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MS Health & Hunger Atlas 2021



MISSISSIPPI HEALTH & HUNGER ATLAS 2021

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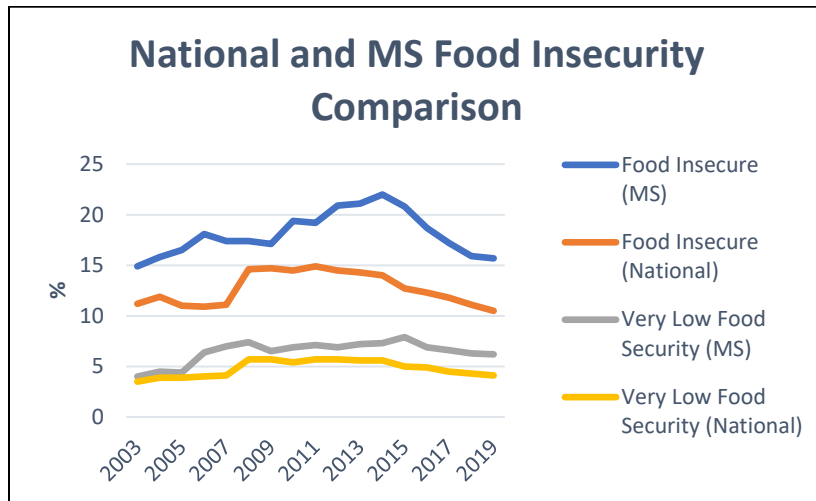
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Background

This atlas looks at two important problems in Mississippi—the extent of food insecurity and barriers to health. It also gauges how well public and private programs are doing in meeting the needs of Mississippians who may have difficulty in acquiring sufficient amounts and qualities of food or accessing the healthcare system.



Food insecurity rates in Mississippi are consistently and statistically higher than national averages—having been ranked as #1 or #2 for highest food insecurity rate every year for the past 15 years (USDA-ERS). Additionally, as national trends point toward declining rates of food insecurity, the percentage of the state population in Mississippi food insecure continues to rise. These increased rates of food insecurity are tied to,

among other hardships, poor health, especially in children. The combination of food insecurity and poor health has important economic and social costs, including income loss, work absenteeism, higher demand for public benefits and social services, and increased health care expenditures.

This atlas edition is being released as the COVID-19 pandemic highlights the acute impact of these long-term issues of hunger and poor health on our State's population and infrastructure. High rates of obesity, diabetes, hypertension, and poor access to hospitals and providers are all documented at the county level in this atlas. There are all co-morbid conditions that result in more serious complications for those infected with COVID-19. Yet, lessons from the 2017 atlas teach us that not all spaces in Mississippi experience these conditions equally nor do they experience these issues for the same reasons. The 2017 atlas highlighted the phenomenal work Delta counties do in mitigating poor outcomes through targeted programming for their residents, while the Gulf Coast counties have robust food systems that protect them for some of these negative outcomes.

This 2021 atlas reveals that many of the Delta counties are continuing the same good work being done from the 2017 edition. One significant change is that the Mississippi Coastal region's previous protective factor associated with sustainable food systems did not shield it from lower rankings in other performance measures.

Goals

Because the state of Mississippi consistently ranks in the bottom for a number of demographic, economic, food security, and health statistics, national thresholds for differentiating tiers of severity become useless in determining variation within the state (i.e. all counties are in the bottom tier). This atlas is designed to normalize the values to the state, allowing community stakeholders, policy makers, and other researchers to see the spatial differences in a range of food security and health related indicators. To this end there are five primary goals:

1. Raise Mississippian’s awareness of the extent and depth of food insecurity and health needs in their own state, regions, and counties;
2. Increase Mississippians’ knowledge of the extent of the work of public and private programs and the success of these program in reaching vulnerable populations;
3. Reveal geographic patterns, including regional and county-level differences in hunger and health need and performance in our state;
4. Provide measures of need and performance that can be updated on a periodic basis and compared to assess trends in need and performance variables over time;
5. Help public and private decision-makers assess food insecurity and healthcare needs and program performance as a means for improving the delivery of human, technical, and fiscal resources to residents and regions requiring assistance.

Reading the Atlas

County Tables and State Maps

This atlas provides information on indicators related to health and hunger need and program performance in meeting citizen needs at the county level. We have identified nine indicators related to health “need,” seven indicators related to hunger “need,” five indicators related to health “performance,” and four indicators related to hunger “performance.” For each indicator, we have used the most recent data available, which ranges from 2013 to 2020 calendar year. In the county pages, which comprise the majority of this report, readers will find county-level information on (A) economic and demographic indicators, (B) health and hunger need indicators, and (C) health and hunger performance indicators.

The following few pages of this atlas provide an overview of these three categories and information on how to read the county tables. Information depicting how to read the state maps is also included in this section.

County Profile Indicators

At the bottom of each county page is an economic profile that lists the demographic and economic status of each county. This profile provides context for each county because health and hunger indicators are often closely correlated to food security, diet, and health status. Within the economic profile, we provide both the county estimate for each indicator as well as the state estimate.

Need and Performance Indicators

The purpose of the “Need Indicators” is to provide measures of the extent of food insecurity, hunger, and health disparities in each Mississippi county. The “Performance Indicators” provide county level measures of the extent to which residents are participating in public programs intended to help cope with health needs and food insecurity and hunger. Assessing county level variation and need allows one to see barriers to health and hunger access and the success of programs’ performance established to address needs those needs.

How to Read the Need and Performance Indicator Tables

The left side of each table provides information on five indicators of hunger performance and four indicators on health performance. Three columns of information are presented for each variable. To demonstrate how to read this information, here is the first performance indicator, Primary Care Physicians per 100,000, for Adams County (see Page 23).

PERFORMANCE	COUNTY	STATE	RANK
HEALTH			
Primary Care Physicians per 100,000	83.2	52.8	Very High

- The *first column*, “County,” reports the result for the county on this indicator. In this case, there are 83.2 primary care physicians per 100,000 of the population in Adams County.
- The *second column*, “State,” shows the average across all counties for the state of Mississippi for the indicator. In this case, Mississippi’s average is 52.8 primary care physicians per 100,000 of the population.
- The *third column* is “Rank.” This last column indicates the county’s rank in comparison with all other Mississippi counties. Individual county results are divided into five quintiles to reveal whether a county’s need or performance is in the top 20 percent, second highest 20 percent, and so on. The labels under “county rank” indicate the following groups:
 - Very High: 80th to 100th percentile
 - High: 60th to 79th percentile
 - Average: 40th to 59th percentile
 - Low: 20th to 39th percentile
 - Very Low: 1st to 19th percentile

The example on Page 23 shows that the level in Adams County, in comparison to other counties, is in the high quintile for primary care physicians per 100,000 people.

State Maps

We provide maps for some of the health and hunger need and performance indicators to visually demonstrate the patterns among Mississippi's 82 counties. The maps allow the reader to quickly and easily note the rankings of all counties in the state.

Each map divides the state into five equal fifths, or quintiles, based on the calculations of the rankings, discussed earlier, for each county in the state.

The quintiles on each need and performance indicator map are arranged from very low to very high. Counties with a very low ranking are in the lowest 20 percent for need or performance. Being in the lowest 20 percent or first quintile means counties either have low need or low performance, depending on the indicator. Counties with a very high ranking are in the highest 20 percent counties for need or performance. For example, a very high ranking for percent of food insecure individuals means that county is in the highest 20 percent, or fifth quintile. This denotes the highest need group for percentages of food insecure people in that county.

General Trends

An examination of the county profiles and maps provides us with important insights into both levels of need and county efforts to meet that need. Generally, the highest need counties are concentrated in the Delta region, particularly as it relates to issues of food access and food insecurity. However, an

assessment of performance allows us to challenge common perceptions of these counties, and in fact, demonstrates that a number of Delta counties have the highest ranking for performance. What this assessment also allows us to see is that there are a number of central and southwest counties that rank low on the performance despite being high need counties.

It is also worthy of noting that within the state of Mississippi, the number of high need counties with low performance is more than double (17) in number than high need counties with high performance (7). A closer examination also reveals a number of outlier counties. For example, Quitman and Issaquena Counties, like many of the surrounding Delta counties, are both high need, but unlike many of the surrounding counties that are high performing, both have very low performance. Or Pike and Neshoba counties—high performing counties surrounded by low performing counties.

Though this atlas is not designed to be an exhaustive analysis, it begins to help provide an overview of the state of food security and health in the state and provides an important starting point for thoughtful consideration of how private and public sector responses to inequality are contributing to the welfare of Mississippians.

Economic Indicators

Total Population

The estimated number of people of all ages living in a county aggregated from 2015-2019.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Total Population Under 18

The estimated number of people under 18 years of age living in a county aggregated from 2015-2019.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Total Population 65+

The estimated number of people in a county 65 years of age and older aggregated from 2015-2019.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Families with Children

The estimated number of families with children under 18 years of age in a county aggregated from 2015-2019.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Single Parent Families with Children

The estimated number of households in a county headed by a single parent not currently married or living with a spouse aggregated from 2015-2019.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Dependency Ratio

“A measure defined by dividing the combined under 18 years and 65 years and over by the 18-64 years population and multiplying by 100.”

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Civilian Labor Force

People classified as employed or unemployed. The ACS defines employed civilians as ages 16 and older who are “at work” who did any work during the reference week and those who may have not been “at work” for a short period due to illness, weather, or other short-term cause. For qualifications for unemployed, refer to the unemployment rate definition below.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Percent Under 18 in Poverty

For whom poverty status can be determined, this is the estimated percent of the county’s population under 18 years of age living at or below 100 percent of the poverty rate.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Percent Total Population 65+ in Poverty

For whom poverty status can be determined, this is the estimated percent of the county’s population 65 years and older living at or below 100 percent of the poverty rate in 2015.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Percent Population Below Poverty (MAP)

For whom poverty status can be determined, this is the estimated percent of the county's total population living at or below 100 percent of the poverty rate.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Percent Families in Poverty

For whom poverty status can be determined, this is the estimated percent of families in a county living at or below 100 percent of the poverty rate.

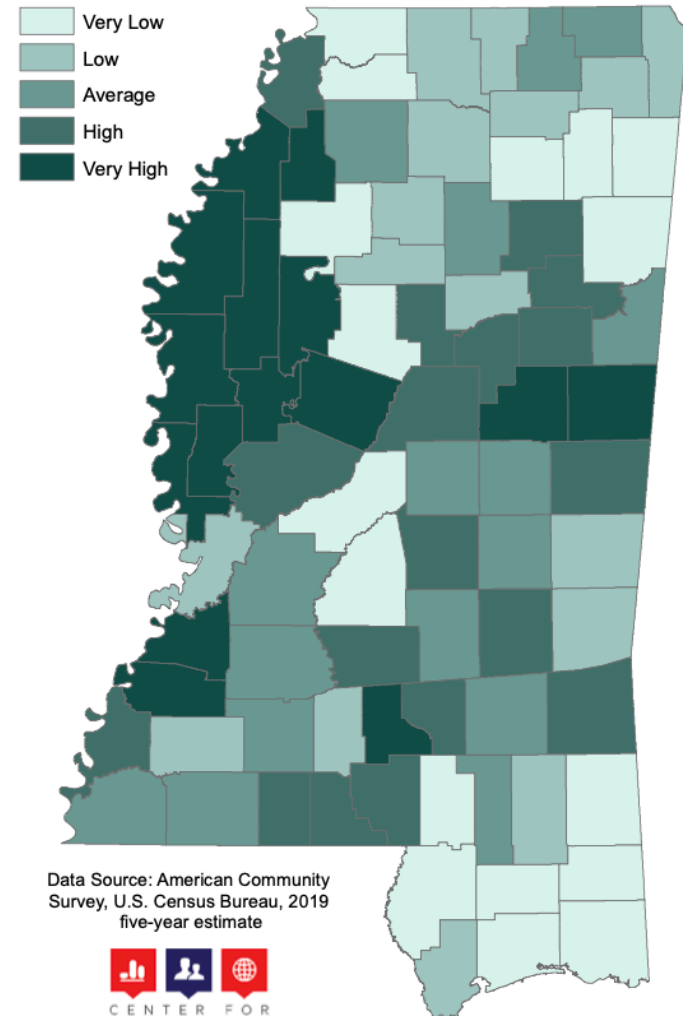
Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Median Family Income

“The median divides the income distribution into two equal parts: one-half of the cases falling below the median income and one-half above the median. For households and families, the median income is based on the distribution of the total number of households and families including those with no income. The median income for individuals is based on individuals 15 years old and over with income. Median income for households, families, and individuals is computed on the basis of a standard distribution.”

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Percent Population Below Poverty



Data Source: American Community Survey, U.S. Census Bureau, 2019 five-year estimate



Percent Single Parent Families in Poverty (MAP)

For whom poverty status can be determined, this is the estimated percent of households in a county headed by a single parent not currently married or living with a spouse.

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

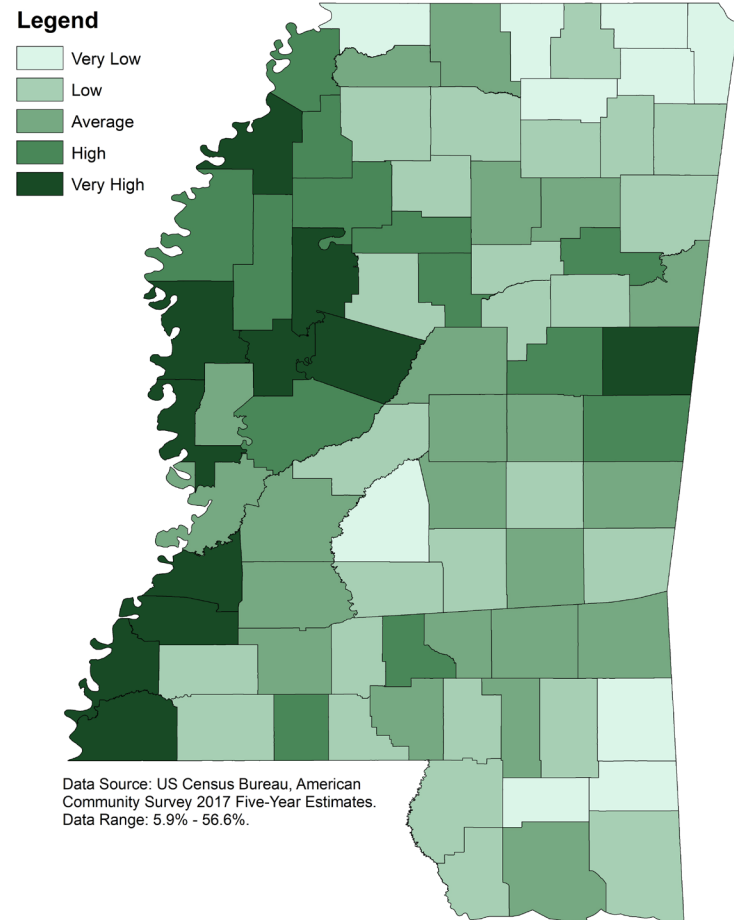
Unemployment Rate

The unemployment rate represents the number of unemployed people as a percentage of the civilian labor force.

"All civilians 16 years old and over are classified as unemployed if they (1) were neither "at work" nor "with a job but not at work" during the reference week, and (2) were actively looking for work during the last 4 weeks, and (3) were available to start a job. Also, included as unemployed are civilians who did not work at all during the reference week, were waiting to be called back to a job from which they had been laid off, and were available for work except for temporary illness."

Source: American Community Survey, U.S. Census Bureau five-year estimates, 2019.

Percent Single Parent Families Below Poverty by County in Mississippi



Need Indicators

Health

Teen Pregnancy Rate per 1,000 Live Births (MAP)

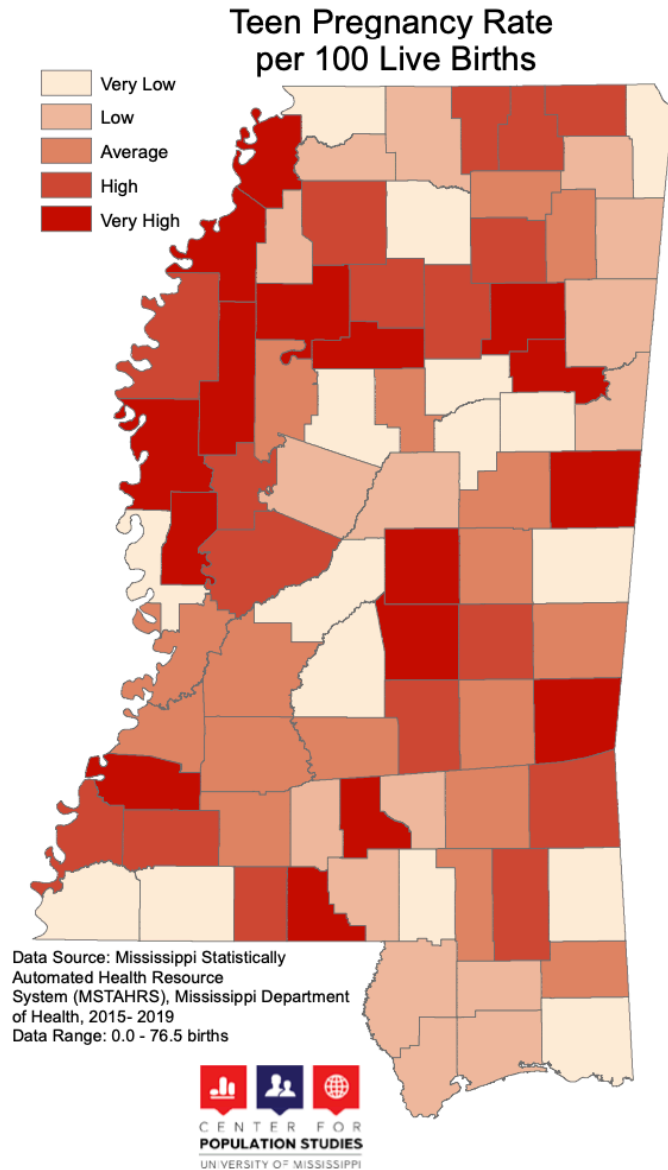
This rate is measured for mothers 10 to 19 years of age and accounts for the number of teen live births, per 1,000 live births. "The teen summary tables contain statistics on induced terminations (abortions) and pregnancies (combination of births, reportable fetal deaths, and induced terminations). Many Mississippi residents have induced terminations outside of Mississippi. At the time this information was posted, less than half of the 2015 induced terminations from Tennessee had been received. Producing statistics without these records would seriously underestimate the numbers and rates dependent on these induced terminations. Once these records have been received and edited, this page will be updated and the teen summary tables added."

Source: *Mississippi Statistically Automated Health Resource System (MSTAHRs)*, Mississippi Department of Health, 2019.
Available from: <http://mstahrs.msdh.ms.gov/>.

Low Birth Weight per 100 Live Births

The number of births, per 100 live births, where the fetus weighs less than 2,500 grams, from 2015 through 2019.

Source: *Mississippi Statistically Automated Health Resource System (MSTAHRs)*, Mississippi Department of Health, 2019.
Available from: <http://mstahrs.msdh.ms.gov/>.



Pre-Term Birth Rate per 100 Live Births

Births per 100 live births from 2015 through 2019.

Source: Mississippi Statistically Automated Health Resource System (MSTAHRS), Mississippi Department of Health.

Source: Mississippi Statistically Automated Health Resource System (MSTAHRS), Mississippi Department of Health, 2019.

Available from: <http://mstahrs.msdh.ms.gov/>.

Adult Obesity Rate (MAP)

The estimated percent of the population 20 years and older that qualify as obese (Body Mass Index greater than or equal to 30) in 2014 using three year estimates.

Source: Behavioral Risk Factor Surveillance Survey, Center for Disease Control, 2014.

Adult Diabetes Rate

The estimated percent of the population diagnosed with diabetes by a doctor in 2014 using three-year estimates.

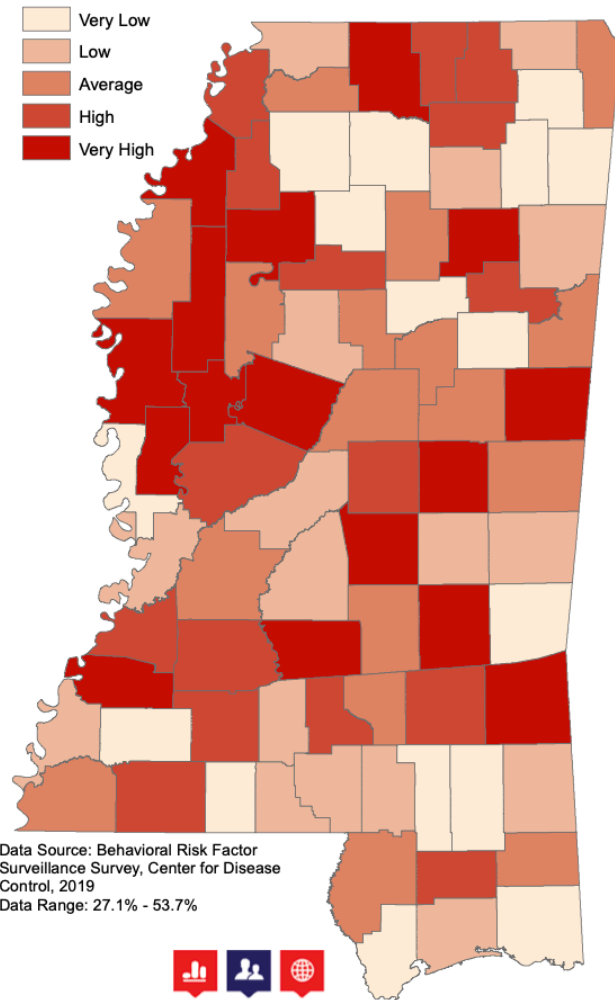
Source: Behavioral Risk Factor Surveillance Survey, Center for Disease Control, 2014.

Adult Hypertension per 100,000 Deaths

The estimated number of individuals per 100,000 of the population 35 years of age and older for whom high blood pressure is listed on the death certificate as the primary cause of death.

Source: Behavioral Risk Factor Surveillance Survey, Center for Disease Control, 2012-2014.

Adult Obesity Rate (%)



Data Source: Behavioral Risk Factor Surveillance Survey, Center for Disease Control, 2019
Data Range: 27.1% - 53.7%



Uninsured Adults (MAP)

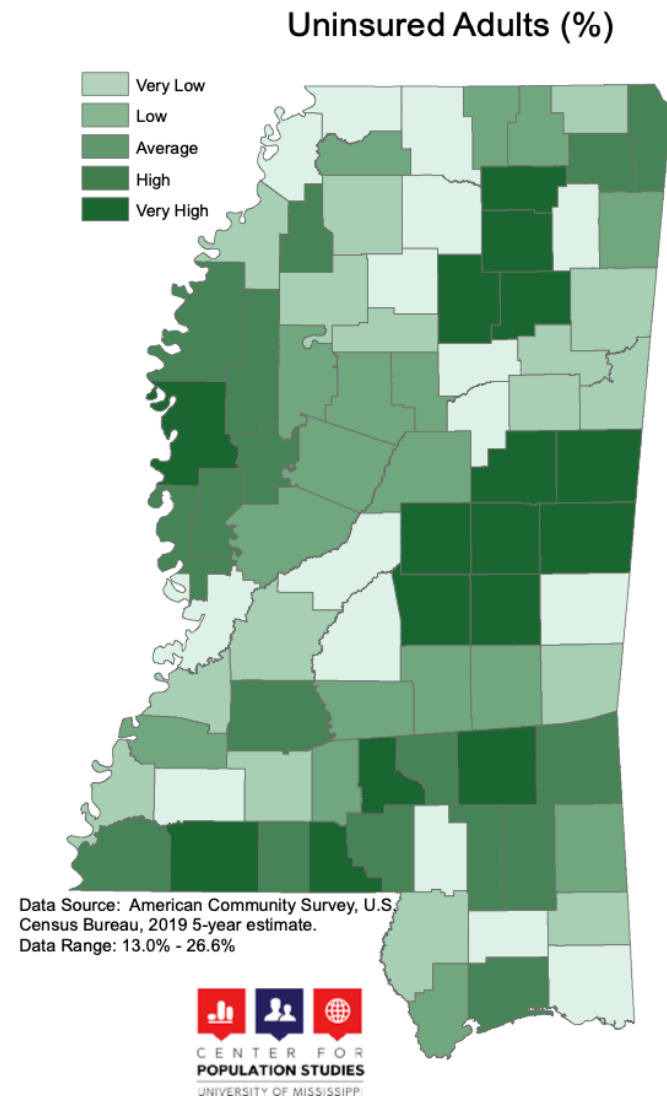
The estimated percentage of the population age 18 to 65 that lacks health insurance coverage.

Source: Small Area Health Insurance Estimates 2016, data aggregated by 2019 County Health Rankings.

Uninsured Under 18

The estimated percentage of the population less than 19 years of age that lack health insurance coverage.

Source: Small Area Health Insurance Estimates 2016, data aggregated by 2019 County Health Rankings.



Hunger

Food Insecure Individuals (MAP)

The estimated percentage of individuals in the U.S. that experienced inadequate access to nutritious food at the county level. Feeding America adapted this measure from the USDA survey to establish the extent of food insecurity of individuals at the national level.

Source: The 2019 Feeding America Map the Meal Gap collected from the 2013-2017 Current Population Survey.

Children Food Insecure

The estimated percentage of children under the age of 18 living in households in the U.S at the county level that experienced inadequate access to nutritious food at some point during the year. Feeding America adapted this measure from the USDA survey to establish the extent of food insecurity in households with children at the national level.

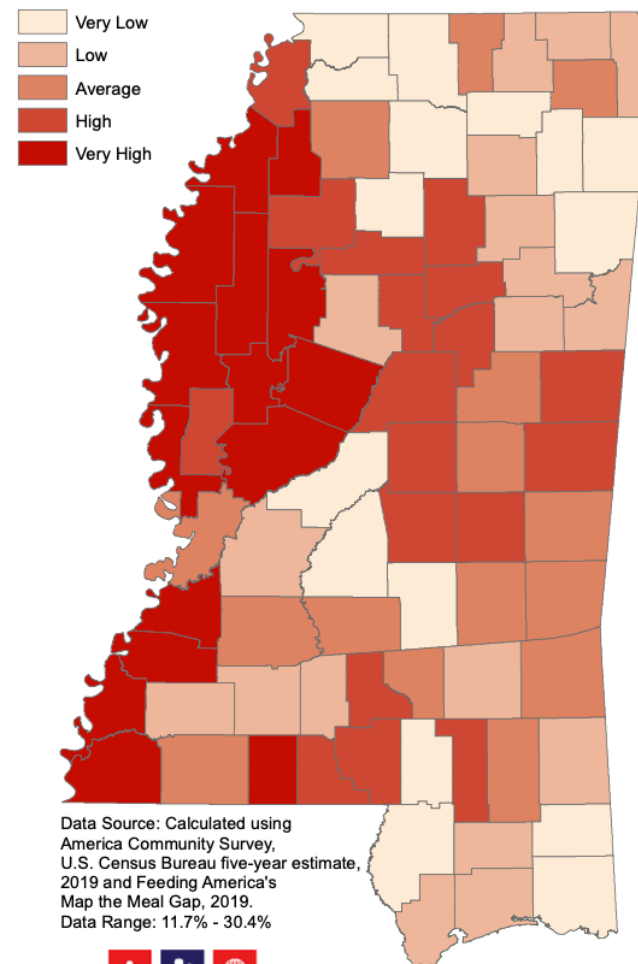
Source: The 2019 Feeding America Map the Meal Gap collected from the 2013-2017 Current Population Survey.

Food Insecure with Hunger

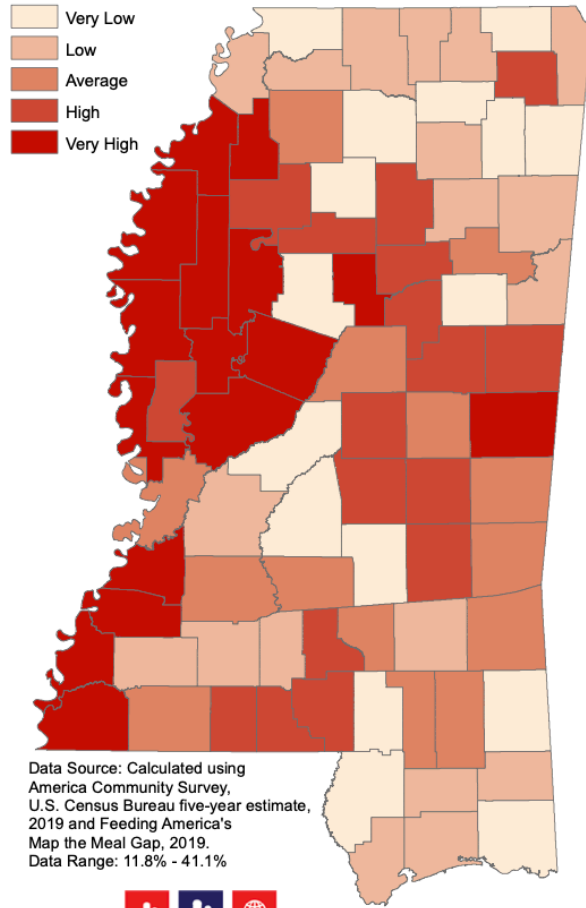
The estimated percent of the total population food uncertain with hunger in 2017 in a county. This is based on a state level calculation from USDA and Feeding America.

Source: USDA 2017 data and 2019 Feeding America Map the Meal Gap collected from the 2013-2017 Current Population Survey. Additional analysis and calculation conducted through University of Mississippi Center for Population Studies.

Food Insecure Individuals (%)



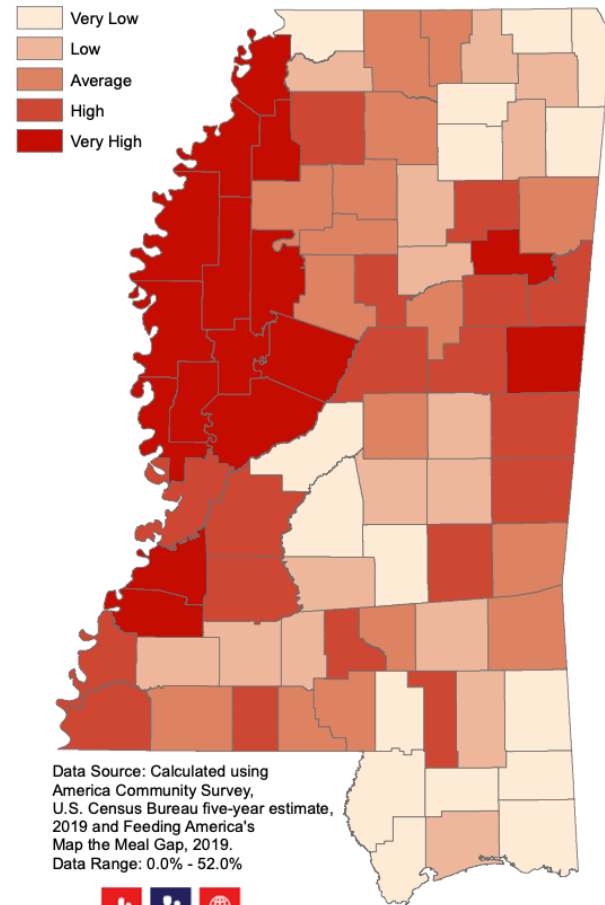
Children Food Insecure (%)



Data Source: Calculated using America Community Survey, U.S. Census Bureau five-year estimate, 2019 and Feeding America's Map the Meal Gap, 2019.
Data Range: 11.8% - 41.1%



Food Insecure with Hunger (%)



Data Source: Calculated using America Community Survey, U.S. Census Bureau five-year estimate, 2019 and Feeding America's Map the Meal Gap, 2019.
Data Range: 0.0% - 52.0%



Population Income Eligible for SNAP

The estimated percent of the total population below the 130 percent poverty threshold that qualify individuals for the Supplemental Nutrition Assistance Program.

Source: American Community Survey, U.S. Census Bureau 5-year estimates, 2019. Additional analysis and calculation conducted through University of Mississippi Center for Population Studies.

Children Income Eligible for SNAP

The estimated percent of the population less than 18 years of age below the 130 percent poverty threshold that qualify children for the Supplemental Nutrition Assistance Program.

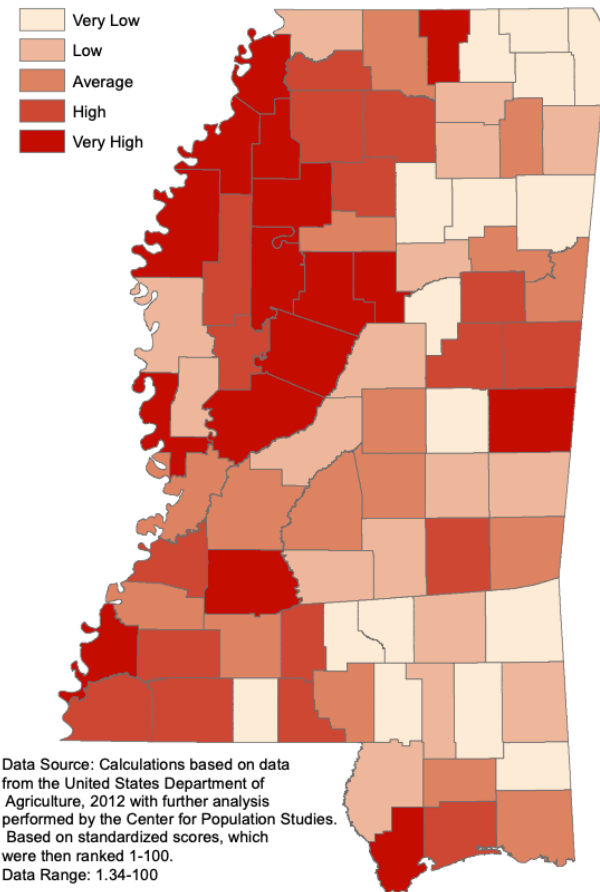
Source: American Community Survey, U.S. Census Bureau 5-year estimates, 2019. Additional analysis and mapping conducted through University of Mississippi Center for Population Studies.

Food Affordability (MAP)

The estimated percent of income required each week by households in 2019 to meet average expenditures on food for that county. This indicator was calculated using the average weekly median household income from the American Community Survey and the average cost of meals calculated by Feeding America.

Source: American Community Survey, U.S. Census Bureau five-year estimates, U.S. Census Quick Facts, 2019 and Feeding America's Map the Meal Gap, 2019.

Low Food Access Index



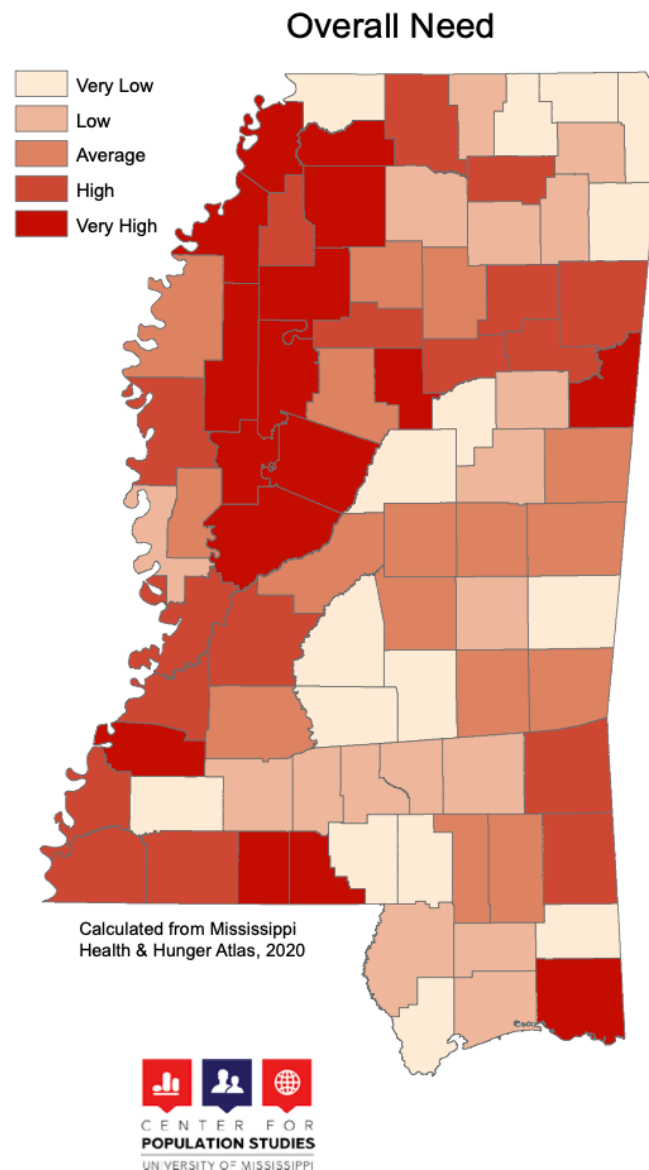
Low Food Access Index (MAP)

This index incorporates the percentage of individuals with low access to grocery stores; individuals with low income and low access to grocery stores; and individuals with low income, low access to grocery stores, and no vehicle. The index is calculated by standardizing the three variables and then summing those standardized scores. The counties are then ranked from best food access to worst food access on a scale of 1 – 100 with 1 indicating best food access and 100 indicating worst food access.

Source: Calculated from 2017 USDA data.

Overall Need Rank (MAP)

The Overall Need Rank is a single composite measure of all 16 health and hunger need indicators for each county presented in this atlas. The 14 out of 16 indicators are weighted evenly by dividing 100 by all 14 indicators. This means each need indicator is weighted 7.14 percent. We then ranked each county 1-82 for all 14 indicators. A lower rank signifies that a county has a lower level of need and a higher rank has a higher level of need. So, a rank of one indicates the lowest need and a rank of 82 indicates the highest need. Then we multiplied each county ranking by 7.14 percent. To get the composite overall need we summed all 14 indicators. To map the overall need rank we took the sum for each county and divided it into quintiles.



Performance Indicators

Health

Primary Care Physicians per 100,000 (MAP)

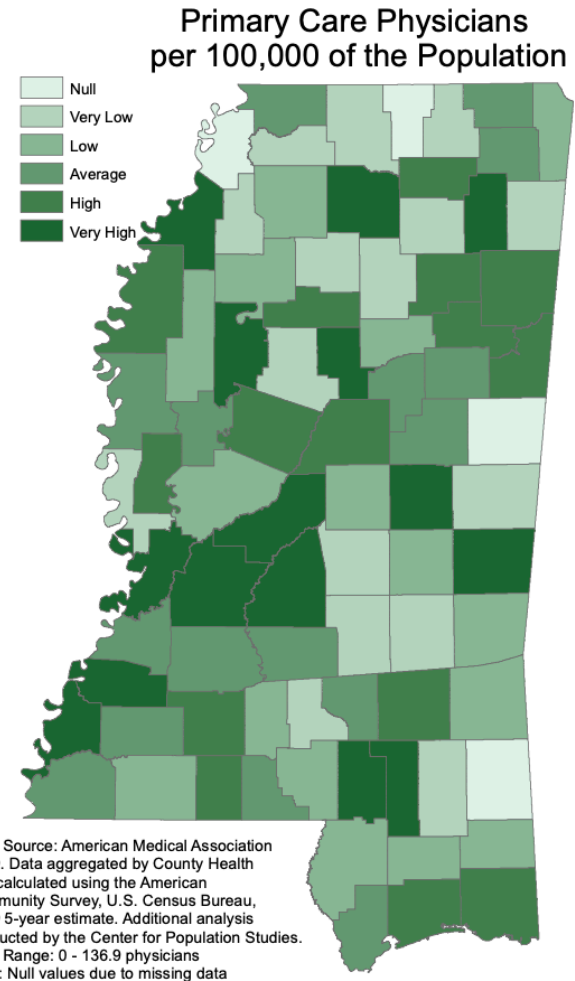
The estimated number of primary care physicians per 100,000 people in a county.

Source: The 2020 County Health Rankings aggregated data from 50 sources such as the American Medical Association, American Hospital Association, US Census Bureau, Centers for Medicare & Medicaid Services, Bureau of Labor Statistics, and the National Center for Health Statistics.

Other Primary Care Providers per 100,000

The estimated number of other professionals that offer health care services such as nurse practitioners and physician assistants per 100,000 people.

Source: The 2020 County Health Rankings, which used 2018 data obtained from the NPI Registry that aggregated data from the National Plan and Provider Enumeration System.

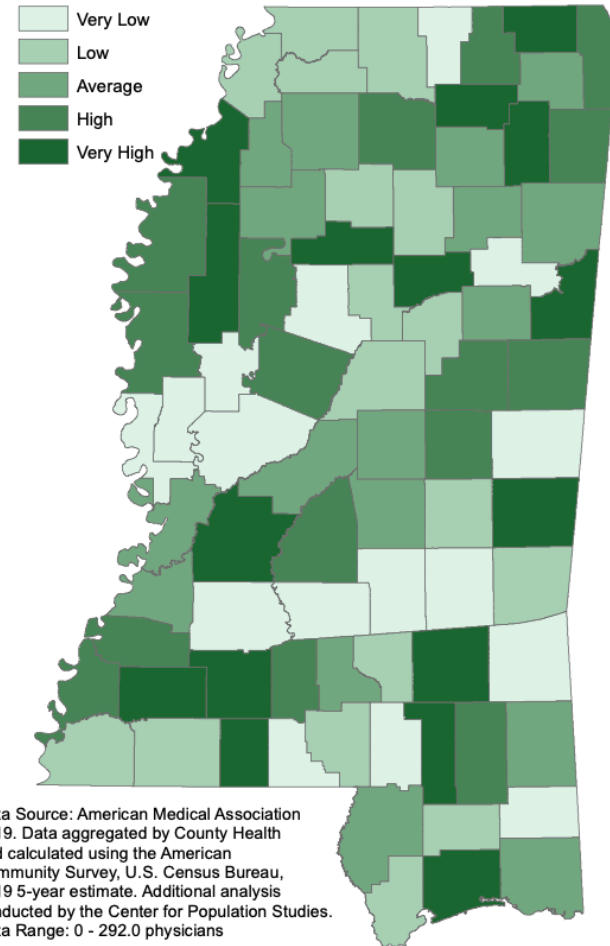


Medicaid Enrollees per Primary Care Provider

The estimated number of individuals enrolled in Medicaid per every primary care provider. Providers are considered to be primary care providers (PCP) if they indicated they were PCPs in the self-identified National Provider Identity (NPI) file. (All providers are required to register in the NPI records). PCPs included not only physicians, but also nurse practitioners and other specialties that are expected to provide primary care. PCPs were expected to belong the county where they practice medicine, as indicated by their NPI records.

Source: Medicaid Pharmacy Quality Alliance aggregated by University of Mississippi Pharmacy School, 2016.

Other Primary Care Physicians per 100,000 of the Population



Data Source: American Medical Association 2019. Data aggregated by County Health and calculated using the American Community Survey, U.S. Census Bureau, 2019 5-year estimate. Additional analysis conducted by the Center for Population Studies. Data Range: 0 - 292.0 physicians



Hunger

SNAP Enrollment (% Total Population)

The estimated percent of county residents who participated in the Supplemental Nutrition Assistance Program in FY2018.

Source: Mississippi Department of Health, 2018 and the American Community Survey, U.S. Census Bureau 5-year estimates, 2019.

SNAP Enrollment (% Eligible) (MAP)

The estimated percent of county residents who are income eligible for the Supplemental Nutrition Assistance Program and who participated in the program for FY2018. To determine income eligibility, all households earning less than 130 percent of the poverty threshold are considered.

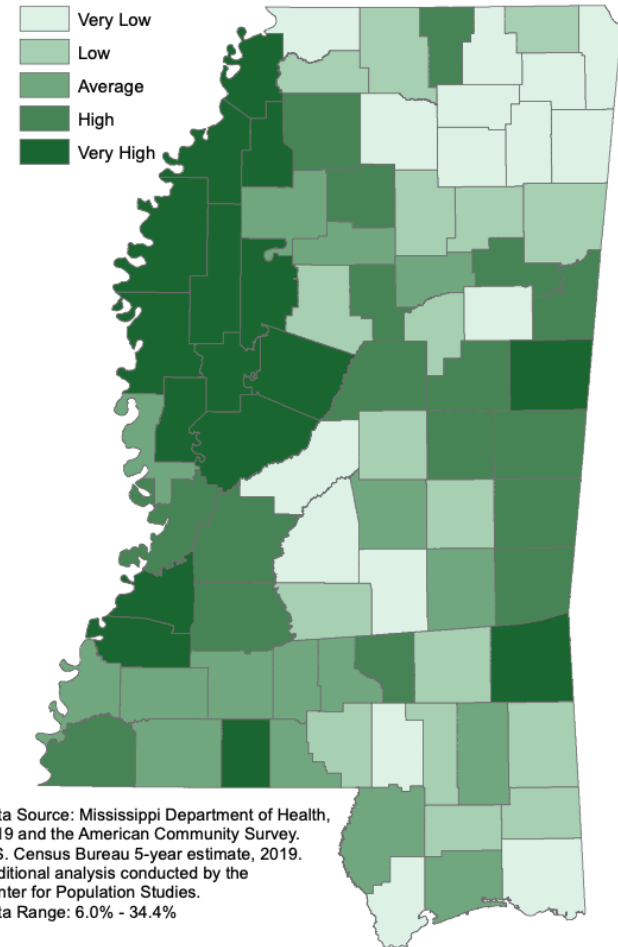
Source: Mississippi Department of Health, 2020 and the American Community Survey, U.S. Census Bureau 5-year estimates, 2019. Additional analysis conducted by the Center for Population Studies.

SNAP Enrollment: Children (% Eligible)

The estimated percent of county residents less than 18 years of age who are eligible for the Supplemental Nutrition Assistance Program and who participated in the program for FY2018.

Source: Mississippi Department of Health, 2020 and the American Community Survey, U.S. Census Bureau 5-year estimates, 2019. Additional analysis conducted by the Center for Population Studies.

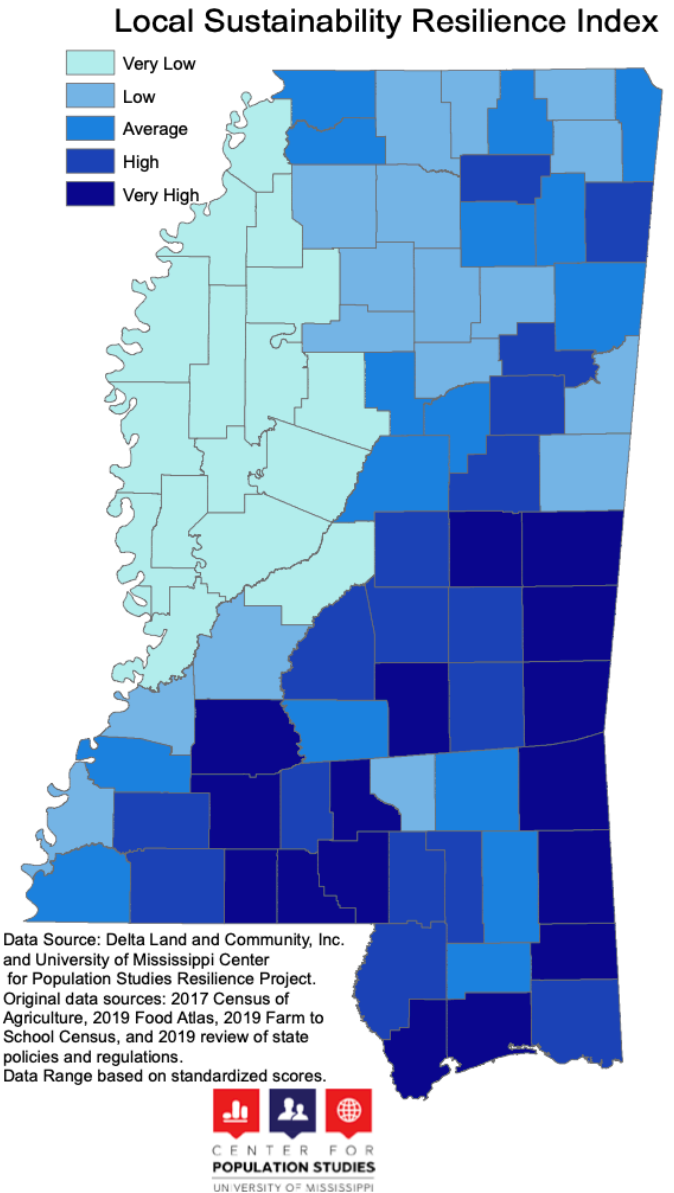
SNAP Enrollment (% Eligible)



Local Sustainability Resilience Index (MAP)

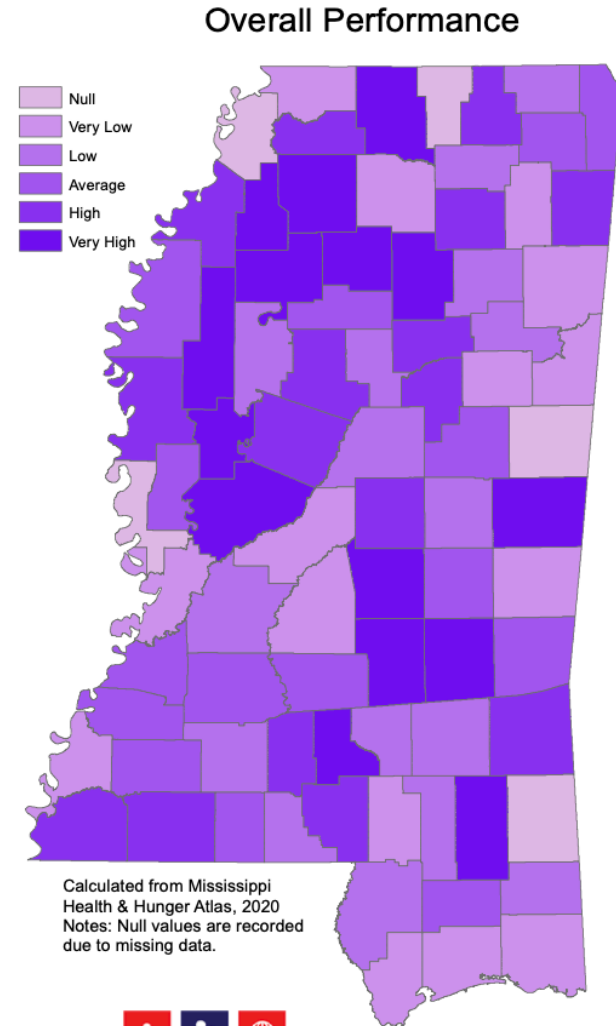
Based on summated and standardized scores across 10 indicators. A higher score indicates a higher level of resilience on this measure.

Source: Delta Land and Community, Inc. and University of Mississippi Center for Population Studies (CPS) Resilience Project. Original data sources: U.S. Department of Agriculture (USDA) 2017 Census of Agriculture, USDA 2019 Local Food Directories: National Farmers Market Directory; USDA 2015 Farm to School Census. Additional calculations provided by the CPS based on an updated and modified version of the index described in Green, Worstell, and Canarios (2017).



Overall Performance Rank (MAP)

The Overall Performance Rank is a single composite measure of all nine health and hunger performance indicators for each county presented in this atlas. We weighted seven of the nine indicators by dividing 100 by all seven indicators. In the overall performance, we included: Primary Care Physicians per 100,000, Other Primary Care Physicians per 100,000, Medicaid Enrollees per Primary Care Provider, SNAP Enrollment (% Total Population), SNAP Enrollment (% Eligible), SNAP Enrollment: Children (% Eligible), and the Local Sustainability Resilience Index. This means each of the seven performance indicators is weighted 14.29 percent. We then ranked each county 1-82 for all seven indicators. A lower rank signifies that a county has a higher level of performance and a higher rank has a lower level of performance. So, a rank of one indicates the highest performance and a rank of 82 indicates the lowest performance. Then we multiplied each county ranking by 14.29 percent. To get the composite overall performance, we summed all seven indicators. To map the overall performance rank, we took the sum for each county and divided it into quintiles.



Comparing Need and Performance

Having compiled county-level composite ranks in the areas of hunger and health need and performance indicators, a final and useful step is to compare how each county ranks in terms of the combination of their ranks on need *and* performance. In essence, we can ask whether counties that have high need are doing comparatively well or comparatively poorly in addressing those needs. Counties with high needs that have high performance rankings, for example, are likely more successful in serving the hunger and health needs of their populations, while counties with high needs but low performance, are potential target locations for increased public and private sector attention.

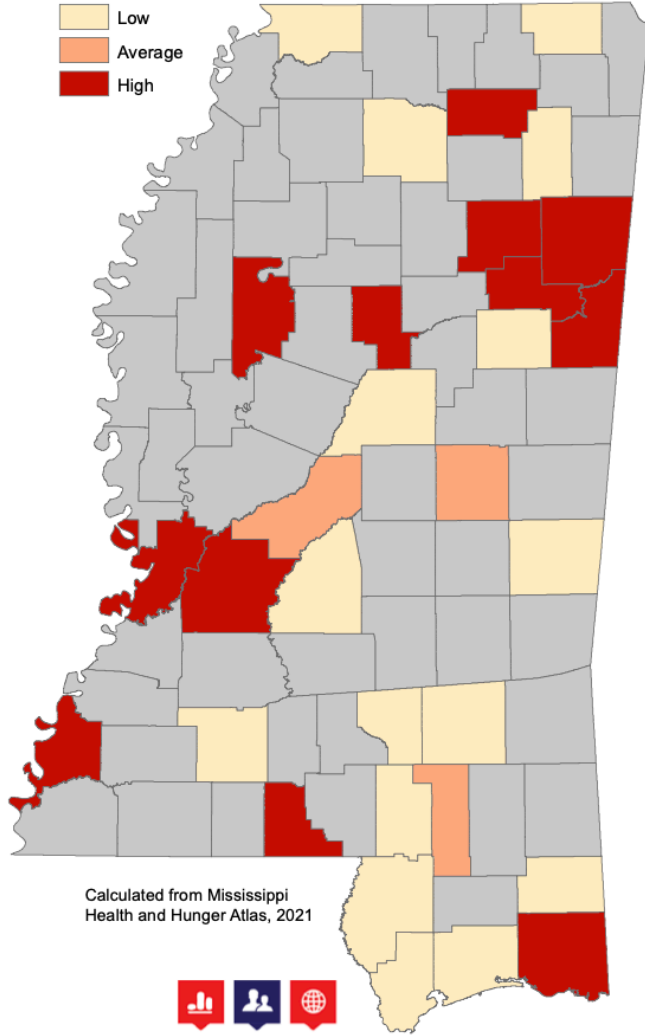
We used several steps to perform this analysis. First, we labeled counties as high need if their composite “overall need” ranking fell in the upper two quintiles (very high or high). Second, we designated counties as low need if their composite “overall need” ranking scored in the bottom two quintiles, (low or very low). Third, we designated counties as high performance if their composite “overall performance” ranking was in the upper two quintiles, (high or very high). Lastly, we labeled counties as low performance if their composite “overall performance” ranking was in the bottom two quintiles (low or very low). We did not include counties that scored in the average, or middle quintile, in either of these composite ranks in this analysis, but they appear in the map as the gray counties.

The designation of counties as either high need or low need, and as either high performance or low performance, offers the possibility of counties falling into one of four categories:

1. High need/high performance
2. High need/low performance
3. Low need/high performance
4. Low need/low performance

High Need/High Performance		High Need/Low Performance	
Coahoma	Tate	Adams	Monroe
Holmes	Washington	Chickasaw	Montgomery
Humphreys	Wayne	Clay	Union
Marshall	Webster	Hinds	Walthall
Panola	Wilkinson	Jackson	Warren
Quitman	Yazoo	Leflore	
Sunflower		Lowndes	
Tallahatchie			
Low Need/High Performance		Low Need/Low Performance	
Amite		Alcorn	Lamar
Choctaw		Attala	Lauderdale
Itawamba		Covington	Lee
Jefferson Davis		DeSoto	Lincoln
Lawrence		George	Oktibbeha
Pontotoc		Hancock	Pearl River
Smith		Harrison	Rankin
Tippah		Lafayette	

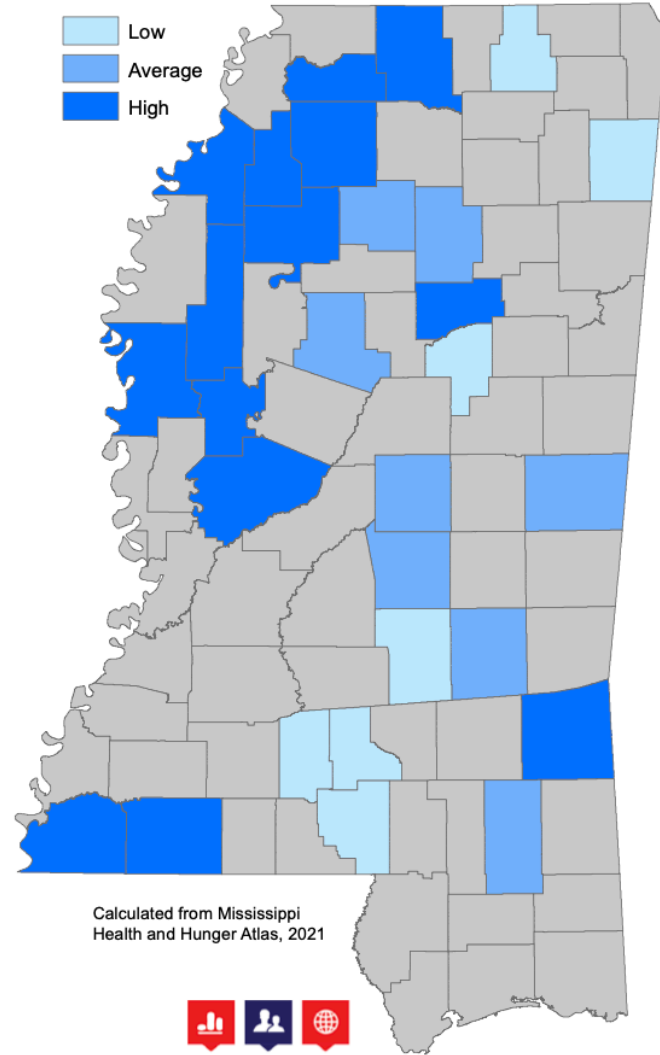
Low Performance Level of Need



Calculated from Mississippi Health and Hunger Atlas, 2021



High Performance Level of Need



Calculated from Mississippi Health and Hunger Atlas, 2021

