **From 2013 to 2019, the proportion of Mississippi high school students with obesity increased 8 percentage points compared to a national average increase of 1.8 points.**

Consistent with the nation, the most at-risk populations for youth obesity in Mississippi are males, Black/African Americans, Latinx and lesbian, gay or bisexual (LGB) students.

High School Students with Obesity

	2013	2015	2017	2019
Mississippi	15.4%	18.9%	NA	23.4%
United States	13.7%	13.9%	14.8%	15.5%

Source: Centers for Disease Control and Prevention, YRBS

2019 High School Students with Obesity

	Mississippi	United States
Gender		
Female	21.1%	11.9%
Male	25.8%	18.9%
Race and Ethnicity		
White	20.6%	13.1%
Black or African American	25.5%	21.1%
Latinx origin (any race)	28.9%	19.2%
Race and Ethnicity		
Lesbian, Gay, Bisexual (LGB)	25.3%	21.0%
Straight	22.4%	14.4%

Source: Centers for Disease Control and Prevention, YRBS

Behavioral Health and Substance Use Disorder

Mississippi has historically reported a higher percentage of youth attempting suicide than the nation. **As of 2013, nearly 13% of Mississippi high school students reported an attempted suicide compared with 9% nationwide.** When considered by subgroup, attempted suicides were highest among students identifying as LGB, followed by Black/African Americans, females and Latinx. Of note, **nearly 30% of LGB students in Mississippi reported an attempted suicide compared to 23.4% nationwide.**

Contributing to acute psychiatric distress among Mississippi youth is an overall increasing percentage of school students who report feeling consistently sad or hopeless. Incidence of violence, including fighting, bullying and dating violence, has generally been stagnant or declining.

High School Students Reporting an Attempted Suicide

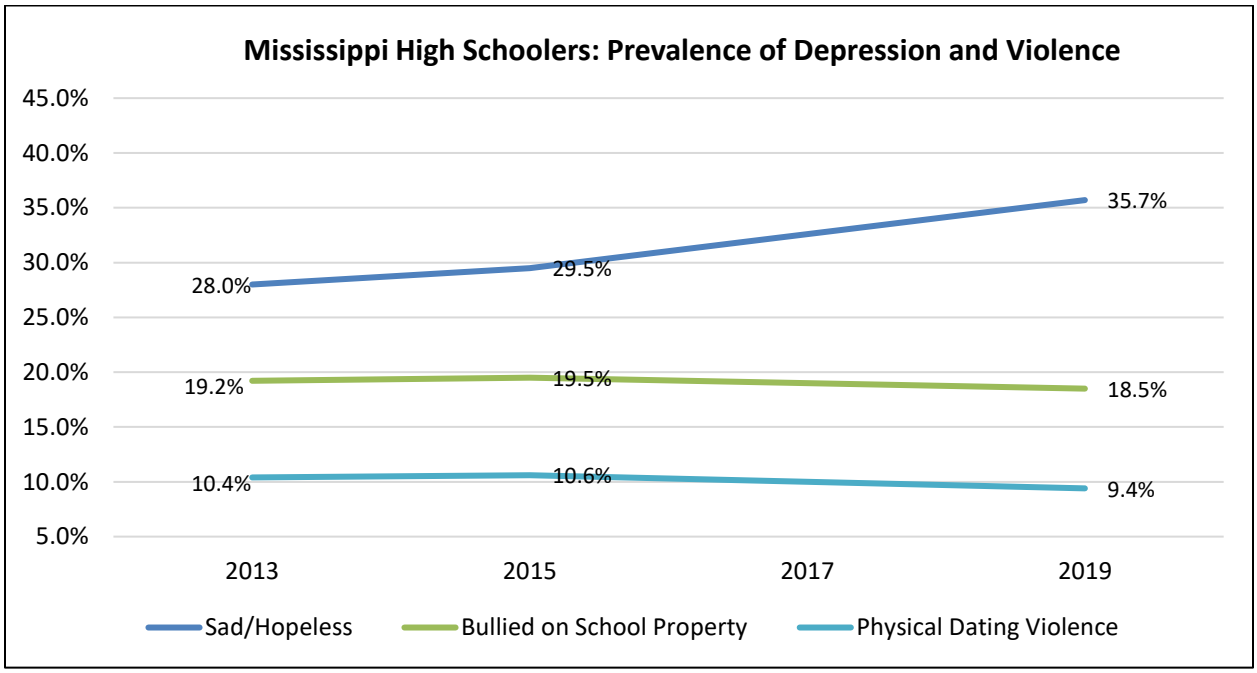
	2013	2015	2017	2019
Mississippi	10.9%	12.7%	NA	12.7%
United States	8.0%	8.6%	7.4%	8.9%

Source: Centers for Disease Control and Prevention, YRBS

2019 High School Students Reporting an Attempted Suicide

	Mississippi	United States
Gender		
Female	14.7%	11.0%
Male	10.2%	6.6%
Race and Ethnicity		
White	10.0%	7.9%
Black or African American	14.8%	11.8%
Latinx origin (any race)	13.3%	8.9%
Race and Ethnicity		
Lesbian, Gay, Bisexual (LGB)	29.6%	23.4%
Straight	9.8%	6.4%

Source: Centers for Disease Control and Prevention, YRBS



Source: Centers for Disease Control and Prevention, YRBS

*2017 data are not available for Mississippi.

The use of e-cigarettes among high school students continues to rise nationally and in Mississippi, while the use of traditional cigarettes is declining. As of 2019, approximately 7% of high school students in Mississippi reported smoking compared with 6% nationally. **Mississippi reports a lower proportion of students using e-cigarettes than the nation, but more than 20% of students still report current use.** Students who report current e-cigarette use are more likely to be male, white and/or LGB.

High School Students Reporting Current (within past 30 days) E-Cigarette Use

	2015	2017	2019
Mississippi	22.9%	NA	21.4%
United States	24.1%	13.2%	32.7%

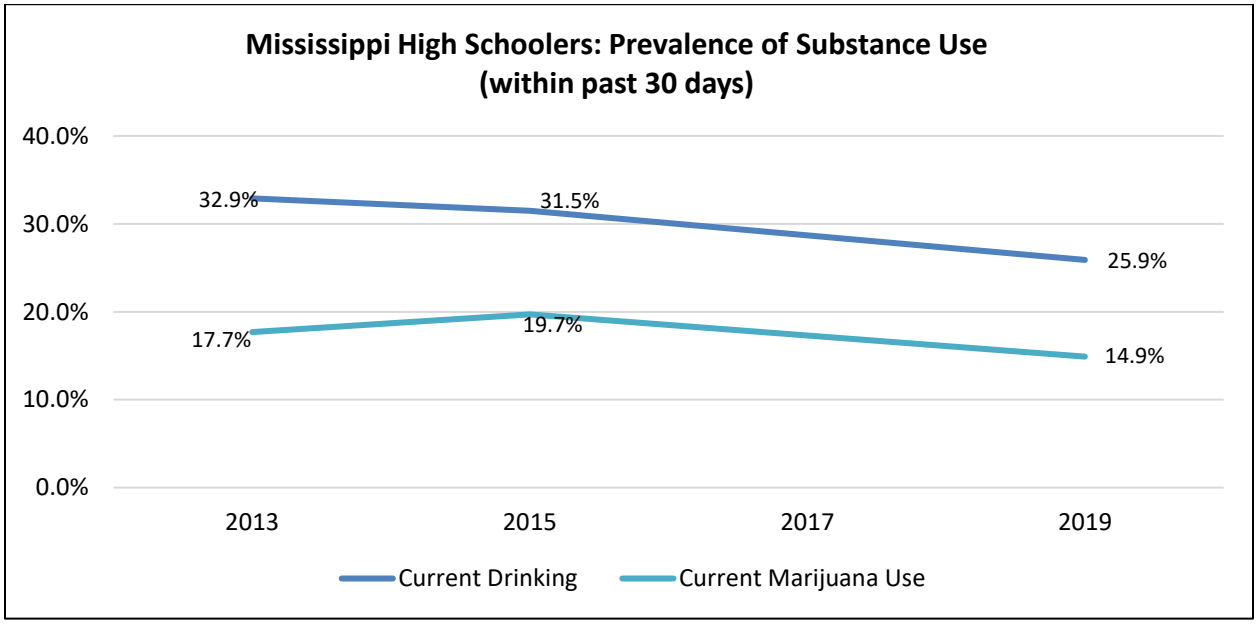
Source: Centers for Disease Control and Prevention, YRBS

2019 High School Students Reporting Current (within past 30 days) E-Cigarette Use

	Mississippi	United States
Gender		
Female	19.0%	33.5%
Male	23.6%	32.0%
Race and Ethnicity		
White	30.9%	38.3%
Black or African American	12.3%	19.7%
Latinx origin (any race)	22.0%	31.2%
Race and Ethnicity		
Lesbian, Gay, Bisexual (LGB)	31.3%	34.1%
Straight	19.7%	32.8%

Source: Centers for Disease Control and Prevention, YRBS

Consistent with the nation, substance use among Mississippi high school students is generally declining, however, approximately 1 in 4 students report current alcohol use and more than 1 in 10 students report current marijuana use.



Source: Centers for Disease Control and Prevention, YRBS

*Mississippi data are provided as available. Data on the misuse of prescription pain meds are not reported and binge drinking is not trended prior to 2019. As of 2019, 10.1% of Mississippi youth reported binge drinking.

High School Students Reporting Current (within past 30 days) Alcohol Use

	2013	2015	2017	2019
Mississippi	32.9%	31.5%	NA	25.9%
United States	34.9%	32.8%	29.8%	29.1%

Source: Centers for Disease Control and Prevention, YRBS

2019 High School Students Reporting Current (within past 30 days) Alcohol Use

	Mississippi	United States
Gender		
Female	26.0%	31.9%
Male	25.9%	26.4%
Race and Ethnicity		
White	34.6%	34.2%
Black or African American	18.2%	16.8%
Latinx origin (any race)	18.6%	28.4%
Race and Ethnicity		
Lesbian, Gay, Bisexual (LGB)	37.3%	33.9%
Straight	24.0%	28.8%

Source: Centers for Disease Control and Prevention, YRBS

Maternal and Infant Health

All North Mississippi service area counties except Lowndes and Panola have a lower birth rate than the nation. **Lafayette County also has a lower birth rate than the state, although the population is increasing at a faster rate than the state and nation, potentially indicating significant in-migration of residents.** In contrast, the Panola County population is declining, a finding that is consistent with overall lower life expectancy. Consistent with racial population trends, most counties have a higher rate of birth among Black/African American people than white people.

2019 Births and Birth Rate per 1,000 Population by Race and Ethnicity

	Total Births	Birth Rate per 1,000	White, Non-Hispanic Birth Rate	Black/African American, Non-Hispanic Birth Rate	Latinx Birth Rate*
Benton County	94	11.4	12.1	10.8	NA
Calhoun County	172	12.0	12.0	12.0	NA
Lafayette County	547	10.1	9.3	12.6	NA
Lowndes County	787	13.4	12.0	15.3	NA
Panola County	475	13.9	11.0	17.0	NA
Prentiss County	280	11.1	10.9	13.0	NA
Union County	338	11.7	11.9	12.2	NA
Mississippi	36,634	12.3	11.3	14.0	NA
United States	3,747,540	11.4	9.8	13.4	14.6

Source: Mississippi State Department of Health & Centers for Disease Control and Prevention
*Mississippi does not report Latinx birth data.

Mississippi overall reports poorer birth outcomes than the nation, including a higher proportion of teen, low birth weight and premature births, a high prevalence of smoking during pregnancy and a higher infant death rate. **With few exceptions, North Mississippi service area counties generally report better birth outcomes than the state overall.** Notably, all counties except Benton and Panola have a higher percentage of pregnant people receiving first trimester prenatal care than the state and/or nation.

Existing birth disparities are most evident in Calhoun and Panola counties, where approximately 10% of births are to teens, more than 13% of babies are born with low birth weight and approximately 12% of pregnant people use tobacco. Of note, all counties except Lafayette and Lowndes have a higher percentage of births to teens, although the percentage generally declined.

Lafayette and Lowndes counties have historically better birth outcomes than the state and/or the nation, but both counties saw a decline in these outcomes in 2019 that should continue to be monitored. **From 2018 to 2019, Lafayette and Lowndes counties saw a decline in the proportion of pregnant people receiving first trimester prenatal care and an increase in teen, low birth weight and premature births.** Lafayette County also saw an increase in tobacco use among pregnant people.

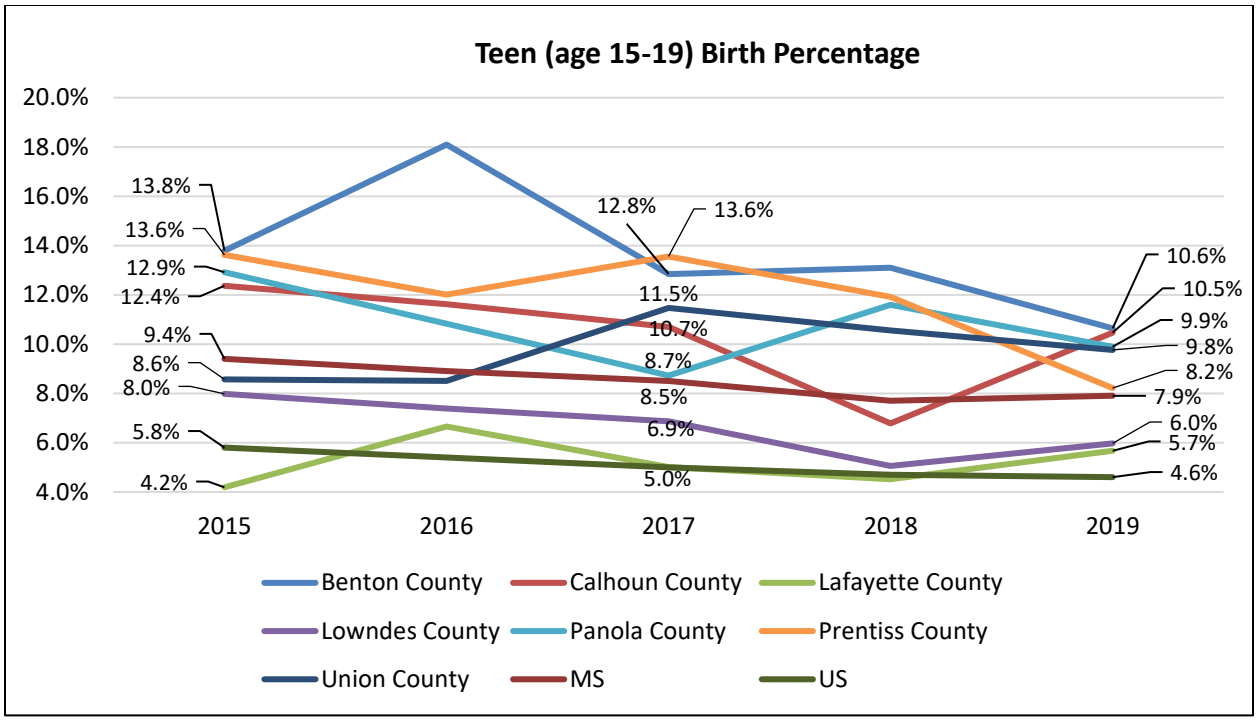
While both Whites and Black/African American people residing in Mississippi report notable birth disparities compared with the nation overall, these disparities disproportionately impact Black/African American people. There is a more than 10-point deficit in the percentage of Black/African American pregnant people receiving early prenatal care compared to white pregnant people. Nearly 1 in 5 babies born to Black/African American people are born premature or with low birth weight compared to 1 in 10 white babies. The infant rate death rate among Black/African American infants is 60% higher than for white infants.

Birth disparities among Black/African American residents are consistent across North Mississippi service area counties. Of note, in Lafayette and Lowndes counties, the proportion of Black/African American pregnant people receiving first trimester prenatal care is 13 to 14 percentage points lower than the proportion of white pregnant people. In Calhoun, Prentiss and Union counties, the low birth weight percentage is approximately 15 percentage points higher for Black/African American people than white people.

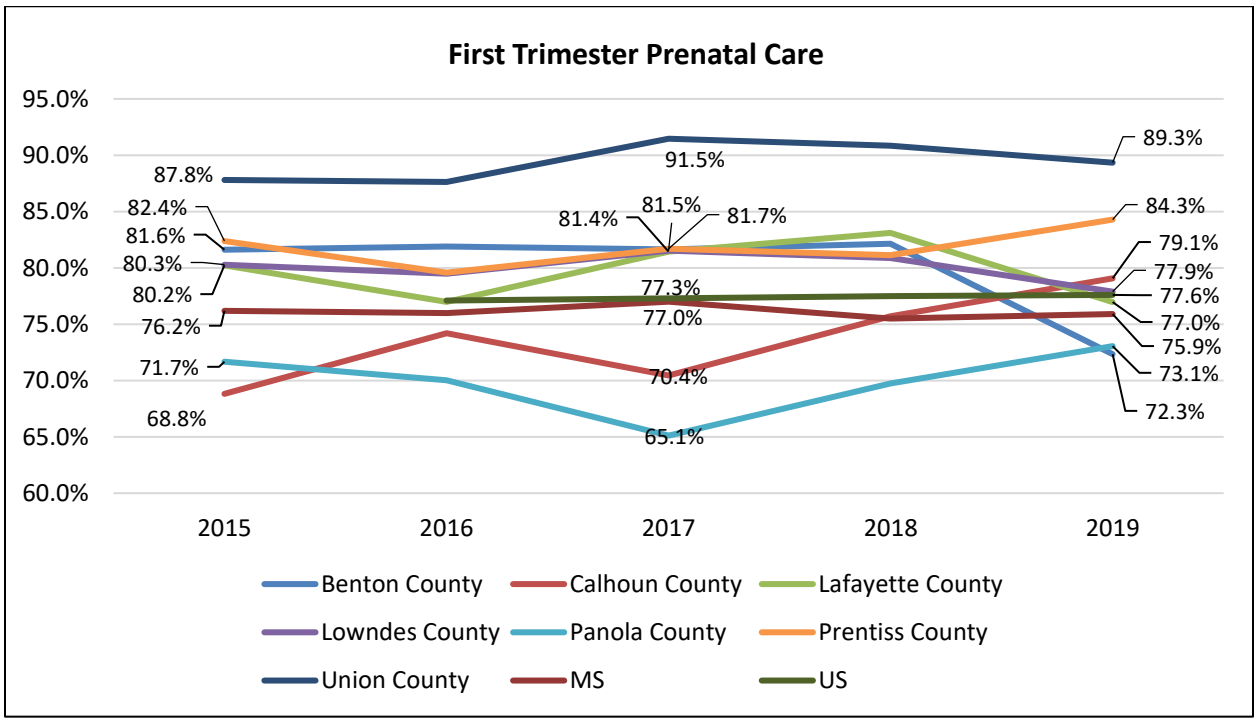
2019 Maternal and Infant Health Indicators by Race

	Teen (15-19) Birth Percentage	First Trimester Prenatal Care	Premature Births	Low Birth Weight Births	Non-Smoking during Pregnancy
Benton County	10.6%	72.3%	11.7%	5.3%	91.5%
White	11.3%	71.0%	12.9%	4.8%	88.7%
Black/African American	9.4%	75.0%	9.4%	6.3%	NA
Calhoun County	10.5%	79.1%	11.6%	14.0%	87.8%
White	8.3%	80.0%	10.8%	10.0%	89.2%
Black/African American	16.3%	77.6%	14.3%	24.5%	87.8%
Lafayette County	5.7%	77.0%	12.1%	11.0%	91.4%
White	3.8%	81.0%	11.0%	8.8%	91.5%
Black/African American	10.5%	67.9%	15.4%	16.7%	90.1%
Lowndes County	6.0%	77.9%	16.9%	12.1%	97.8%
White	3.5%	85.2%	14.6%	8.1%	95.7%
Black/African American	8.5%	71.0%	19.3%	16.0%	NA
Panola County	9.9%	73.1%	11.4%	12.8%	87.2%
White	8.8%	78.0%	9.3%	11.0%	78.6%
Black/African American	10.7%	70.1%	12.7%	14.1%	92.4%
Prentiss County	8.2%	84.3%	12.9%	12.1%	86.1%
White	7.8%	85.2%	11.3%	9.6%	83.9%
Black/African American	8.5%	80.9%	21.3%	25.5%	NA
Union County	9.8%	89.3%	14.2%	9.5%	91.4%
White	10.0%	90.3%	12.9%	6.8%	90.0%
Black/African American	9.3%	85.2%	16.7%	20.4%	NA
Mississippi	7.9%	75.9%	14.6%	12.3%	91.4%
White	6.6%	80.6%	12.2%	8.6%	88.7%
Black/African American	9.4%	69.9%	17.8%	17.3%	94.7%
United States	4.6%	77.6%	10.2%	8.3%	94.0%
HP2030 Goal	NA	80.5%	9.4%	NA	95.7%

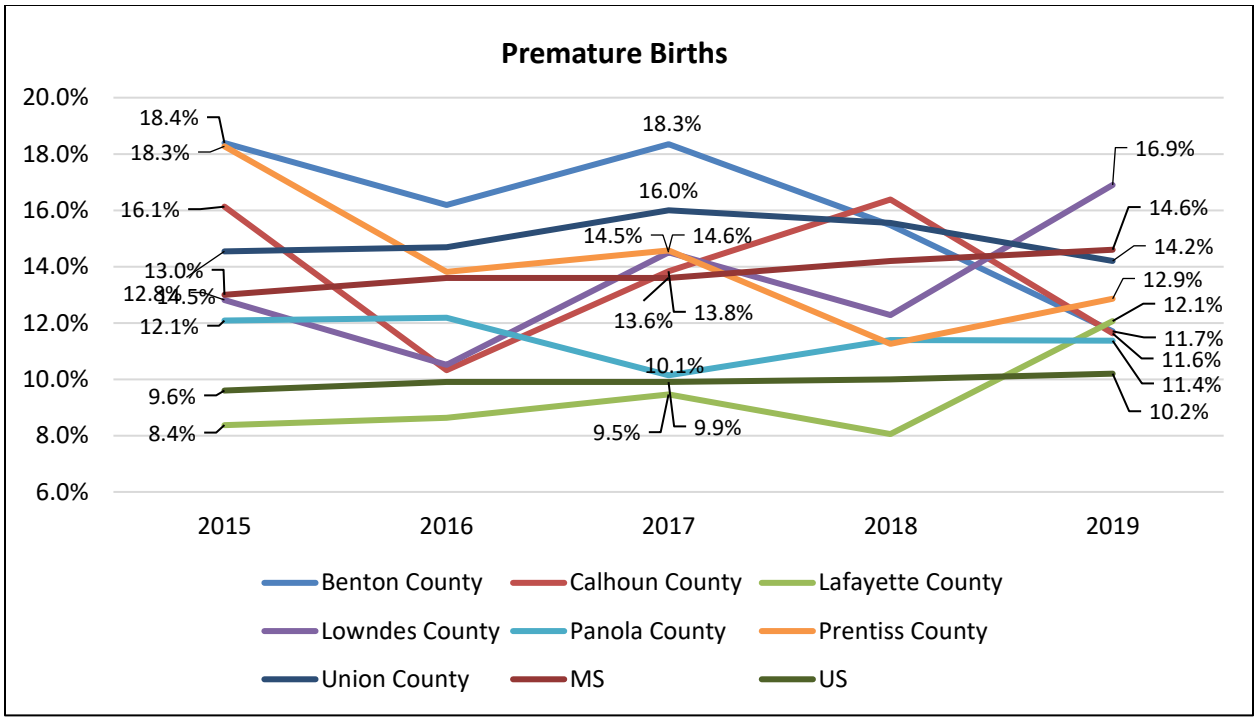
Source: Mississippi State Department of Health & Centers for Disease Control and Prevention



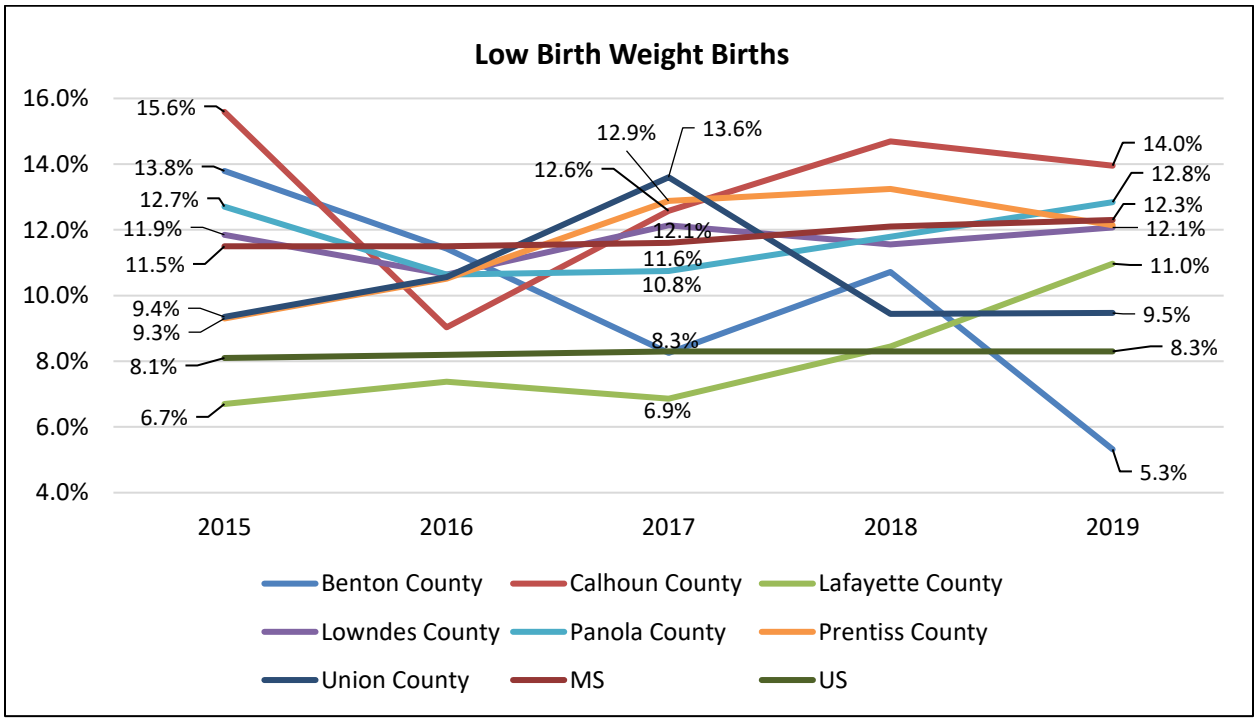
Source: Mississippi State Department of Health & Centers for Disease Control and Prevention



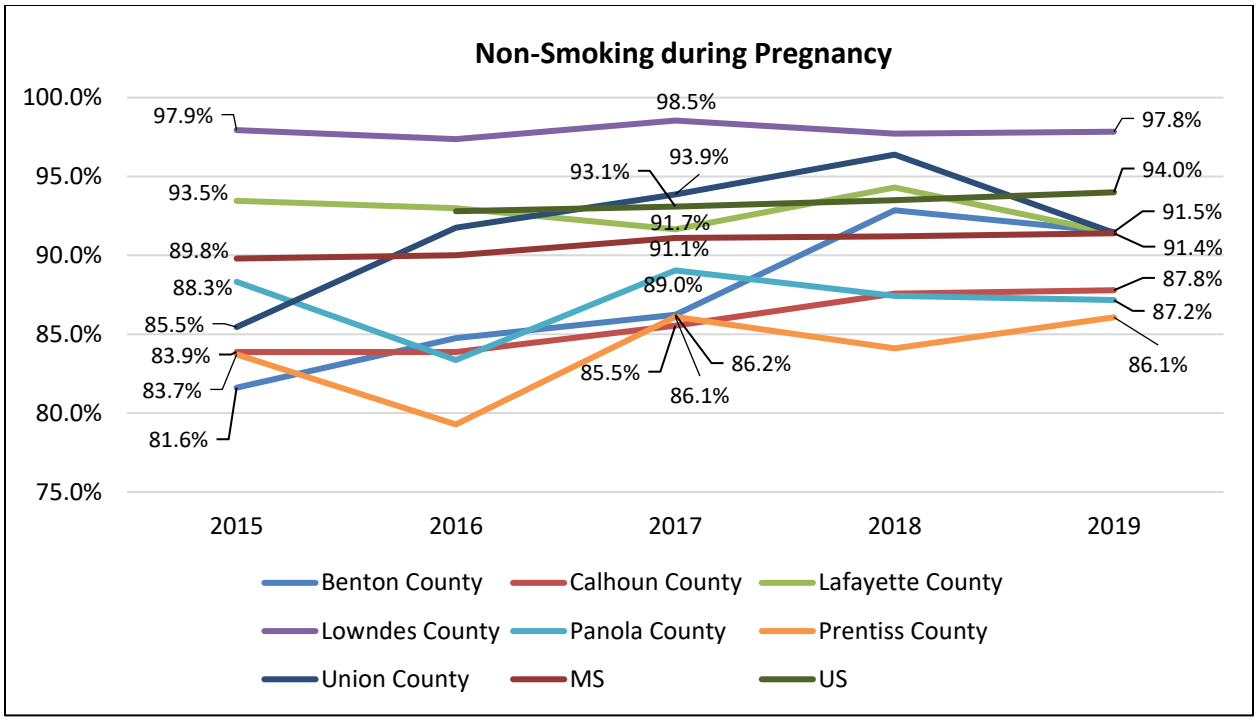
Source: Mississippi State Department of Health & Centers for Disease Control and Prevention
*In 2016, the U.S. universally adopted the 2003 U.S. Certificate of Live Birth, providing national indicators.



Source: Mississippi State Department of Health & Centers for Disease Control and Prevention



Source: Mississippi State Department of Health & Centers for Disease Control and Prevention



Source: Mississippi State Department of Health & Centers for Disease Control and Prevention
*In 2016, the U.S. universally adopted the 2003 U.S. Certificate of Live Birth, providing national indicators.

Across Mississippi, Black/African Americans experience more infant and maternal deaths than other racial and ethnic groups. **From 2015 to 2019, infant deaths totaled 1,631 in Mississippi, and the death rate among Black/African American infants was 60% higher than for white infants.** Within the North Mississippi service area, Lafayette and Prentiss counties have a higher rate of infant death than both the state and nation. While a Black/African American infant death rate is not reportable in Lafayette and Prentiss counties, known birth disparities among this population provide insight into likely drivers of high infant mortality in these communities.

From 2013 to 2016, Mississippi reported a total of 136 maternal deaths occurring during pregnancy or within one year of the end of pregnancy. **The pregnancy-related death rate for Black/African American people in Mississippi was 51.9 per 100,000 live births, nearly three times the white death rate of 18.9.**

2015-2019 Infant Deaths per 1,000 Live Births

	Infant Deaths per 1,000 Live Births
Benton County	NA (n=<10)
Calhoun County	NA (n=12)
Lafayette County	10.3
Lowndes County	NA (n=10)
Panola County	5.5
Prentiss County	9.1
Union County	5.4
Mississippi	8.9
White, Non-Hispanic	7.0
Black/African American, Non-Hispanic	11.4
Latinx (any origin)	3.3
United States	5.7
White, Non-Hispanic	4.8
Black/African American, Non-Hispanic	10.5
Latinx (any origin)	4.6
HP2030 Goal	5.0

Source: Mississippi State Department of Health & Centers for Disease Control and Prevention

Research findings from secondary data analysis were compared to qualitative research findings to compare perceptions to statistical data, identify root causes and contextualize data trends and contributing factors for identified health needs.

Key Informant Survey

An online Key Informant Survey was conducted with community representatives within Baptist's North Mississippi service area to solicit information about local health needs and opportunities for improvement. Community representatives included health care and social service providers; public health experts; civic, social and faith-based organizations; policy makers and elected officials; and others representing diverse community populations.

A total of 91 individuals responded to the survey. A list of the represented community organizations and the participants' respective titles, as provided, is included in Appendix B. Key informant's names are withheld for confidentiality.

Nearly 80% of key informants served all populations across the North Mississippi service area. A breakdown of other specific populations served by informants is provided below.

Primary Populations Served by Key Informant Survey Participants

	Number of Participants	Percent of Total
No specific focus/serve all people	72	79.1%
Young adults (age 19-24)	7	7.7%
Older adults/elderly	7	7.7%
Children (age 0-11)	6	6.6%
Uninsured/underinsured individuals or families	5	5.5%
Other*	5	5.5%
Adolescents (age 12-18)	4	4.4%
Low Income/Poor individuals or families	4	4.4%
African American/Black	3	3.3%
Immigrant/refugee populations	3	3.3%
Religious community	3	3.3%
Hispanic/Latinx	2	2.2%
LGBTQ+ community	2	2.2%
People with disabilities	2	2.2%
Homeless individuals or families	2	2.2%

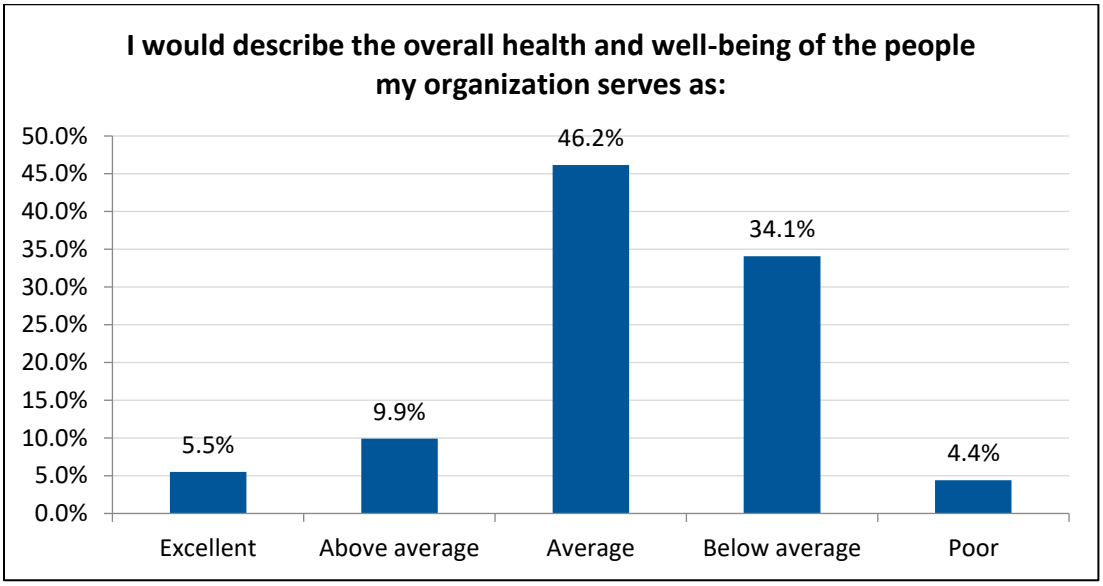
*Responses included women, middle-aged adults 25-65, cancer patients/families, working uninsured and community.

Key informants were asked a series of questions about perceived health priorities, perspectives on emerging health trends, including COVID-19, and recommendations to advance community and population health management strategies. A summary of their responses follows.

Health and Well-being

Thinking about the people their organization serves, key informants were asked to describe the overall health and well-being of individuals and the most pressing concerns affecting them. Key informants were instructed to select up to five pressing concerns from a wide-ranging list of health and social issues. Respondents were also given an option to "write in" a custom response.

Approximately 80% of key informants described the overall health and well-being of the people their organization serves as "average" or "below average."



Approximately 46% of key informants selected the "ability to afford health care" among the top five concerns for the people their organization serves. "Overweight/obesity" was the next most indicated concern chosen by 44% of respondents. "Economic stability" was the third most common concern, followed by "heart disease and stroke" (33%) and "mental health conditions" (29.7%).

Collectively, survey responses indicated a strong awareness of underlying SDoH as drivers for optimal health and well-being. In addition to "economic stability," informants identified "availability of healthy food options" and "lack of transportation" among the top concerns for the people their organization serves.

In your opinion, what are the top five most pressing concerns affecting the population(s) that your organization serves? Top Key Informant Selections

	Number of Participants	Percent of Total
Ability to afford health care (doctor visits, prescriptions, etc.)	42	46.2%
Overweight/Obesity	40	44.0%
Economic stability (employment, poverty, cost of living)	31	34.1%
Heart disease and stroke	30	33.0%
Mental health conditions	27	29.7%
Diabetes	24	26.4%
Cancers	19	20.9%
Stress (work, family, school, etc.)	15	16.5%
Availability of healthy food options	14	15.4%
Lack of transportation	13	14.3%
Limited health care providers or appointments available	13	14.3%
Older adult health concerns	13	14.3%

Social Determinants of Health

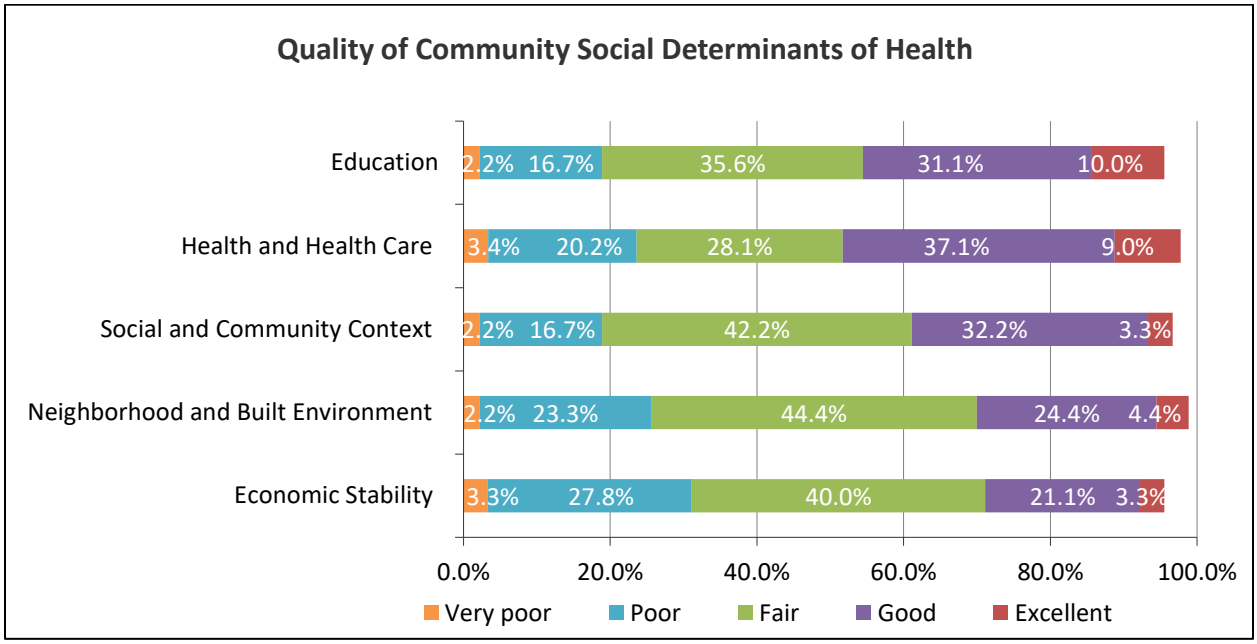
Social determinants of health are the conditions in the environments where people are born, live, learn, work, play, worship and age that affect a wide range of health risks and outcomes. Healthy People 2030 outlines five key areas of SDoH: economic stability, education access and quality, health care access and quality, neighborhood and built environment and social and community context.
Approximately 38.9% (n=35) of informants indicated that their organization currently screens clients, patients, constituents, etc. for needs related to SDoH.

Survey respondents were asked to rate the quality of SDoH in the community their organization serves using a scale of (1) “very poor” to (5) “excellent.” The mean score for each key SDoH area is listed in the table below in rank order, followed by a graph showing the scoring frequency. Mean scores were between 2.93 and 3.31, with most respondents rating the SDoH dimensions as “fair” or “good.” Education and health care were seen as the strongest community SDoH factors.

Results from the prior CHNAs in 2016 and 2019 are compared to 2022 results in the table below. While rankings based on mean score generally did not change, mean scores were higher for each SDoH area, potentially indicating more positive perception of these areas. Given these results are not statistically representative, these data should be further explored through qualitative research.

Ranking of Social Determinants of Health in Descending Order by Mean Score

	2022 CHNA Results	2019 CHNA Results	2016 CHNA Results
Education (e.g., high school graduation, enrollment in higher education, language and literacy, early childhood education and development)	3.31	2.80	3.06
Health and health care (e.g., access to health care, access to primary care, health literacy)	3.29	2.86	3.14
Social and community context (e.g., sense of community, civic participation, perceptions of discrimination and equity, incarceration/institutionalization)	3.18	2.68	2.76
Neighborhood and built environment (e.g., access to healthy foods, quality of housing, crime and violence, environmental conditions, transportation)	3.06	2.58	2.79
Economic Stability (e.g., poverty, employment, food security, housing stability)	2.93	2.61	2.85



COVID-19 Insights and Perspectives

Key informants were asked to identify the most likely sources of COVID-19 information for the people their organization serves. Key informants were instructed to select up to three sources from a wide-ranging list of options. An option was provided to choose "other" and add a source not included on the list.

Where were the people your organization serves most likely to get information about COVID-19?

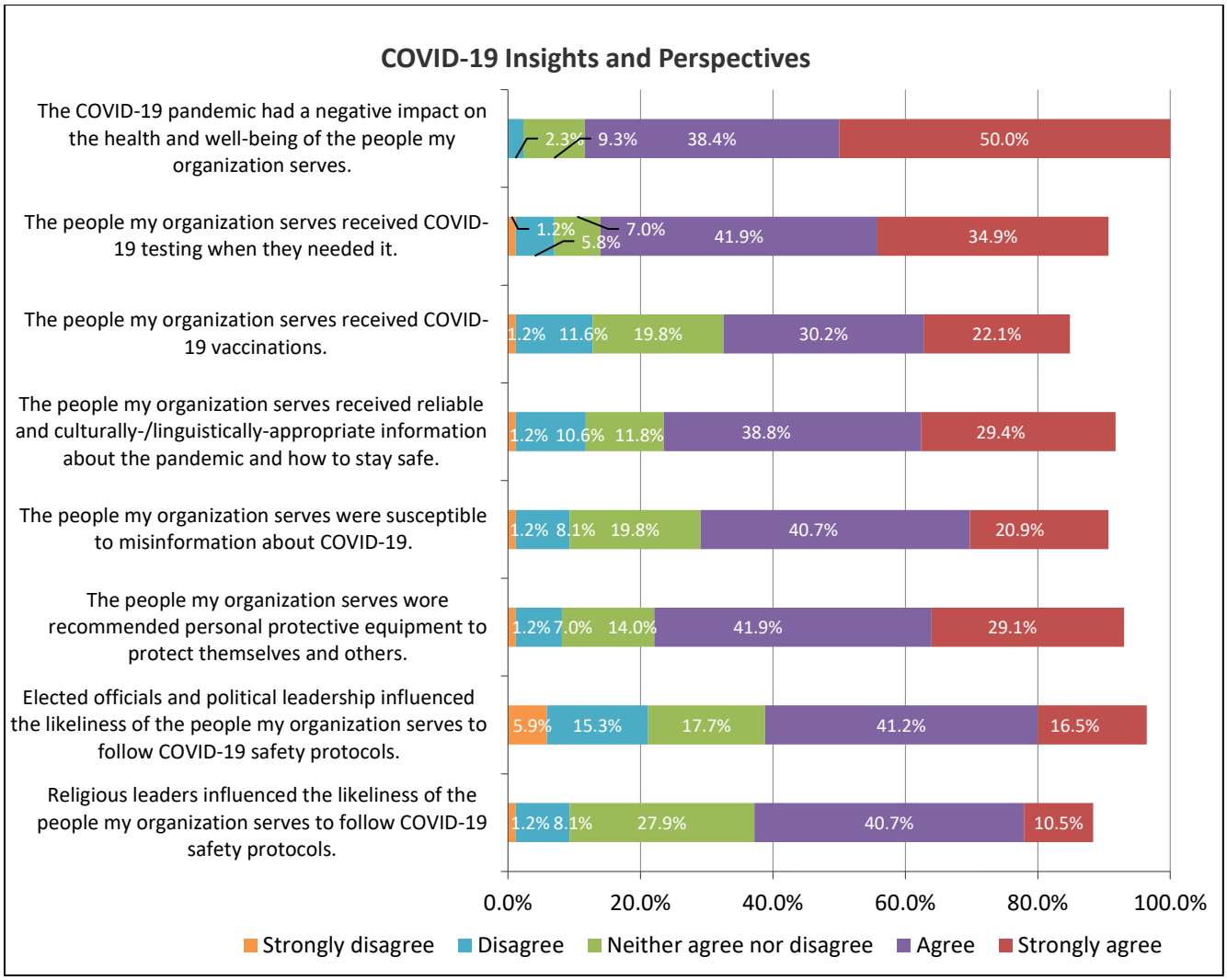
	Number of Participants	Percent of Total
Friends/family	42	48.8%
Social media	41	47.7%
Local news source/media	35	40.7%
National news source/media	29	33.7%
Health care providers	25	29.1%
Centers for Disease Control and Prevention (CDC)	16	18.6%
Church/religious leaders	15	17.4%
Local or state health department	11	12.8%
Don't know	4	4.7%
Political leadership	2	2.3%
Other*	2	2.3%
Health insurance providers	1	1.2%

*Responses included word of mouth and informant's organization.

Thinking about the people their organization serves, survey respondents were asked to rate the following statements about COVID-19 impact, availability of testing and vaccination, availability of reliable information, susceptibility to misinformation and likeliness to follow recommended safety protocols.

Nearly 90% of respondents agreed or strongly agreed that COVID-19 had a negative impact on the health and well-being of the people their organization served. About 77% of respondents agreed that people were mostly able to receive COVID-19 testing when they needed it and 71% agreed that the people they served wore recommended Personal Protective Equipment (PPE). About 52% of respondents believed their constituents were vaccinated; about 20% were not sure; and about 13% and did not think their populations were vaccinated.

Almost 70% of respondents agreed that people received reliable, culturally and linguistically appropriate information, and 42% of respondents thought they were also susceptible to misinformation. More than half of respondents thought that their constituents were influenced by political leaders (57.7%) and religious leaders (51.2%).



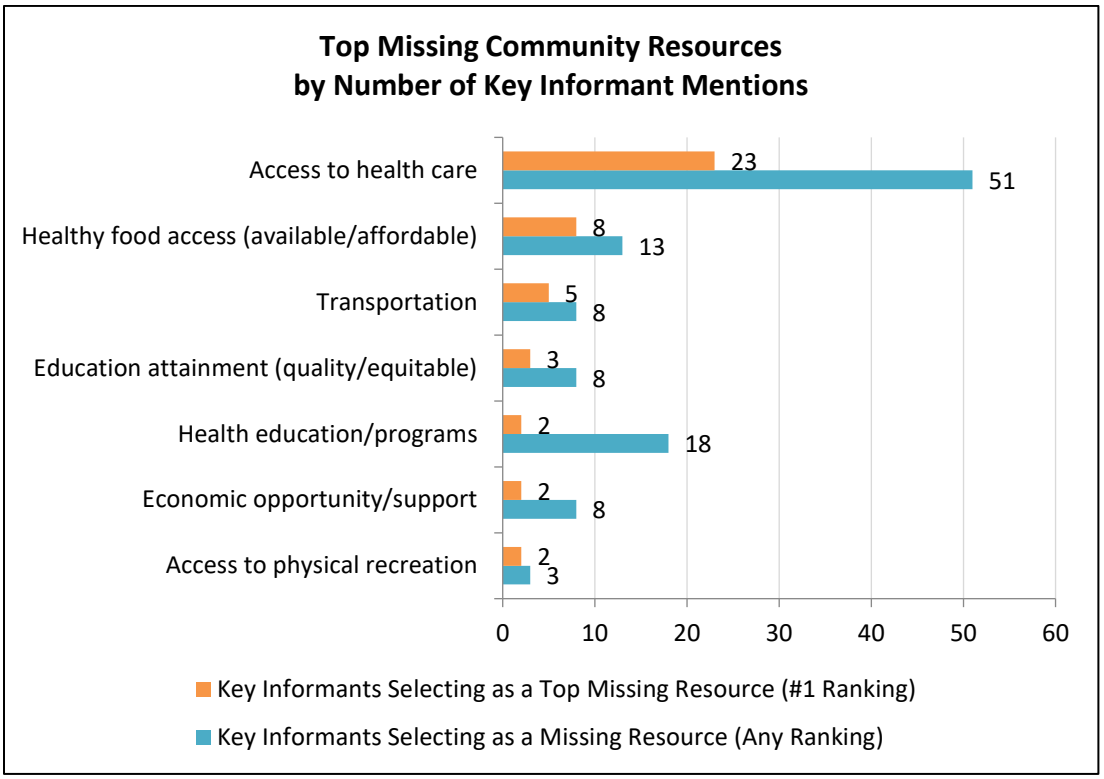
Community Resources That Impact Health

Key informants were asked to identify missing resources in the community that would help residents optimize their health. Informants were instructed to rank up to three write-in responses with No. 1 as the perceived top missing resource. The following graph summarizes identified missing resources by category and number of mentions by key informants.

Key informant responses reflected the theme of *access to health care* as the top missing resource. Specific concerns were affordability, including free or discounted service delivery, health insurance and prescriptions; availability of specialty care services, including mental health care, cardiology, dermatology, endocrinology and gastrointestinal; and availability of providers that accept Medicaid or low-income patients.

Health education and programs were also seen a needed resource with respondents indicating exercise, nutrition and COVID-19 among needed information. *Availability and affordability of healthy foods* was

also within the top three concerns. *Transportation, education attainment and economic opportunities* were included within the top five categories.



Health Equity

Key informants were asked how community organizations, including Baptist, could better serve minority populations, including Black, African American, Indigenous, immigrant, people of color, LGBTQ+ and others, to achieve health and social equity. Informants were invited to provide free-form comments about the topics. Verbatim comments are included below.

- *"Actively plan events in the communities in which different groups reside."*
- *"Advocate at the policy level to increase access to quality, equitable service for all, increase access to financial resources, create an atmosphere in organizations that embrace culture."*
- *"By trying to serve people where they are/in their community. Include them in the conversation. Designate seats on the governing board or community advisory board."*
- *"Education of providers and nurses on this before they come into contact with patients."*
- *"Ensure racial and health disparities are widely discussed within the medical profession (nurses, doctors, aids, assistants) and equity is instilled in every component of caregiving."*
- *"Have a diverse workforce so that patients see people like them. Reach out to organizations that serve these populations, be present in events that spread awareness of these populations and the struggles they face."*

- *"Help with better coordination of care, access to pharmaceuticals, good housing, better transportation, reliable internet access, mental health services."*
- *"Meet them where they are struggling. Go to the communities."*
- *"Partnership with faith-based community and local grassroots leaders."*
- *"Poverty is at the core of the issues in serving all populations. Funds to cover health care - whether for the uninsured or the insured with high deductibles - is critical. As are Saturday and evening hours. When people work for low hourly wages, they rarely have PTO and often have no mechanism to replace the income they have lost by "visiting the doctor". When one's focus is keeping a roof over head and at least some food in pantry and the lights on, health care unless an emergency or unbearable pain is not a realistic option. Organizations that understand poverty and the choices it forces people to make can make better decisions in how to serve that population."*
- *"Publicize that these groups are welcome. Baptist is perceived as 'exclusive'."*
- *"Put minorities in leadership positions. Directors/Managers/Administrators."*

Community Collaboration

Approximately three-quarters of the organizations represented by survey respondents currently collaborate with Baptist on local efforts to improve health. Respondents were asked for recommendations on how Baptist can better collaborate in the community to improve the health and well-being of residents. Verbatim comments are included below by overarching theme.

Access to Health Care

- *"Advocate for Medicaid expansion."*
- *"All patients' options for acute/emergency/crisis mental health screening while in your facility."*
- *"Better emergency ambulance service."*
- *"Provide access to specialists for uninsured."*
- *"Provide extensive stress management/coping skills training to combat the emotional impact of all that is going on (personally, world events, local, etc.)."*
- *"Our clients come from all areas and all income levels. Many of them have no health insurance. Are there any free health benefits for our clients?"*
- *"Transportation to and from clinics and appointments."*

Community Outreach

- *"Assist with provision of educational and support groups for those battling illness as well as their caregivers—practical, hands-on training and support."*
- *"Collaborate on community outreach, such as inner-city kids' ministries and food distribution programs."*
- *"Community health fairs targeting low-income areas."*
- *"Create awareness among Baptist employees of community partnerships."*
- *"Engagement of hospital personnel in the community."*

- *"Improve marketing—people do not know what we offer."*
- *"Involve our nursing students in your outreach to the community."*
- *"Make sure calendar of hospital events is widely available."*
- *"Offer grant money to improve healthy living programs."*
- *"Partner with food banks for food disparities."*
- *"Quarterly checkups with partner organizations."*

Youth Health

- *"Health education programs for kids."*
- *"Take interest in child abuse and prevention."*
- *"Younger people involved in organization to build careers."*

Patient Access to Care and Services Survey

An online Patient Access to Care and Services Survey was conducted with health care providers, leadership and staff employed by Baptist and representatives of community partner agencies. The survey was conducted to support Baptist's ongoing efforts to improve access to care, reduce health disparities and address the underlying inequities and SDoH that perpetuate disparate health outcomes.

A total of 436 individuals responded to the survey, representing communities across Baptist's tri-state service area. *Survey results are reported in aggregate to support systemwide planning efforts. Unique findings and trends are presented for each of the five Baptist CHNA service areas, as applicable.*

More than 40% of all survey participants worked in a hospital setting and 27.3% worked in a primary care office or clinic. The largest proportion of survey participants identified as physicians (57.9%), followed by nurse practitioners (20.3%). The most represented age groups were 55 to 64 (26.9%) and 45 to 54 (26.6%). Nearly 47% of participants identified as female, 43% as male and 0.9% as non-binary.

Geographic Areas Served by Survey Participants (as provided)

	Number of Participants	Percent
All Baptist service counties	46	10.6%
Central Mississippi Service Area (Attala, Hinds, Leake, Madison, Rankin, Yazoo counties)	59	17.9%
Memphis Metro (DeSoto County, MS; Fayette, Shelby, Tipton counties, TN)	115	34.8%
North Mississippi (Benton, Calhoun, Lafayette, Lowndes, Panola, Prentiss, Union)	85	25.8%
Northeast Arkansas Service Area (Craighead, Crittenden, Poinsett counties)	37	11.2%
West Tennessee (Carroll, Obion counties)	25	7.6%
Other*	26	7.9%

*Responses included surrounding counties in Arkansas, Mississippi and Tennessee, all patients regardless of location and select cities such as Memphis and Columbus.

Primary Work Setting of Participants Across the Tri-State Region (as provided)

	Number of Participants	Percent
Hospital	143	43.3%
Primary care office or clinic	90	27.3%
Other outpatient care setting (urgent care, specialty practice, surgery, imaging)	51	15.5%
Other*	36	10.9%
Federally qualified health center/community health center	6	1.8%
Academic institution	4	1.2%

*Responses included behavioral health, cancer center, administration, private practice, dental office, emergency department, hospice, non-profit clinic, OB/GYN, multiple locations, remote/virtual and state facility.

Role of Survey Participants Across the Tri-State Region (as provided)

	Number of Participants	Percent
Physician	191	57.9%
Nurse practitioner	67	20.3%
Other*	32	9.7%
Nurse	11	3.3%
Physician associate (physician assistant)	9	2.7%
Nurse navigator	5	1.5%
Behavioral health provider	2	0.6%
Chaplain	2	0.6%
Community health worker	2	0.6%
Site or shift manager	2	0.6%
Social worker	2	0.6%
Case manager	1	0.3%
Patient navigator/outreach specialist	1	0.3%
Doula/other birthing assistant	1	0.3%
Medical educator/preceptor	1	0.3%
Medical or nursing resident	1	0.3%

*Responses included administration, advocate, certified nurse anesthetist, CEO, dentist, health educator, HR, marketing, non-profit and therapist participants.

Age Group of Survey Participants Across the Tri-State Region (as provided)

	Number of Participants	Percent
25-34 years	31	10.4%
35-44 years	59	19.9%
45-54 years	79	26.6%
55-64 years	80	26.9%
65 years or more	48	16.2%

Survey participants were asked a series of questions about access to care and social services, perspectives on the impact of COVID-19 and SDoH on patient outcomes and opportunities to promote health and well-being and inclusive care environments. A summary of their responses follows.

Access to Care & Services

Thinking about the people their care site serves, survey participants were asked to rate access to the full continuum of care, the impact of SDoH and COVID-19 on health outcomes and perceptions of SDoH training needs. Ratings were provided using a scale of (1) "strongly disagree" to (5) "strongly agree," with an option for "don't know" or "not applicable (NA)."

Nearly 57% of all survey participants "agreed" or "strongly agreed" that their patients had access to the full continuum of care from conception to death. This finding varied by Baptist service area with higher perceived access in the Central Mississippi, North Mississippi and Northeast Arkansas service areas. Of note, 24% of participants serving the West Tennessee service area "agreed" or "strongly agreed" that patients had access to the full continuum of care.

More than half of all survey participants "agreed" or "strongly agreed" that SDoH negatively impacted the health of patients and their families, and nearly 70% "agreed" or "strongly agreed" that the COVID-19 pandemic negatively impacted health due to delayed preventive or maintenance care. Similarly, approximately 61% of participants "agreed" or "strongly agreed" that the pandemic exacerbated the negative impact of SDoH.

When viewed by service area, participants serving the North Mississippi service area were slightly less likely to perceive negative impact of SDoH and the pandemic on health relative to other service areas. It is worth noting that the North Mississippi service area had the highest proportion of participants who "agreed" or "strongly agreed" (54.1%) that their care site had the right amount of training and resources to address patient/family needs related to SDoH.

Please rate the following statements (Includes Participants Across the Tri-State Region):

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Don't Know/ NA
The patients my care site serves have access to the full continuum of care from conception to death.	7.1%	18.1%	8.0%	31.7%	25.2%	9.9%
The SDoH negatively impact the health of the patients and families my care site serves.	6.4%	10.3%	17.2%	34.7%	21.4%	9.9%
My care site has the right amount of training and resources to address patient/family needs related to SDoH.	5.7%	16.3%	22.5%	32.8%	12.6%	10.1%
The COVID-19 pandemic negatively impacted the health of the patients my care site serves due to delayed preventive or maintenance care.	3.9%	8.0%	10.6%	32.3%	37.2%	8.0%
The COVID-19 pandemic has had a negative impact on my care site's patients because it exacerbated various SDoH.	4.4%	8.3%	16.6%	34.3%	26.3%	10.1%

Please rate the following statements:
Percent Agree/Strongly Agree by Baptist Service Area

	Central Mississippi	Memphis Metro	North Mississippi	Northeast Arkansas	West Tennessee
The patients my care site serves have access to the full continuum of care from conception to death.	55.9%	48.7%	61.2%	56.8%	24.0%
The SDoH negatively impact the health of the patients and families my care site serves.	57.6%	63.2%	52.9%	64.9%	64.0%
My care site has the right amount of training and resources to address patient/family needs related to SDoH.	44.1%	37.4%	54.1%	37.8%	36.0%
The COVID-19 pandemic negatively impacted the health of the patients my care site serves due to delayed preventive or maintenance care.	74.6%	74.8%	62.4%	73.0%	68.0%
The COVID-19 pandemic has had a negative impact on my care site's patients because it exacerbated various SDoH.	62.7%	61.7%	58.3%	56.8%	60.0%

Thinking about the continuum of care and SDoH, survey participants were asked to identify the top three clinical service gaps and top three needed social services for patients. Participants rank ordered up to three free-form responses with No. 1 as the top clinical service gap or needed social service. The following tables summarize identified needs by category and number of mentions by participants.

Participant responses to the top clinical service gaps indicated strong awareness of the impact of SDoH on health and well-being. Collectively, SDoH were the top identified clinical service gap, identified by 51 participants as the No. 1 service gap and by 140 participants as a top three service gap. Among the top identified SDoH needs was transportation, followed by insurance coverage and economic security. Insurance coverage included both access or insured status and affordable coverage (e.g., copays). Economic security included income or financial support and job opportunities.

Other top identified clinical service gaps were mental health services, with a focus on psychiatry and psychology and services that are covered by insurance; primary and preventive care, with a focus on access to timely appointments and providers accepting new patients and/or patients with Medicaid; adequate medical staffing, particularly in light of COVID-19 and primarily affecting nursing availability and emergency department capacity; and health education services, with a focus on chronic diseases like diabetes and preventive care practices.

The top identified social service gaps closely aligned with the top identified clinical service gaps. Transportation was the top identified service gap, with a focus on accessible and reliable public transportation and assistance for patients to get to their medical appointments. Other top identified service gaps were health education and programs, with a focus on chronic disease, preventive care and parenting/infant care and staff support to identify patients with SDoH barriers, help patients navigate the health care and social service systems and coordinate hospital discharge and follow-up care.

What are the top three clinical service gaps experienced by the patients you serve?
Top Service Gaps Based on Number of Participant Mentions
(Includes Participants Across the Tri-State Region)

	No. 1 Clinical Service Gap	Top 3 Clinical Service Gap
	Number of Mentions	Number of Mentions
Social Determinants of Health (top needs listed below)	51	140
Transportation	18	52
Insurance coverage	13	25
Economic security	11	27
Mental health services (e.g., psychiatry/psychology, insurance covered services)	30	53
Primary/preventive care (e.g., timely appointments, accepting new patients, accepting Medicaid)	21	35
Adequate medical staffing (e.g., nursing staff, emergency department capacity)	15	36
Health education (e.g., chronic disease, preventative care/screenings)	15	35
Medication cost assistance	13	29
Continuity of care (e.g., communication and coordination between providers, integrated HER, coordination of follow-up visits and patient placement)	11	26
Specialty care (e.g., timely appointments)	10	25
Women's health (e.g., OB/GYN, high risk OB, doula services, screenings, particularly mammograms)	7	24

What are the top three social services or external community factors that would help improve SDoH for patients and residents? Top Services Based on Number of Participant Mentions
(Includes Participants Across the Tri-State Region)

	No.1 Social Service Gap	Top 3 Social Service Gap
	Number of Mentions	Number of Mentions
Transportation	29	91
Health education/programs (e.g., diabetes, asthma, preventive care, parenting/infant care)	26	59
Social workers/case managers (e.g., assistance with health care navigation, discharge support, social service awareness)	24	45
Mental health services	20	36
Insurance coverage (e.g., access, Medicaid expansion, universal coverage)	13	29
Affordable medications	12	24
Financial support and/or expanded health care options for un-/under-insured and individuals with low-income	11	17
Primary care (e.g., accepting Medicaid, rural availability)	10	14
Health foods (e.g., accessible, affordable)	9	37
Affordable, safe housing	8	18

Social Determinants of Health Impact

Survey participants were asked to rate their level of comfort in performing tasks related to SDoH, including identifying and discussing SDoH with patients and referring patients to available resources to address needs. Overall, 61% to 67% of participants were "comfortable" or "very comfortable" identifying and discussing SDoH that impact optimal health care for patients. Participants were slightly less "comfortable" or "very comfortable" referring patients to available community resources to address identified SDoH needs (58.5%).

Survey participants that served Northeast Arkansas and West Tennessee were less likely than other participants to report being "comfortable" or "very comfortable" identifying and discussing SDoH and/or referring patients to available SDoH resources. Of note, approximately 44% of participants serving West Tennessee reported being "comfortable" or "very comfortable" discussing SDoH with patients and 36% reported being "comfortable" or "very comfortable" referring patients for services.

Please rate your level of comfort in performing the following tasks related to SDoH (Includes Participants Across the Tri-State Region)

	Very Uncomfortable	Uncomfortable	Neither Uncomfortable nor Comfortable	Comfortable	Very Comfortable	NA
Identifying SDoH that impact optimal health care for patients	1.8%	2.9%	19.9%	40.8%	26.1%	8.5%
Discussing SDoH that impact health during your patients' office visits	1.8%	2.7%	18.5%	37.4%	24.1%	15.6%
Referring patients to available community/ external resources to address the SDoH that are affecting their health	2.1%	7.9%	22.4%	32.9%	25.6%	9.1%

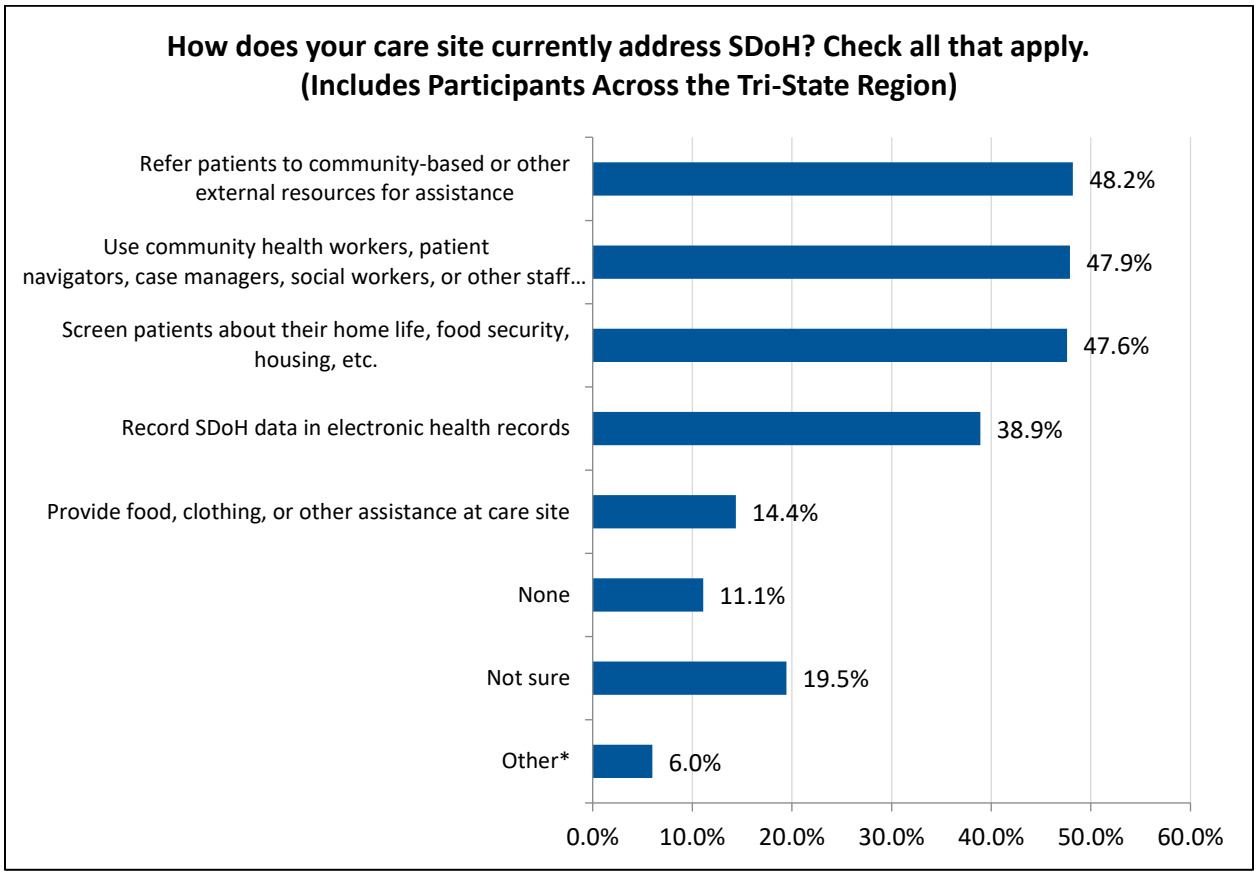
Please rate your level of comfort in performing the following tasks related to SDoH
Percent Comfortable/Very Comfortable by Baptist Service Area

	Central Mississippi	Memphis Metro	North Mississippi	Northeast Arkansas	West Tennessee
Identifying SDoH that impact optimal health care for patients	69.0%	67.0%	66.3%	58.3%	52.0%
Discussing SDoH that impact health during your patients' office visits	58.6%	67.8%	57.8%	54.3%	44.0%
Referring patients to available community/external resources to address the SDoH that are affecting their health	62.1%	54.8%	60.2%	47.2%	36.0%

Approximately 48% of survey participants indicated that their care site actively screens patients for SDoH, including home life, food security, housing, etc. When SDoH needs are identified among patient

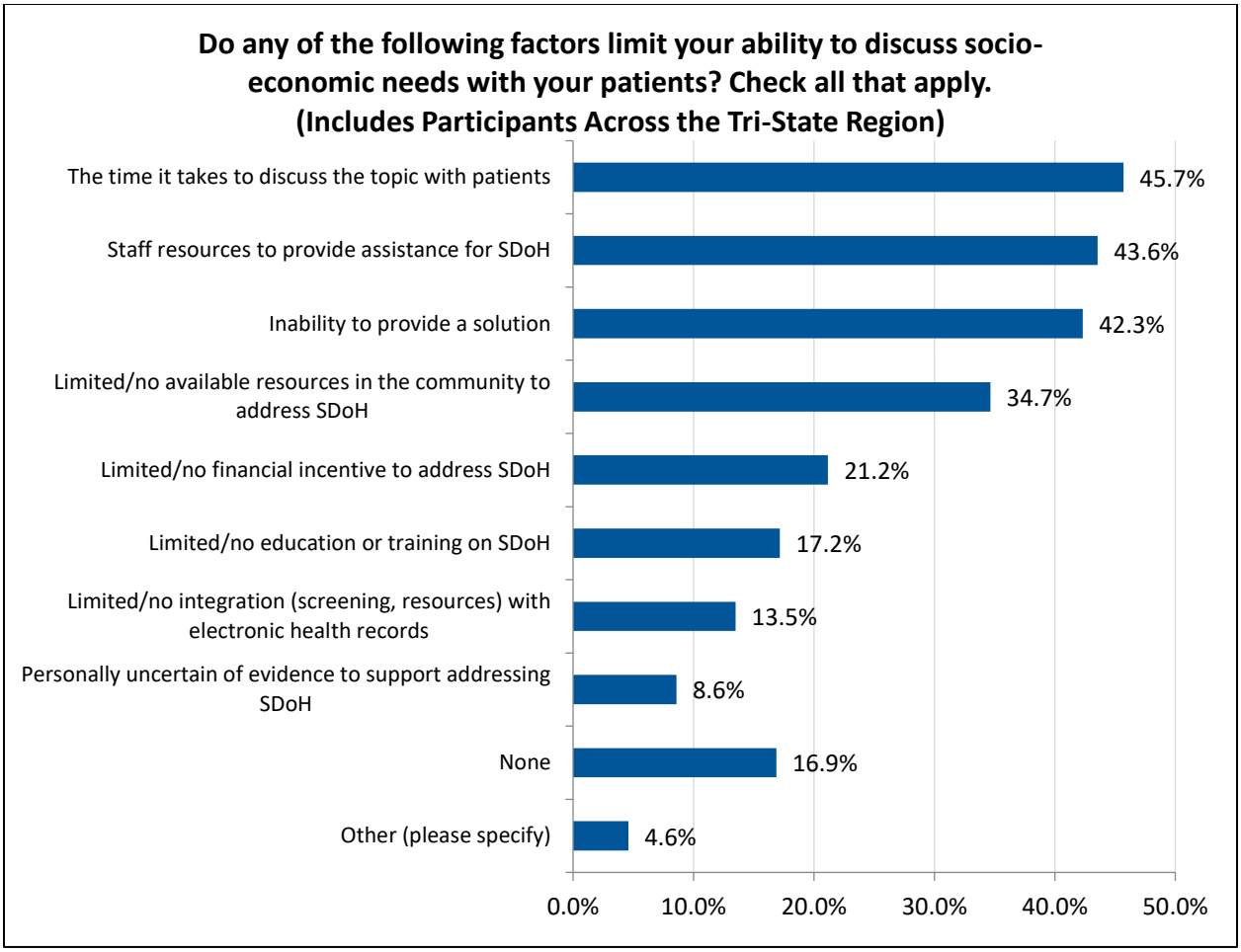
populations, a similar proportion of survey participants (48%) indicated that their care site refers them to community-based or other external resources for assistance and/or uses community health workers or other staff to assist them. Approximately 1 in 10 survey participants indicated that their care site does not address SDoH needs, and 1 in 5 participants were unsure of their care site's response.

The top barriers to discussing SDoH needs with patients, as identified by survey participants, were lack of care site resources (e.g., time and staffing to provide assistance) and inability to provide a solution to identified needs.



*Other responses by survey participants:

- *"An effort is made to enlist help for patient needs post D/C. But little follow up due to lack of staff."*
- *"Could use additional assistance in the specialty area--not just internal medicine."*
- *"Not aware of the community resources."*
- *"Provide samples of meds."*
- *"Provide upstream health education."*
- *"The questions are in the EMR with no follow through."*
- *"We do not screen because we do not currently have resources to refer and follow up with patients. However, we GREATLY need to implement screening and referral practices in our specialty clinic. SDoH impacts our patients in all aspects of life and chronic illness management."*
- *"We have very scarce resources to help our very underserved patients."*



*Other responses by survey participants:

- *"Case management and availability of resources."*
- *"I discuss health care issues with my patient. I'm not a social worker with 2 hours to spend with any patient. Whether they live in a tent or a 30,000 sq ft mansion, my care is the same."*
- *"Need a dedicated social service staff to come in to discuss patient's needs."*
- *"No nurses, so other life-saving tasks rank higher on the "to do" list."*
- *"Rural site, very limited resources."*
- *"We cannot impact the patients' socio-economic status, nor provide transportation when they have none. All we can do is treat them with respect and dignity while we have them here."*

Survey participants were asked to share a specific incident or common experience of how SDoH affect their patients' health. Select verbatim comments from participants serving the North Mississippi service area are included below. Across the service areas, participant comments spoke to diverse SDoH needs, including social isolation, illiteracy, unsafe living conditions, discrimination and financial barriers, among others.

Survey Participant Stories: North Mississippi Service Area
Please share a specific incident or common experience of how SDoH affect your patients' health.

- *"Due to certain discriminating factors, patients delay accessing health care system and get diagnosed later, patients lacking reliable transportation don't receive treatments on time and this effects patient's prognosis."*
- *"I see multiple patients who do not understand how to access care via FQHC and make use of their prescription services."*
- *"I truly cannot believe how bad the dental health is of our patients."*
- *"Many staff in the community in which I work have strong faith-based opinions about the immorality of LGBTQ lifestyle. Although I have not personally seen it impact patient care, I cannot help but think that this strong an unconscious bias would likely do so."*
- *"Patient had a Stage 4 cancer, unable to work, spouse was breadwinner, and he was unable to work due to taking care of patient. Home health services were provided but only offer limited services. There were issues with transportation and supplies and patient's insurance was very limited. This causes frequent ER visits to address problems that could have been managed at home with the appropriate resources."*
- *"Patient undergoes surgery and then there are no resources to help care for the patient at home or in an inpatient care facility. Patient gets discharged back into the environment that got him into trouble in the first place."*
- *"Patient with history of PTSD from being held down and beaten as a child. He was non-compliant with dialysis because receiving dialysis triggered flashbacks of that. He was much more successful when he started to receive low-dose benzo medication to deal with his trauma prior to dialysis. Patient's nurse clearly had no idea what trauma-center or trauma aware care was because he told me that he thought the patient was making it up for attention."*
- *"We have many patients who cannot afford basic medications. We have patients on Baptist Charity Care who will receive 1 month of medications after discharge from the hospital (Dispensary of Hope), but then they are no longer able to afford the medications. This is an absolutely heartbreaking and endless cycle because they continue to get readmitted and many eventually succumb to their chronic illness at a much younger age than they should."*
- *"We started seeing a female patient in her 40s about 2 years ago. She has a low literacy level, and she has had problems navigating the health care system. We have tried to help her as much as possible, but we have limited resources. She is on charity care, and she is unable to afford many of the meds that we have prescribed (even though we have tried to do the lowest cost meds available and helped her fill out numerous drug company assistance forms). Her chronic conditions have been uncontrolled since we started seeing her leading to multiple hospital admissions. Sadly, her conditions have progressed to the point where there is not much left to be done. She was admitted to the hospital within the past 2 weeks, and she was discharged home on hospice."*

Survey participants were asked to imagine that their care site is successful in doing everything possible to address SDoH and to describe what that looks like. Select verbatim comments from participants serving the North Mississippi Service Area are included below. Across the service areas, participant comments overwhelmingly spoke to the need for onsite social worker or case management services, robust community services that are connected with the clinical setting, comprehensive health and care management education and inclusive care practices.

Survey Participant Recommendations: North Mississippi Service Area
Imagine that your care site is successful in doing everything possible to address SDoH. What would that look like?

- *"A local public health partnership with our hospital to provide vaccines and public health screenings, medical information (especially about covid). Public health and private organizations, like churches, to help the elderly and poverty cases with food, shelter and clothing."*
- *"A resource would be immediately available for patients to receive counseling/apply for assistance, etc. whenever a SDoH need is identified. Staff would be aware of SDoH and screen for needs. (Time required would require FTE adjustment.)"*
- *"Additional resources would be huge for our clinic. The biggest need is a social worker/case manager. A pharmacist (even if it's just part time) to help educate patients about their meds and perform med recs. So many of our patients have no idea what they are taking or how to take it."*
- *"Equity of care with complete compassion and open minds."*
- *"Having hospital based visiting APPS see patients regularly at home and utilize EHR connectivity to bridge care gaps."*
- *"Ideally, we can have more resources such as social work, prescription drug assistance, dietitian that are available and work as a team. One of the main things we need is an established PCP for our patients. I am a gastroenterologist, but I end up doing a lot of Internal Medicine because most patients do not have a PCP. They see urgent care or the ER when they have an acute problem or need medication refills. Many of our patients go to urgent care or see a different nurse practitioner for their chronic conditions such as hypertension or diabetes. Patients need an established physician who monitored all aspects of their health care instead of seeing urgent care or the ER and then being dispersed to multiple specialists with no one particular person taking ownership of the patient. Many of the problems we deal with such as obesity, smoking, lifestyle changes need to be addressed over time by a trusted consisted physician." (Participant also served Memphis Metro service area)*
- *"It would be great to have closed loop referral so if we sent a patient to a particular clinic and they didn't show up we would know to make outreach."*
- *"This would include Medicare/Medicaid for all, so they don't have to worry about insurance or cost. It would include free transportation and recruiting and maintenance of specialist providers in a closer area."*

Survey participants were asked to share any suggestions to address SDoH affecting their patients. Select verbatim comments from participants serving the North Mississippi Service Area are included below. Across the service areas, participant comments included addressing patient financial barriers (e.g., free or reduced cost health care and medications, health insurance enrollment and expansion of benefits), expanding health care access (e.g., satellite clinics, telehealth, mental health services) and increasing awareness and connectivity to available community resources for both patients and providers.

Survey Participant Recommendations: North Mississippi Service Area
What suggestions would you like to share with Baptist that will address SDoH that affect your patients?

- *"Attempt to accept more insurance."*
- *"Care for psychological issues among children."*
- *"Encouraging the use of an easy-to-operate electronic integrated personal health record."*
- *"Expand clinic community network either internally/privately through Baptist Physicians Group or in collaboration with rural health clinic and/or specialty physician services organizations."*
- *"I know my church would like to be more involved with Baptist and other churches in our area to address the social needs. Organizing this would require multiple organizations working together. I believe we have caring people who would work for this."*
- *"I wish that every clinic in the county could hold quarterly meetings with hospital leadership to identify the resources that are needed and then work together towards making that need available in real time. A collaborative effort to improve community wellness needs to occur in this town if we are to produce change."*
- *"Improved public transportation, decreased cost clinics with appropriate care, community and health navigators 24/7 to help get people connected with the resources they need."*
- *"Invest in implementing health classes/education in K through 12 that educate young people on how to be an advocate for their own health."*
- *"My patients have had good results with financial counseling at Baptist. I think that a lot of the resources/services that are available are not known by me any of the physicians and other practitioners, including social work. From my personal experience, I was referred to Memphis by the case manager for a service that was available on the 1st floor our hospital." (Participant also served Memphis Metro service area)*
- *"Perhaps being able to provide transportation when patients have to travel to another hospital in the system because we don't have Physician/Specialty at our facility."*
- *"The hospital should have its own case manager full time to help internally."*

Diversity, Equity and Inclusion

Lastly, survey participants were asked to share policies and practices that would help create an organizational culture that reflects diversity, equity and inclusion (DEI) and initiatives and programs that would help in the delivery of more culturally competent care at their site. Participants rank ordered up to three responses with No. 1 as the top need. An option to "write in" any need not included on the list was provided.

The top policy or practice recommended by survey participants to help create an organizational culture that reflects DEI was cultural competence training (e.g., intracultural or cross-cultural education), followed by diverse workforce development and retention. Approximately 1 in 5 survey participants selected these items as the No. 1 need and more than 40% selected them as top three needs. Approximately 30% of participants also recommended DEI training for all staff as a top three need, and 25% recommended regular employee forums to discuss DEI practices and initiatives.

It is worth noting that 12% of participants indicated there is no need for policies and practices to promote DEI. This finding will be further explored in small group discussions with providers and community partner agencies to better understand perceptions of DEI and existing policies and practices already in place at care sites.

Please select the policies and practices you think would help create an organizational culture that reflects Diversity, Equity and Inclusion. Rank up to three items, with No. 1 as the most important. (Includes Participants Across the Tri-State Region)

	No. 1 Policy/Practice		Top 3 Policy/Practice	
	Number of Participants	Percent	Number of Participants	Percent
Cultural competence training (e.g., intracultural or cross-cultural education)	55	22.7%	100	41.3%
Diverse workforce development and retention	47	19.4%	105	43.4%
None	29	12.0%	53	21.9%
DEI training for all staff	28	11.6%	73	30.2%
Other*	22	9.1%	38	15.7%
Regular employee forums to discuss DEI practices and initiatives	20	8.3%	60	24.8%
Formal system for tracking and measuring DEI improvements	9	3.7%	47	19.4%
Systemwide policy for DEI practices that you can implement at your care site	9	3.7%	42	17.4%
DEI skills for managers and leaders	9	3.7%	39	16.1%
DEI training for new employees	8	3.3%	30	12.4%
DEI staff leaders as resources at each care site	6	2.5%	30	12.4%

*Select other responses by survey participants:

- *"A discussion of how race relations in Memphis have improved over the last 60 years."*
- *"Day care and after school care for staff and providers. Shift flexibility and job-sharing options when possible. Fewer white men at the top."*

- *"I do not think there is a pervasive problem or lack of DEI principles of behavior in organization."*
- *"In my experience, we are a very diverse workplace with respect for all individuals. Baptist should support initiatives at the high school and college level to encourage minorities to pursue health care professions."*
- *"It is necessary to involve the people who are being served. It would help to have community input, and to give a platform to those who have a testimony regarding their experiences."*
- *"Leadership comprised of ethnically, socially diverse group of individuals."*
- *"Study the Date of the Medicos group proving bilingual family medicine obstetrics 24/7/365 since 1999. The model has incorporated team care involving OB, MFM, VFOC, nursing and administration without external funding."*

The top initiative or program recommended by survey participants to enhance delivery of culturally competent care was a website or other central place with an inventory of community-based social services for patient referral, followed by training on SDoH. Approximately 1 in 10 survey participants selected these items as the No. 1 need and 35% selected them as top three needs. Approximately one-quarter of participants also recommended electronic medical record optimization for collecting patient information, networking events to share best practices for addressing SDoH in care sites and/or language translation for patient signage and promotional and educational materials.

Please select the initiatives and programs that would help you deliver more culturally competent care at your site. Rank up to three items, with No. 1 as the most important.
(Includes Participants Across the Tri-State Region)

	No. 1 Initiative/Program		Top 3 Initiative/Program	
	Number of Participants	Percent	Number of Participants	Percent
Website or other central place with inventory of community-based social services for patient referral	35	15.8%	77	34.7%
Training on SDoH	30	13.5%	79	35.6%
Electronic medical record optimization for collecting patient information (e.g., identity, pronouns, race, ethnicity)	28	12.6%	58	26.1%
Networking events to share best practices for addressing SDoH in care sites	23	10.4%	66	29.7%
Language translation for patient signage and promotional and educational materials	21	9.5%	52	23.4%
None	21	9.5%	36	16.2%
Training on unconscious bias	17	7.7%	68	30.6%
Training on antiracism	14	6.3%	31	14.0%
Other*	11	5.0%	25	11.3%
Increased diversity in patient signage and promotional and educational materials	9	4.1%	33	14.9%
Training on trauma informed care	7	3.2%	29	13.1%
Training on LGBTQ+ gender identity and affirming	6	2.7%	20	9.0%

*Select other responses by survey participants:

- *"Collaboration with local doulas and lactation counselors to establish allyship."*
- *"Implementation of routine SDoH screening with concrete referral/follow up avenues if positive (i.e., we can immediately refer patients if the screen is positive)."*
- *"More languages available for Epic discharge instructions."*
- *"Open access to family physicians with hospital privileges 24/7/365. A community based medical facility providing point of care services which deflect patient from automatic ER referral. Services are bilingual and incorporate services for the uninsured and the poorly insured patients of a low resource community."*
- *"Time to provide adequate care. Don't rush quality care."*
- *"Training on social determinants of health, LBGTQ+, & social bias (all)."*
- *"Training on who we are at Baptist, and who we treat, from an intersectional point of view."*
- *"Translator services, especially for ASL (American Sign Language)."*

The results of the Patient Access to Care and Services Survey were compared to secondary data research findings to compare perceptions to socio-economic and access to care statistical data. Interviews with Baptist health care providers, community agency partners and other key stakeholders were conducted as follow up to the survey to further illuminate opportunities for improving health and the health care experience.

Evaluation of Health Impact: 2019-2022 Community Health Improvement Plan Progress

In 2019, Baptist completed a CHNA and developed a supporting three-year implementation plan for community health improvement for each of its hospitals. The implementation plan outlined our strategies for measurable impact on identified priority health needs, including behavioral health, cancer, chronic disease and maternal and child health. Within six months of the release of the 2019 implementation plan, the COVID-19 pandemic shifted the priorities of our community and Baptist adapted our work to respond to the emergent needs of residents.

The following sections outline our work to impact the priority health needs and respond to COVID-19 in our communities. Specific hospital initiatives are highlighted as applicable.

Priority – Behavioral Health

Behavioral health strategies implemented by Baptist addressed the overarching goal to increase behavioral health screenings to initiate early treatment and improved outcomes for residents at all stages of life. As part of the 2019 to 2022 implementation plan, Baptist conducted the following programs and initiatives within the North Mississippi service area:

- Built a “hugging booth” at the hospital for seniors and their loved ones to be able to hug during the pandemic (Baptist Calhoun)
- Contributed financially to Memory Makers Respite Care Services, providing a secure and welcoming environment for adults with early to middle stage Alzheimer’s disease or other types of dementia by leading structured daily activities such as chair exercises, gardening activities and other creative interventions (Baptist North Mississippi)
- Contributed financially to National Alliance on Mental Illness (NAMI), the nation’s largest grassroots mental health organization dedicated to building better lives for individuals affected by mental illness (Baptist North Mississippi)
- Hosted a back-to-school health fair that included booths by Health Connect and LifeCore to provide mental and behavioral education to parents and students (Baptist Union County)
- Hosted the Illuminate Hope lighting ceremony* to create awareness for mental health concerns (Baptist Golden Triangle and Baptist Union County)
- In partnership with Baptist Nursing Home–Calhoun, hosted a virtual dementia tour, an evidence-based simulation of what it is like to live with dementia, followed by group discussion and education; the event was offered to employees, seniors, family members and the larger community (Baptist Calhoun)
- In partnership with The Blake at Oxford, a memory care facility, hosted a senior lunch and learn focused on signs and symptoms of dementia, mental illness, Alzheimer’s disease and available resources/programs within service area (Baptist North Mississippi)
- Participated in the Mississippi Extension Service Senior Day to provide educational materials on aging and mental health (Baptist Union County)

- Partnered with CrossRoads Behavioral Health in Batesville and other behavioral health providers to support service connections and referrals for patients (Baptist Calhoun)
- Partnered with the New Albany Police Department and local schools to reduce drug and alcohol use among youth with a donation to cover the cost of the educational materials for approximately 150 students (Baptist Union County)
- Provided a free community health fair, as well as health fairs for New Albany and Union County school staff, which included information on stress, anxiety, depression and COVID-related mental concerns (Baptist Union County)
- Provided free stress, anxiety and depression screenings at community and industrial health fairs to identify those with potential behavioral health conditions (Baptist Golden Triangle)
- Provided an Alzheimer's disease educational booth at community health fairs that included resources and screening information (Baptist Union County)

***Illuminate Hope**

Illuminate Hope was an evening for community residents to come together on World Mental Health Day. Participants received a curated experience box to navigate a special evening dedicated to mental wellness and resilience that culminated with a paper lantern release symbolizing hope for ourselves and our community.

Canopy Children's Solutions – a Jackson, Mississippi-based, non-profit that provides solutions for autism, behavioral and mental health issues, adoption and foster care – created Illuminate Hope to encourage people to have meaningful conversations around mental health and wellness. The event raises awareness for mental health issues and stigmas in the community and access to resources.

Priority – Cancer

Cancer strategies implemented by Baptist addressed the overarching goal to provide early detection and treatment to reduce death from breast, colorectal and lung cancers, and improve quality of life for patients. As part of the 2019-2022 implementation plan, Baptist conducted the following programs and initiatives within the North Mississippi service area:

- As part of the Baptist Cancer Center, provided *Thrivership**, a free comprehensive program to support patients from the moment of diagnosis through treatment and beyond
- Continued to provide the Transportation Services Project** to assess and ensure each patient's ability to access quality cancer care (Baptist North Mississippi)
- Deployed primary care physician protocols and automatic screening reminders for improved lung cancer detection and care
- Developed the Mid-South Miracle***, a multifaceted approach to preventing and treating lung cancer, with the goal of reducing lung cancer deaths by 25% by 2030
- Hosted breast and lung cancer screening events for employees and community members, as permitted during the pandemic (Baptist North Mississippi)

- Hosted community breast cancer awareness and education luncheons that included physicians, cancer survivors and information on screenings and prevention (Baptist Golden Triangle and Baptist Union County)
- In October 2020, established a Telegenic Program to provide a cancer genetic counselor to patients who were unable to travel to Memphis for this service (Baptist North Mississippi)
- In partnership with hospital staff, fundraised for the Baptist Cancer Center patient fund to assist with patient needs (Baptist Golden Triangle and Baptist Union County)
- In partnership with Susan G. Komen, created awareness for and helped fund free mammograms for uninsured and underinsured individuals (Baptist Union County)
- In partnership with the American Cancer Society, hosted a cancer survivor and awareness event (Baptist Union County)
- In partnership with the Mid-South Miracle, continued to increase patient access to clinical trials for advanced cancer care (Baptist North Mississippi)
- Launched breast and lung cancer screening campaigns (e.g., social media, in-person events, mailers) in all Baptist service areas
- Offered free support groups for individuals with cancer and their families; events were conducted virtually during the pandemic
- Provided virtual and in-person cancer education events, including health fairs, educational sessions, media appearances and speaking engagements, among others
- With financial support from Susan G. Komen Memphis-MidSouth, Hope Continues and other nonprofit agencies, provided free mammograms and other screenings to uninsured and underinsured individuals (Baptist Booneville and Baptist Golden Triangle)

Thrivership

The Baptist Cancer Center *Thrivership* program exists to support patients and their families – physically, emotionally and spiritually. It is a comprehensive program that includes free classes, seminars and support groups that address nutrition, fitness, mental well-being and spirituality, as well as seminars to increase understanding of cancer genetics and help patients manage the financial aspects of care.

****Transportation Services Project**

The Transportation Services Project was established in 2018 with the goal to assess and ensure each patient's ability to access quality health care by providing financial assistance as needed. The project meets a critical need in the region as eight of the surrounding counties are designated as Medically Underserved Areas, 100% of residents in these counties live in a HPSA and more community members experience poverty and other socio-economic challenges. As a result of these barriers, oncology patients living in these counties are forced to travel longer distances for care.

With the support of grant funding from the American Cancer Society Community Transportation program, the Baptist Cancer Center – Oxford has supported transportation services for cancer patients. From March 2021 to January 2022, the program served 138 unique patients, provided 586 one-way rides and exhausted all grant funding. With additional community provision, the cancer center was able

to support an additional 84 patients. The program was renewed and rewarded an additional $10,000 grant from the American Cancer Society for 2022.

*****Mid-South Miracle**
Lung cancer is one of the leading causes of death in the Mid-South. In fact, the rate of lung cancer deaths in Tennessee, Arkansas and Mississippi is nearly double that of the rest of the United States. To change the trajectory of this disease in the region, Baptist Cancer Center has developed the Mid-South Miracle, a multifaceted approach to preventing and treating lung cancer. This initiative leverages the extensive resources of Baptist Cancer Center along with the collective knowledge and expertise of our oncologists, surgeons, radiologists and pathologists to achieve prevention, early detection and faster treatments.

By mobilizing the Mid-South Miracle initiative and extending its reach to rural communities of the Mid-South, Baptist Cancer Center aims to increase lung cancer survival rates in the region and redefine lung cancer as a preventable, curable form of cancer. Through seven program components, Baptist Cancer Center physicians believe they can achieve a Mid-South Miracle and reduce lung cancer deaths in the region by 25% by 2030. The seven program components include effective and accessible smoking cessation programs, regular low-dose CT scans, incidental lung nodule screening, multidisciplinary care, high-quality surgical care, accessible clinical trials and coordinated clinical and community efforts.

Priority – Chronic Disease

Chronic disease strategies implemented by Baptist addressed the overarching goal to promote health as a community priority and increase healthy lifestyle choices. As part of the 2019 to 2022 implementation plan, Baptist conducted the following programs and initiatives within the North Mississippi service area:

- Collaborated with community partners to sponsor events promoting physical activity
- Contributed financially to the Oxford Community Market to provide affordable, healthy local foods for residents (Baptist North Mississippi)
- In partnership with Blue Mountain College, New Albany Schools, Myrtle School and East Union School, provided sports physicals for athletes (Baptist Union County)
- In partnership with elementary and high school career fairs, provided health care career and job opportunity information to promote youth interest in the field (Baptist Calhoun)
- Maintained a diabetes program recognized by the American Diabetes Association; programs are renewed annually based on standards of care
- Maintained Chest Pain Center accreditation at Baptist Golden Triangle and Baptist North Mississippi
- Offered the free Choose to Be* women's mobile health app to foster healthy lifestyles
- Participated in health fairs and community events to provide free screenings and education for healthy lifestyles and prevention of chronic disease
- Provided CPR and first aid training and certification (Baptist Golden Trinagle and Baptist Union County)

- Provided chronic disease education sessions and free monthly community luncheons focused on chronic conditions such as COPD, high blood pressure, diabetes and cancer (Baptist Golden Triangle)
- Provided free community drive-thru flu vaccination events and drive-thru diabetes screening (Baptist Golden Triangle)
- Provided free community drive-thru flu vaccination events, as well as vaccinations for the Mississippi Highway Patrol and emergency responders (Baptist Union County)
- Provided free monthly diabetes management classes (cancelled for a portion of the pandemic) for the community (Baptist Union County)
- Sponsored More Than a Meal, serving individuals with food insecurity, and hosted health awareness education during meals (Baptist North Mississippi)
- Sponsored Oxford Lovepacks with the donation of fruit for the entire school year for students with food insecurity (Baptist North Mississippi)
- Worked with the Baptist Cancer Center to establish blood sugar monitoring and treatment protocols for dually diagnosed diabetic and cancer patients

***Choose to Be Mobile App**

The Baptist Choose to Be mobile app gives women the knowledge and power to make the right choices for a healthy, active and productive lifestyle for every stage of life. The stresses women face from school, work, family responsibilities and physical and mental health issues are unique to women, and their remedies must be as well. The information in this app comes directly from the experienced team of obstetricians and gynecologists at Baptist Women's Hospital.

Using plain language and helpful graphics, the app is a definitive source of accurate information to help women navigate health issues and learn about their bodies from pre-adolescence through menopause, and beyond. From helping young girls learn what is happening in their first menstruation to understanding the relationships between lifelong women's health and heart disease (the silent killer among women), breast cancer and osteoporosis.

The app also provides fun insight on what women can do to feel healthier, more energetic and mentally sharper. Women receive dietary tips, stress management tools and ideas, self-breast care examination education, preventative care ideas including vaccines and screenings and fertility guidance and enhancement techniques. The information is arranged intuitively so finding topics of concern is as easy as a couple of taps.

Priority – Maternal and Child Health

Maternal and child health strategies implemented by Baptist addressed the overarching goal to improve birth outcomes for women and infants. As part of the 2019 to 2022 implementation plan, Baptist conducted the following programs and initiatives within the North Mississippi service area:

- Contributed financially to First Choice Center for Women to provide free pregnancy testing and counseling (Baptist Union County)

- Contributed financially to Oxford Medical Ministries Clinic, providing health care at no charge to underserved patients, including pregnant people (Baptist North Mississippi)
- Hosted an expectant mother baby fair that included medical providers, breastfeeding and other information, supplies and resources (Baptist Union County)
- Offered the free Beautiful Beginnings* maternity mobile app
- Provided free prenatal care, breast feeding and childbirth classes (Baptist Golden Triangle, Baptist North Mississippi and Baptist Union County)

***Beautiful Beginnings Mobile App**
Beautiful Beginnings - the free pregnancy app from Baptist Memorial Hospital for Women - is a wonderful tool to help achieve a healthier pregnancy. Users enter their due date to receive week-by-week alerts about their baby's growth. The app keeps track of important events leading up to birth, such as how many times the baby kicks, appointments, contractions and information on maintaining personal health. Users can also access important resources at Baptist Women's Hospital, pregnancy support groups and information about infant health and safety.

COVID-19 Response

Baptist has supported the community throughout the pandemic, providing financial assistance, education and social and emotional support, among other items. The following is a list of services provided by the hospital in response to COVID-19:

- Provided oversight of community personal protective equipment (PPE), temporal thermometers, face shields and orders for community partners
- Supported COVID-19 community-wide testing and vaccination efforts
- Supported COVID-19 disease and vaccination education in partnership with community agencies

Baptist welcomes your partnership to meet the health and medical needs of our community. We know we cannot do this work alone and that sustained, meaningful health improvement will require collaboration to bring the best that each of community organizations has to offer. To learn more about Baptist's community health improvement work or to discuss partnership opportunities, please visit our website at baptistonline.org/about/chna.

Appendix A: Public Health Secondary Data References

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Appendix B: Key Informant Survey Participants

- Agape Health Services, Executive Director
- American Cancer Society, Executive Director
- BancorpSouth, Branch Manager
- BancorpSouth, Manager
- BancorpSouth, VP
- Baptist Behavioral Health Care - Golden Triangle, Clinical Manager
- Baptist Booneville, Director of Marketing & Safety Officer
- Baptist Cancer Center, Director
- Baptist GT, CEO
- Baptist Health Services Calhoun, Board Chairman
- Baptist Memorial - GTR, Director of Pastoral Care
- Baptist Memorial Health Care Corp, EVP & CSO
- Baptist Memorial Hospital- Golden Triangle, Nursing Leadership
- Baptist Memorial Hospital North Mississippi, CMO
- Baptist Memorial Hospital North Mississippi, CEO
- Baptist Memorial Hospital-Calhoun, Administrative Assistant
- Baptist Memorial Hospital-Union County, Director of Marketing
- BMH Corp, Director
- BMH-Calhoun, CEO
- BMHGT, Director of Women's Services (retiring)
- BMH-GTR, Manager
- BMH-Union County, Community Health Nurse Coordinator
- Board of Supervisors, Supervisor
- Calhoun County School District, Assistant Superintendent
- Calhoun Economic Development Association., Inc., Director
- Children's Advocacy Centers of Mississippi, Community Outreach
- City of Columbus, City Council
- City of Columbus, Mayor
- City of Yazoo City, Alderwoman
- Columbus Police Dept., Chief
- Communicare, Clinical Office Manager
- Creekmore Clinic, Office Manager
- Creekmore Clinic, Physician- Owner
- Elementary school, Cafeteria Manager
- First Baptist Church, Pastor
- First Choice Center for Women, Inc., Executive Director
- First United Methodist Church, Senior Pastor
- Golden Triangle Contact Teleministry Inc DBA Contact Helpline, Executive Director
- Health Promotion & Wellness, Health Education Specialist
- Helping Hands of Columbus, Executive Director
- Hope House of Hospitality, Inc, Executive Director
- House of Grace, Domestic Violence Center, Executive Director

- International Paper, Communications Manager
- Janice Antonow, Former Alderman
- Lowndes County Council on Aging, Director
- Mississippi Food Network, External Affairs Specialist
- Mississippi State Department of Health, Community Health Director
- Mississippi University for Women, President
- MSDH/MCCCP, Program Coordinator
- neonFROG, inc., Owner/Marketing Director
- New Albany Main Street, Director
- New Albany School District, Coordinator
- Oxford Medical Ministries Clinic, Director
- Retired, Former CEO
- St. Jude Children's Research Hospital, Director of Managed Care
- St. Mary's Catholic Church, Pastor
- St. Paul Baptist Church, Minister
- Stanford dental clinic, Owner
- Susan G. Komen Memphis-MidSouth Mississippi, CEO
- The Commercial Dispatch newspaper, President
- TK Elevator North America Supply Chain and Manufacturing, Community Relations Partner
- UCDA, Joanne Lesley - Assistant Director
- Union county, Supervisor
- Union County, Tax Collector
- Union County Extension Office, Extension Agent
- United Way of Lowndes & Noxubee, Executive Director
- University of Mississippi, University Health Services
- Vibrant Church, Outreach Director
- West Point Ministerial Alliance, President