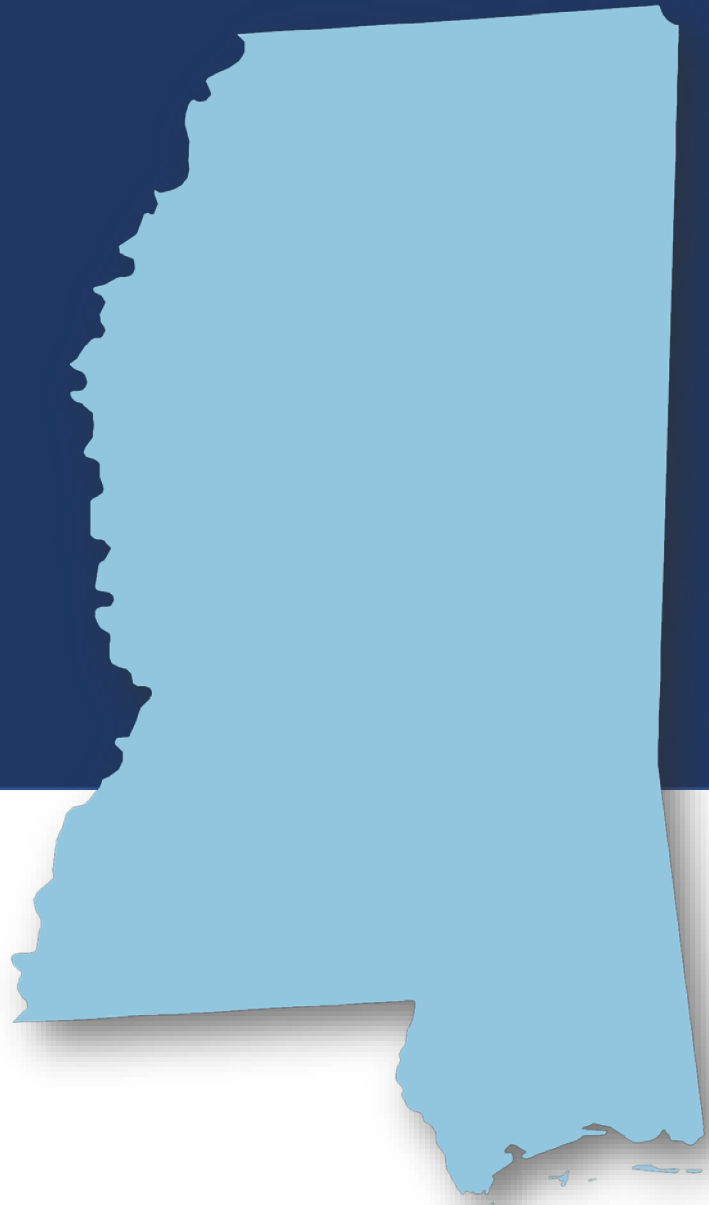




# Healthy Aging Data Report

Highlights from  
Mississippi, 2023



Research and Analysis by



## Why a Healthy Aging Data Report?

People in the United States today are living longer, and many of us can expect to live to an advanced age. Yet, in many communities, age-friendly systems and policies have not been fully implemented, making it difficult for people to experience optimal health, dignity, and social connections as they grow older. A Healthy Aging Data Report is an effective tool for improving the communities in which we age.

The older population is growing and will continue to grow. Projections suggest this will be a permanent demographic change. In the U.S., one out of five Americans will be age 65+ by 2030, and by 2034, the 65+ population will outnumber the under 18 population (U.S. Census Bureau, 2018). High levels of inequality are embedded within the older population of the U.S. patterned by race, ethnicity, language, socioeconomic status, and other attributes (Ferraro et al., 2017). However, the movement to promote age-friendly programs is leading the way to make all communities great places to grow up and grow older. Having data at the local county level provides insights into the causes and consequences of unhealthy aging and may help you find innovative solutions.



## What is the Mississippi Healthy Aging Data Report?

The 2023 Mississippi Healthy Aging Data Report is an easy-to-use resource created by researchers at the Gerontology Institute of the University of Massachusetts Boston in partnership with the Mississippi State Department of Health. The data report includes 82 county profiles, each with 125 healthy aging indicators and 125 maps with alphabetical and ranked lists of indicators by county.

The 125 indicators provide a comprehensive picture of the health of older adults in Mississippi and the factors that may influence health. The full list of indicators and data sources appears in the appendix to this report. The data reveal important patterns of disease, health behaviors, resource distribution, and disparities in healthy aging. The extent to which health variations differ by location are mapped to support intervention and policy efforts addressing the unique issues facing Mississippi counties. The research team has spent years acquiring and analyzing data, talking to community members and leaders, and developing resources to inform communities about ways to make it easier for everyone to achieve their own, unique optimal health. The tools in this report can be used to inform policy, improve programs and services, and spur collective action to make Mississippi a truly age-friendly and healthier state.

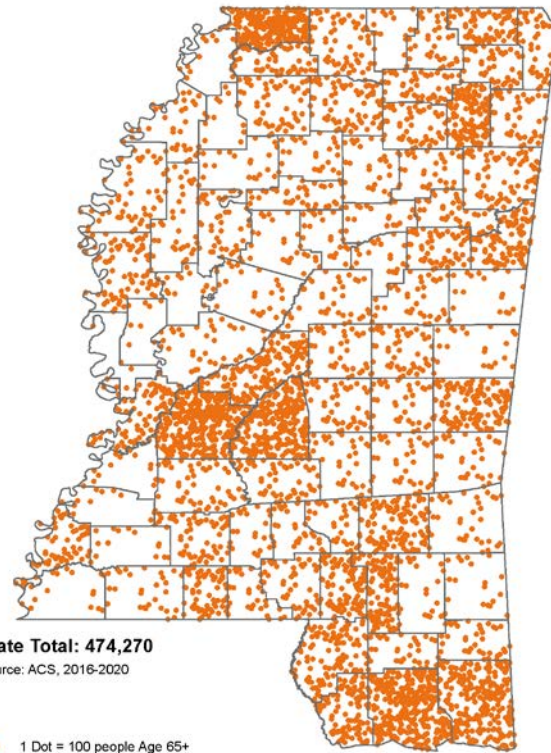
For the past decade similar reports have been prepared in other states to provide data to inform efforts to create healthy, age-friendly communities (see [healthyagingdatareports.org](https://healthyagingdatareports.org)). When communities work better for older people, they work better for everyone. We welcome your input! If you have questions or ideas, please email them to [beth.dugan@umb.edu](mailto:beth.dugan@umb.edu). Your feedback may help make our next Healthy Aging Data Report even better.

Suggested citation: Dugan E, Silverstein N, Lee CM, Jansen T, Xu S, & Su YJ. (2023). *The 2023 Mississippi Healthy Aging Data Report*. Report prepared by the Healthy Aging Data Report Lab in the Gerontology Institute of the University of Massachusetts Boston. Boston, MA.

## Understanding the Mississippi Context

Map 1

Density of Population Age 65+ Years



August 2022

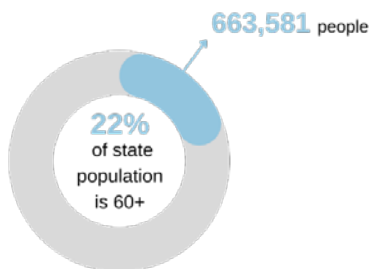
### A Declining State Population

According to a [report](#) by [USA Facts](#) (2022) investigating how state populations have changed from 2010-2021, the state of Mississippi's population shrank 0.7% from the 3 million people who lived there in 2010. For comparison, the population in the U.S. grew 7.3% during that period. In Mississippi, DeSoto County had the largest growth with 26,836 more residents, while Hinds County had the largest decline with 23,038 fewer people. The state grew more diverse from 2010-2021 in terms of race and ethnicity, with the addition of 20,932 Hispanic/Latino new residents (USA Facts, 2022).

The USA Facts (2022) [report](#) also examined how the COVID-19 pandemic has impacted state populations. The Mississippi population declined by 6,900 people from 2020-2021. While more than 35,000 births occurred and 441 people moved into the state, those gains were offset by 38,200 deaths and more than four thousand people moving out of the state (USA Facts, 2022).

### An Aging State Population

Mississippi is home to 663,581 people age 60 or older – 22% of the state's total population. Map 1 illustrates the density of the older population in Mississippi. Each orange dot on the map represents 100 people age 65 and older, and there are orange dots all across the state. The aging population is increasingly diverse. Among the population 65 and older, 71% are White, 27% Black, 1%



Hispanic/Latino, and 2% other race(s). More than half of the older population (53%) are married. Approximately 16% of the older population in Mississippi are veterans of military service. The group aged 65+ was the fastest growing segment of the population between 2010-2021, with its population increasing 29.3% (USA Facts, 2022).

Given this situation, it is especially urgent to invest in efforts to improve the health and healthy longevity of all residents. Keeping the population as healthy as possible has critical economic and social implications for families, communities, and the state. Thus, the time to raise awareness about healthy aging in Mississippi is now.

## Social Determinants of Healthy Aging

Healthy aging is influenced by more than our genetics or access to health care. The [CDC \(2022\)](#) describes the social determinants of health (SDOH) as the *nonmedical* factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and structures, development agendas, social norms, social policies, racism, climate change, and political systems (CDC, 2022). Simply put, our health is influenced as much by our zipcode as by our genes.



Source: CDC, 2022

Our research shows that the experience of healthy aging varies widely across the state of Mississippi. Tables 1 and 2 provide a snapshot of our results showing the counties that had rates that were better than the state averages, worse than the state averages, and the best and worst rates on select indicators.

Information like this helps to identify disparities in healthy aging and to inform the strategic allocation of resources for programs and services. (Note that some rural counties are grouped together because the number of observations per indicator was too few to report separately.)

Tables 1 and 2 illustrate the overall count of indicators where counties fare better or worse than the state average. The adjacent counties of Madison and Rankin fare better on nine indicators: their residents are less likely to be current smokers; less likely to self-report fair/poor health status or being obese; more likely to have had their flu shot and pneumonia vaccine; more likely to have annual dental exams and less likely to have loss of 6 or more teeth; and more likely to always wear a seat belt while driving (Table 1).

**Table 1.** Counts of Health Indicators with Rates Better than State Average for Counties in MS

County	# of Health Indicators Better than State Average
Madison, Rankin	9
Jackson	6
Lamar	4
Lauderdale	3
Oktibbeha	3
Clarke	2
Lowndes	2
Sunflower	2

The adjacent counties of Coahoma, Quitman, and Tunica fare worse than the average state rates on six healthy aging indicators: failure to meet CDC preventive health screening goals and guidelines for aerobic physical activity; not having the pneumonia vaccine or colorectal cancer screening; not having an annual dental exam; and failure to always wear a seat belt while driving. (Table 2).

**Table 2.** Counts of Health Indicators with Rates Worse than State Average for Counties in MS

County	# of Health Indicators Worse than State Average
Coahoma, Quitman, Tunica	6
Calhoun, Webster	3
Benton, Tippah, Union	3
Bolivar	3
Greene, Jones, Wayne	3
Grenada, Yalobusha	3
Holmes, Humphreys	3
Kemper, Leake, Neshoba	3

### Mississippi by the Numbers

**474,270**  
People age 65+

**15.9%**  
Of population

**56.5%**  
Of 65+ population are female

**67.4%**  
Of 85+ population are female

**15.8%**  
Of 65+ population are veterans

**29%**  
Of 65+ are people of color

### IN THE 60+ POPULATION...

**61%** Got any physical activity in the past month  
Met CDC guidelines for muscle-strengthening activity

**19%** Met CDC guidelines for aerobic-strengthening activity

**40%** Met CDC guidelines for aerobic-strengthening activity



Interested in how Mississippi compares to other states? Check out other Healthy Aging Data Reports at [healthyagingdatareports.org](https://healthyagingdatareports.org)

Map 2 below provides a map representing which counties are doing quite well compared to the state average rates (Jackson, Madison, and Rankin) and which counties have rates worse than the state rate (Coahoma, Quitman, and Tunica). The counties shaded orange may be areas to prioritize when directing services and resources for improving community health.

Map 2

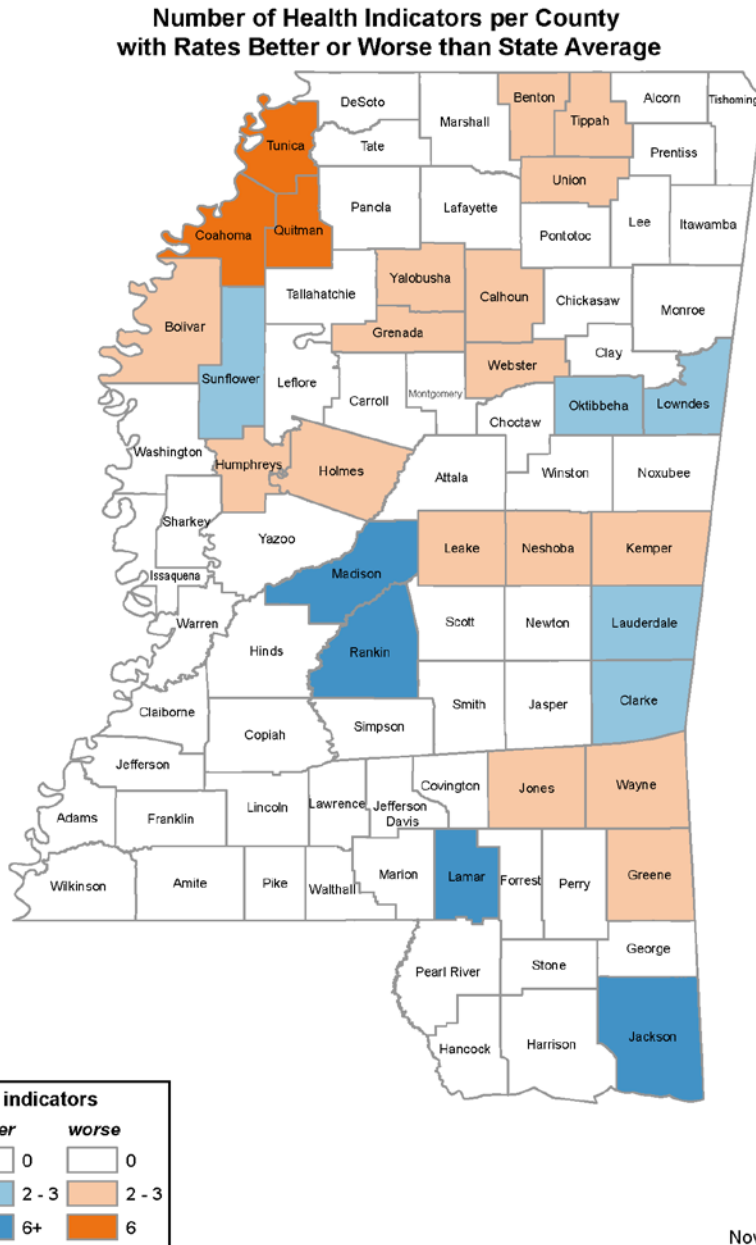


Table 3 provides an overview of chronic conditions and indicates which counties have populations with prevalence rates lower (Best) or higher (Worse) than the state rates. For example, Wilkinson, Sunflower, and Sharkey report the highest rates of diabetes; while Covington, DeSoto, and Prentiss counties have higher than state rates for high cholesterol. Self-management of chronic disease is key

to healthy aging. The National Council on Aging (NCOA) is a clearinghouse of programs that can address self-management issues (NCOA, 2021a). See this [link](#) for more information from the NCOA.

**Table 3.** Best and Worst Rates on Chronic Disease

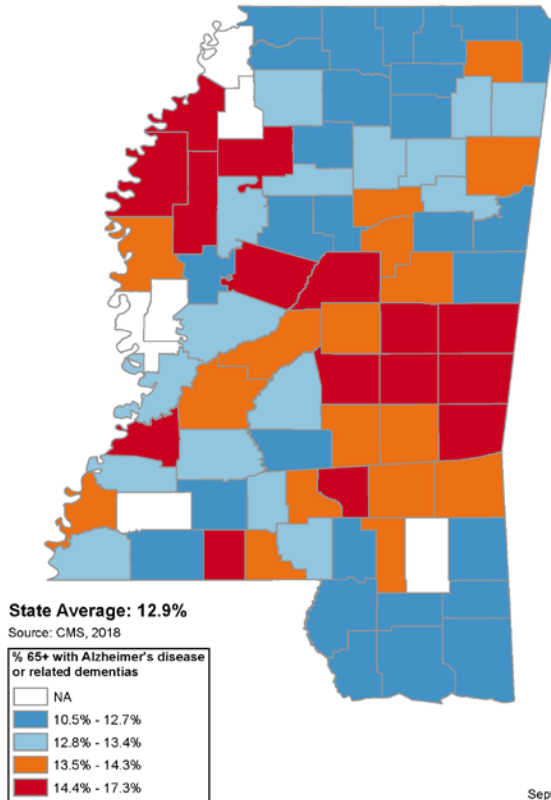
Indicator	Best Rates	Worst Rates
Alzheimer's disease or related dementias	DeSoto Tate Jackson	Kemper Neshoba Lauderdale
Arthritis	Washington Tunica Coahoma	Marion Noxubee Alcorn
Asthma	Tunica Calhoun Yalobusha	Walthall Claiborne Prentiss
Atrial Fibrillation	Holmes Bolivar Montgomery	Tate Marion Pearl River
Cancer (Breast, Colorectal, Lung, Prostate)	Choctaw Simpson Scott	Jefferson Davis Forrest Wilkinson
Chronic Kidney Disease	Warren Madison Rankin	Attala Prentiss Tate
COPD	Madison Lafayette Sharkey	Alcorn Prentiss Claiborne
Diabetes	Madison Rankin Lafayette	Wilkinson Sunflower Sharkey
Heart Failure	Lee Rankin Madison	Lawrence Claiborne Quitman
High Cholesterol	Yazoo Montgomery Webster	Covington DeSoto Prentiss
Hypertension	Copiah Madison Lafayette	Leflore Prentiss Quitman
Ischemic Heart Disease	Hinds Kemper Oktibbeha	Tishomingo Alcorn Greene
Osteoporosis	Washington Leflore Bolivar	Covington Attala Harrison
Stroke	Coahoma Lafayette Stone	Adams Jefferson Leflore

In this next section, we first show the distribution of rates of a chronic condition for the entire state, then we show a map depicting the correlation between that chronic condition and race. Comparing how the statewide and bivariate maps differ can help to detect if there are racial disparities in the condition. Understanding these disparities, where they exist, is an important first step toward promoting equitable healthy aging.

## Alzheimer’s Disease or Related Dementias in Mississippi

Map 3

Percentage of Medicare Beneficiaries Age 65+ Years with Alzheimer’s disease or Related Dementias



Map 3 shows that the statewide rate of Alzheimer’s disease and related dementias is 12.9% among Medicare beneficiaries age 65 and older. The counties shaded red have the highest rates and counties in dark blue have the lowest rates.

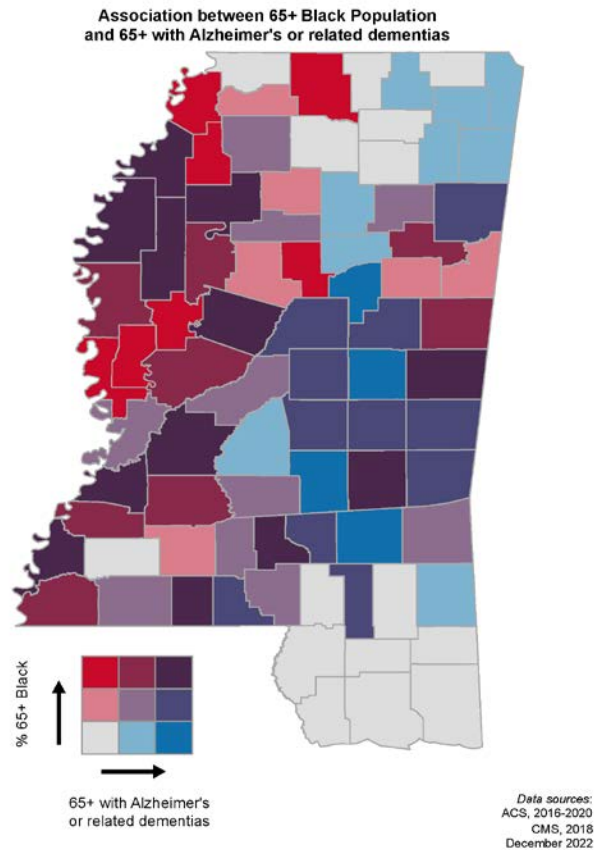
Most people with Alzheimer’s disease are cared for at home, so counties with the highest rates may need extra services (e.g., caregiver respite services, adult day care) to assist family members manage care for this progressive, fatal condition.



In Map 4, the counties with the highest rates of Alzheimer's disease are shaded dark purple (highest % of older Black adults 65+), purple (median % of older Black adults 65+), and blue (lowest % of older Black adults 65+).

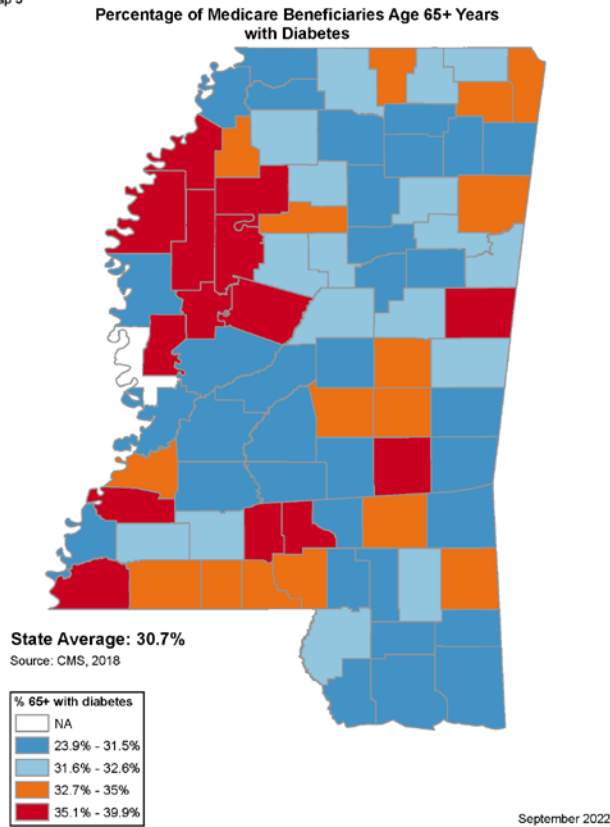
Many of the counties with the highest rates of Alzheimer's in the statewide map are counties with higher percentages of older residents who are Black. Factors known to reduce the risk of Alzheimer's disease include increased access to high quality education, physical activity, and smoking cessation. Prioritizing such interventions in these counties in particular could yield health benefits for generations of residents.

Map 4



## Diabetes in Mississippi

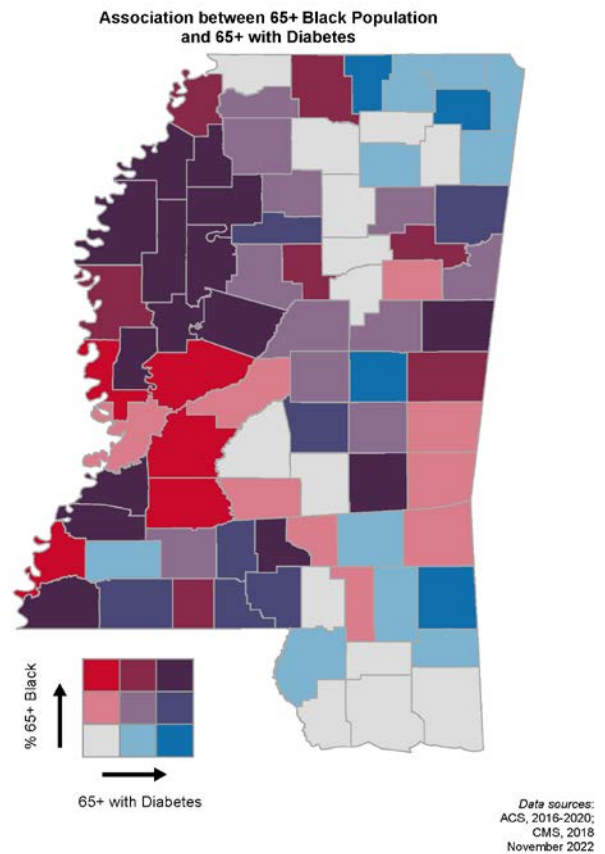
Map 5



Map 5 shows that the statewide rate of diabetes is 30.7%, and the counties shaded bright red have the highest rates (35.1%-39.9%). Nearly 4 in 10 older residents in some counties have diabetes. The communities in dark blue have the lowest rates (23.9%-31.5%). When it comes to managing diabetes, access to healthy foods, physical activity, weight monitoring, and medication management all play a role.

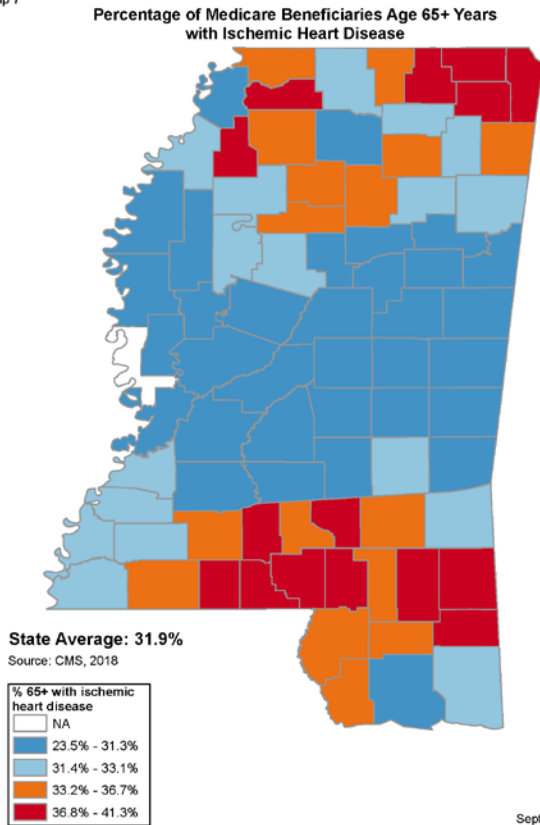
In Map 6, we see a map that combines the diabetes rates and the percentage of county residents age 65 and older who are Black. The 15 Counties in the darkest purple (highest rates of 65+ diabetes and older Black residents) are Bolivar, Coahoma, Holmes, Humphreys, Leflore, Quitman, Sharkey, Sunflower, Tallahatchie, Claiborne, Jasper, Jefferson, Jefferson Davis, Noxubee, and Wilkinson.

Map 6



## Ischemic Heart Disease in Mississippi

Map 7

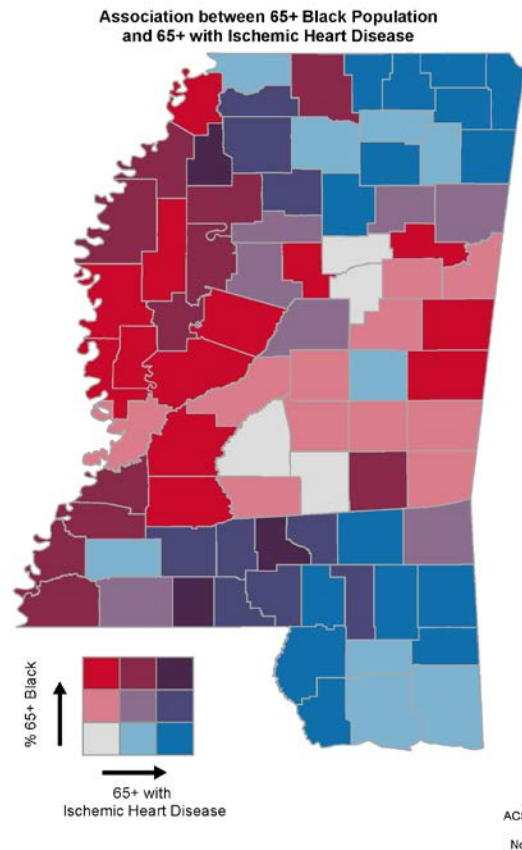


Map 7 shows that the statewide rate of ischemic heart disease is 31.9%, and the counties with the highest rates (36.8%-41.3%) are shaded in bright red. The counties shaded dark blue have the lowest rates (23.5%-31.3%), but still have a concerning level of heart disease that is much higher than the national average.

Heart disease is a leading cause of death in the older population. Smoking cessation, physical activity, and stress management are all important in managing heart disease.

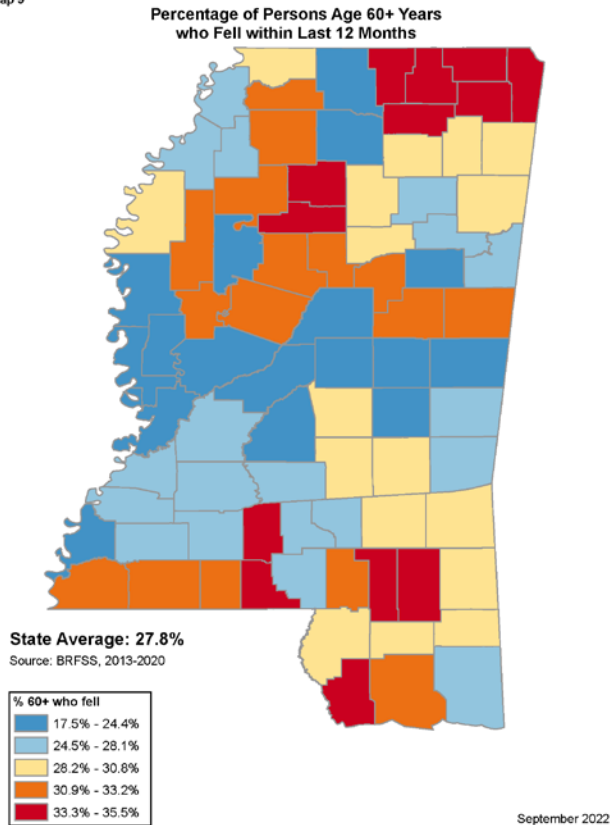
Map 8 reveals that in contrast to diabetes, ischemic heart disease mainly affects counties with a higher percentage of older White residents. The highest rates of ischemic heart disease are in the Northeast and Southern counties of Mississippi, counties which are home to predominately non-Hispanic older White residents.

Map 8



## Falls in Mississippi

Map 9



Map 9 shows the distribution of rates of people 60 and older who had a fall in the past year. Alcorn, Prentiss, and Tishomingo counties reported the highest rates of falls in the last 12 months (35.51%) and Issaquena, Sharkey, Warren, and Yazoo counties reported the lowest rate (17.45%). Falls are a major concern and frequent falling or being injured in a fall can limit the ability of someone to remain independent and at home. In Map 9 we find that the northeast corner of the state--including the counties of Benton, Tippah, Alcorn, Tishomingo, Union, and Prentiss--report the highest rates of falls within the past year.

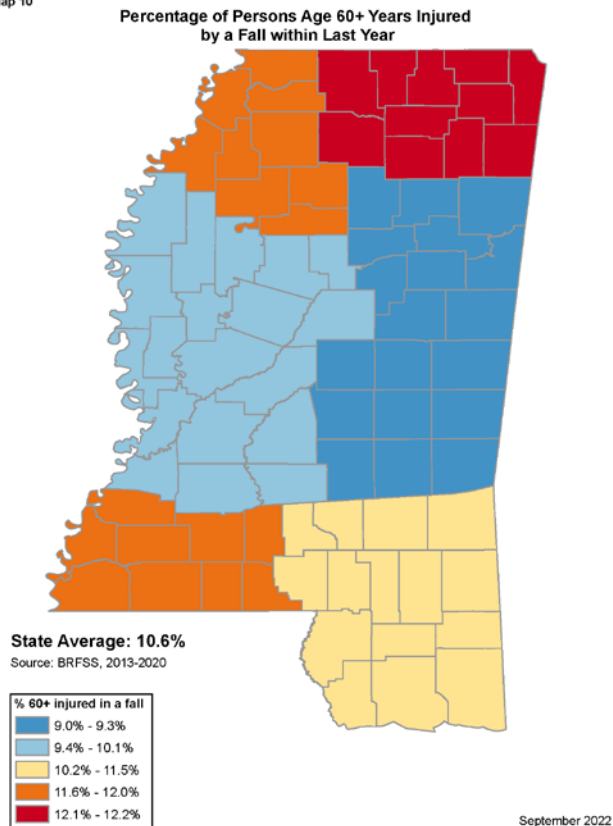
Interventions to address falls are available and include evidence-based programs such as a [Matter of Balance \(NCOA, 2021b\)](#), tai chi, and yoga. Such programs may be available at your local senior center or online at the National Council on Aging. In addition, paying attention to the built environment and supporting Age-Friendly Community efforts help minimize the threat of

injury from falls. Other efforts include home safety checks, such as those offered by the CDC, which recommend installing grab bars in bathrooms and removing throw rugs and clutter. Given the grave consequences of fall injuries, improving access to fall prevention programs is a key to extending independence and healthy aging.

Map 10 illustrates community rates for people age 60 and older who were injured in a fall in the past year. Since being injured in a fall happens less frequently than having a fall, some counties were grouped together so there would be enough cases to report. The state rate of 10.6% of the population age 60 and older means that 1 out of every 10 older persons reported being injured in fall in the past year.

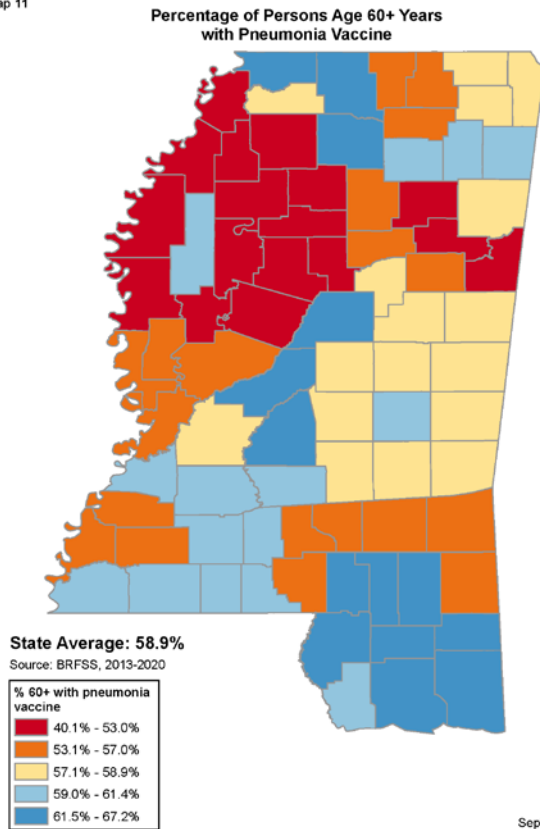
The counties in red (Alcorn, Benton, Itawamba, Lafayette, Lee, Marshall, Pontotoc, Prentiss, Tippah, Tishomingo, and Union) reported the highest rates of being injured in a fall in the past year.

Map 10



## Vaccinations in Mississippi

Map 11



September 2022

The Centers for Disease Control and Prevention (CDC) recommend that people take preventive health measures, such as getting the pneumonia vaccine and having regular flu shots, colorectal cancer screenings, and mammograms. Map 12 shows the rates of people 60 and older who have met the CDC recommended screening goals. The counties shaded in red have the lowest rates and have room to improve. The three counties with the highest rates of residents age 60 and older meeting the CDC Preventive Health Screening Guidelines were Clarke (41.23%), Lamar (39.21%), and Newton (38.22%). The counties with the lowest rates of residents age 60 and older obtaining preventive health screenings were Bolivar (15.98%), and Tunica/Quitman/Coahoma (16.06%). Only 26.2% of Mississippi residents age 60 and older are reaching the optimal screening levels, and the 73.8% who aren't achieving those levels are putting their healthy aging at risk.

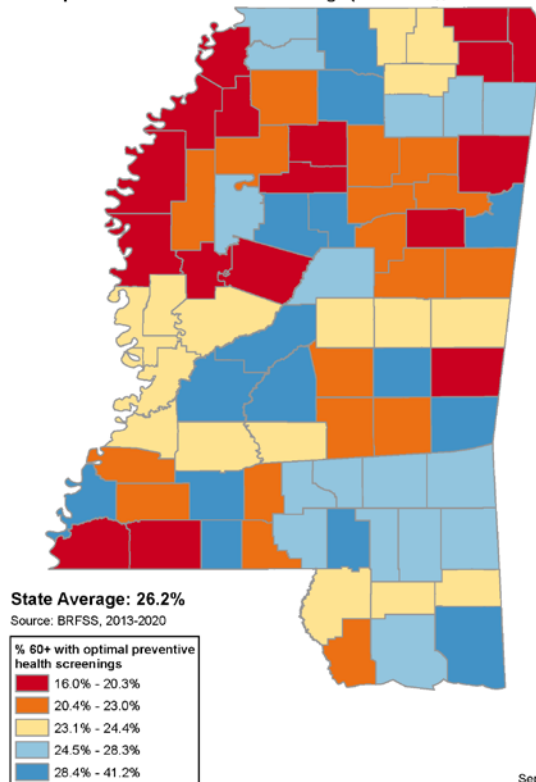
Pneumonia was once a leading cause of death of older people. Today, with vaccines and effective treatments, it is a diminished threat to population health. However, the benefits of vaccines are unrealized if people do not take advantage of them.

In Map 11 shows the community rates of people age 60 and older who reported receiving a pneumonia vaccine. The counties in red report the lowest rates of vaccination (40.1%-53.0%), while the dark blue counties have rates of 61.5%-67.2%. Holmes and Humphreys counties, both counties in the Delta region, reported the lowest rates of pneumonia vaccination with only 40% of the counties 60 plus population receiving the vaccine.

Raising awareness and access to such important vaccines could enhance healthy aging in Mississippi and improve the statewide rate of 58.9%.

Map 12

**Percentage of Persons Age 60+ Years with Optimal Preventive Health Screenings (Meets 100% CDC Guidelines)**



September 2022

## Race Matters

Systemic racism has a long history and contributes to negative health outcomes. Promising efforts toward realizing racial justice are occurring around the country, the state, and in communities -- but there is still work to do. Differences in education, economic opportunities, and access to healthcare persist and are key factors in health. These next two maps illustrate the association between race and income and the association of race with education in older adults.

More than half (56%) of the Black population of all ages in the U.S. lives in the South (Tamir et al., 2021). As Table 4 indicates, the percentage of the population of Black people 65 and older in Mississippi is 27%, which is 3 times higher than the national average.

In the box along the margin, you can see some of the racial differences in counties. For example, the percentage of residents aged 65 and older who are White ranges from a high of 95.77% in Tishomingo County to a low of 16.38% in Jefferson County. Similarly, Tishomingo has the lowest rate of Black older residents (3.2%) while Jefferson has the highest at 83.62%. The state rate of Hispanic older adults is 1%, but there is variation by county. Scott County has the highest rate of older Hispanic adults (7.04%) and 16 counties (Amite, Calhoun, Choctaw, Copiah, Greene, Grenada, Issaquena, Jefferson, Kemper, Leake, Lincoln, Quitman, Smith, Tallahatchie, Tippah, and Wayne) had 0%.

### Mississippi 65+ race/ethnicity by county breakdown:



(Range low to high)

#### WHITE

**70.9%**

(Jefferson **16.38%** - Tishomingo **95.77%**)

#### BLACK

**26.9%**

(Tishomingo **3.20%** - Jefferson **83.62%**)

#### OTHER RACE

**2.2%**

(Carroll, Clarke, Covington, Grenada, Issaquena, Jefferson, Kemper & Quitman **0%** - Scott **7.70%**)

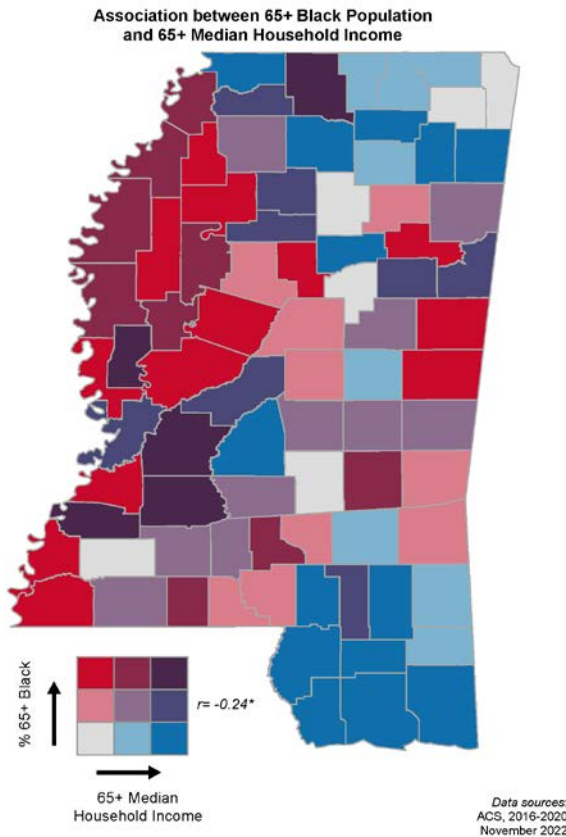
#### HISPANIC

**1.0%**

(Amite, Calhoun, Choctaw, Copiah, Greene, Grenada, Issaquena, Jefferson, Kemper, Leake, Lincoln, Quitman, Smith, Tallahatchie, Tippah, & Wayne **0%** - Scott **7.04%**)

## Race Matters: Socioeconomic Disparities

Map 13

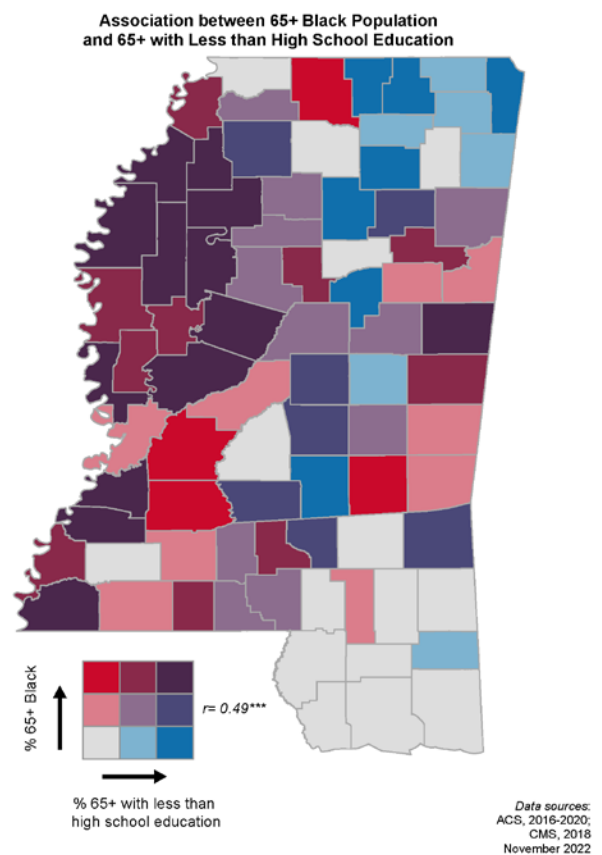


Map 13 shows the significant association between the percentage of Black people age 65+ in a county, shaded from low (gray) to high (red), and the median household income of all people 65+, shaded from low (gray) to high (dark blue). Counties that have a higher percentage of older Black residents and lower income are bright red, while communities with a high percentage of older Black populations and higher income are shaded in purple. The counties with a higher percentage of older White adults and lower income are shaded gray. The communities shaded bright blue have the highest income levels and the lowest percentages of older Black residents. A negative, but significant, association was found between the 65+ Black population and median household income, demonstrating that in Mississippi the 65+ Black population reports lower median household income than 65+ White residents. Thus, many of the racial disparities in healthy aging are also

related to income.

In Map 14, we found a significant and positive association of county rates of Black people 65+ and those 65+ with less than a high school education ( $r=0.49$ ;  $p < .001$ ), which is shown in the darkest purple. This association is most pronounced in the Delta region, but also in many other areas of the state. Education is a key social determinant of healthy aging. Thus, improving access to high quality education when people are young may improve outcomes when they are older. Providing lifelong educational opportunities and fostering a culture of growth and learning is good for our health and economy.

Map 14



## Place Matters

Across the U.S., rural communities tend to be older, poorer, and in worse health (CDC, 2017) than urban areas, and Mississippi is no exception. Rural residents are at greater risk for death due to common chronic conditions like heart disease, cancer, respiratory disease, and stroke than urban residents. Unintentional injuries due

Map 15



to car crashes or drug overdoses are 50% higher in rural areas. Many factors contribute to this increased risk including access, infrastructure, health behaviors, and value systems. For example, rural residents are more likely than urban residents to smoke cigarettes, report less physical activity, be obese, and have high blood pressure. All of these increase the risk of negative consequences associated with chronic diseases. In addition,

the remoteness of rural areas means that residents have reduced access to services and their roadway safety is at greater risk. Many rural residents report driving long distances to see doctors, especially specialists. In Mississippi, rural residents have access to 20 primary care physicians (PCPs) per county on average, compared to urban residents who have 130 PCPs on average. Rural residents' access to quality health care is further reduced by the fact that they generally have little to no public transportation available. Finally, the terrain and infrastructure of rural areas can not only increase the risk of driving accidents but can also result in long emergency ambulance rides, both of which are associated with an increased risk of death (CDC, 2017). In Mississippi, Calhoun, Carroll, Choctaw, Clarke, Franklin, Jasper, Kemper, Walthall, and Webster counties are the most remote and, thus, most at risk of poor outcomes due to lack of a nearby hospital or emergency medicine facility.

### Rural Mississippi counties by the numbers

65+ in rural counties...



**24.8%**  
or 1 in 4  
have less  
than a high school  
education

**15.4%**  
live below the poverty line

**20 vs. 130**  
have less access to  
primary care physicians  
(PCPs)  
compared to urban  
counties



Higher rates of:

**13.4%**  
Alzheimer's disease or  
related dementias



**32.7%**  
Diabetes

**70.2%**  
Hypertension



About 80% of Mississippi counties are rural or non-metropolitan (USDA ERS, 2020). Table 4 demonstrates the disparities by rural place of residence in Mississippi. Rural counties in Mississippi are representative of national trends, in that residents report being older, poorer, and more burdened by chronic conditions. The percentage of 65+ residents is greater in rural counties than urban ones, and approximately 32.5% of the 65+ Black population in Mississippi lives in rural counties. In addition, Mississippi rural counties report statistically significant differences between their 65+ populations and those of urban areas, as well as the state as a whole, on all of these measures: less than a high school education; having Alzheimer's or related dementias; diabetes; hypertension; the number of primary care providers per county; the number of senior centers per county; the percentage of households with broadband access; the percentage living below the poverty line; and the median household income. These measures are shown in bold in Table 4.

**Table 4.** Comparison of Indicators among Rural and Urban Counties in Mississippi

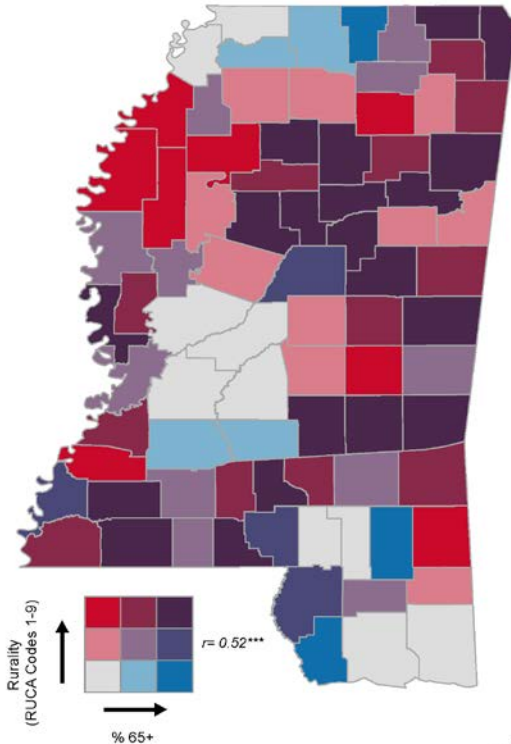
Indicator	MS (N=82)	Urban (n= 17)	Rural (n= 65)	<i>t</i>	<i>p</i>
<b>Population 65 years or older as % of total population</b>	<b>15.9%</b>	<b>15.5%</b>	<b>17.6%</b>	<b>-3.03</b>	<b>**</b>
% of 65+ Black	26.9%	26.2%	32.5%	-1.29	
<b>% of 65+ with less than high school education</b>	<b>20.1%</b>	<b>19.4%</b>	<b>24.8%</b>	<b>-3.24</b>	<b>**</b>
<b>% 65+ with Alzheimer's or related dementias</b>	<b>12.9%</b>	<b>12.3%</b>	<b>13.4%</b>	<b>-2.80</b>	<b>**</b>
% 65+ with COPD	12.6%	12.4%	12.9%	-0.81	
<b>% 65+ with diabetes</b>	<b>30.7%</b>	<b>29.5%</b>	<b>32.7%</b>	<b>-4.65</b>	<b>***</b>
<b>% 65+ with hypertension</b>	<b>67.9%</b>	<b>65.5%</b>	<b>70.2%</b>	<b>-4.63</b>	<b>***</b>
% 65+ with ischemic heart disease	31.9%	31.8%	32.8%	-0.84	
<b># of primary care providers in county</b>	<b>3,571</b>	<b>130.7</b>	<b>20.8</b>	<b>4.89</b>	<b>***</b>
<b># of senior centers in county</b>	<b>115</b>	<b>2.7</b>	<b>1.1</b>	<b>2.84</b>	<b>**</b>
<b>% households with access to Broadband (all ages)</b>	<b>75.8%</b>	<b>77.1%</b>	<b>66.9%</b>	<b>3.92</b>	<b>***</b>
% 65+ population who live alone	28.1%	26.9%	28.8%	-1.35	
<b>% 65+ with income below the poverty line in last year</b>	<b>12.8%</b>	<b>11.3%</b>	<b>15.4%</b>	<b>-3.28</b>	<b>**</b>
<b>65+ median household income</b>	<b>\$36,652</b>	<b>\$40,311</b>	<b>\$31,979</b>	<b>4.02</b>	<b>***</b>

Notes. Orange indicates rates higher than the state and urban county rates, and blue indicates rates lower. Data were derived from the U.S. Census Bureau Five-Year detailed tables of 2016-2020 *American Community Survey*, the Centers for Medicaid and Medicare (CMS) 2018 Specific Chronic Conditions dataset & National Provider File (2022), & the Mississippi Care Planning Council (2022).

## Rural Aging in Mississippi

Map 16

Association between Rurality and Percentage 65+



Date sources:  
ACS, 2016-2020;  
USDA ERS, 2022  
December 2022

percentages of 65+ residents.

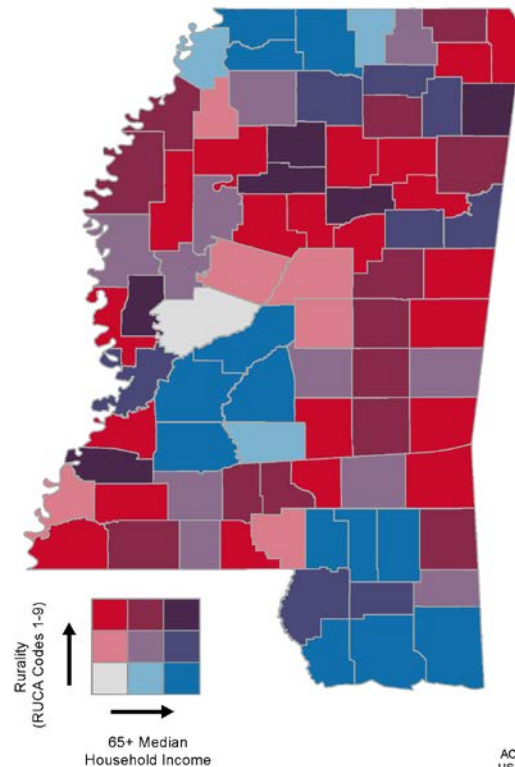
While rural counties in Mississippi are older, they are also home to poorer residents. Map 17 dramatically shows the significant difference in 65+ median household income in Mississippi by rurality ( $t = 4.02$ ;  $p < .001$ ). The average 65+ median household income in rural counties is just \$31,979 compared to urban counties at \$40,311. In the map, very few counties are shown in purple, demonstrating that the highest 65+ household incomes are found in urban counties ( $r = -.49$ ;  $p < .001$ ).

Map 16 illustrates the association of the percentage of a county’s residents who are 65+ and the range in rurality or remoteness, via the U.S. Department of Agriculture’s Economic Research Service Rural-Urban continuum codes (RUCA). The lowest quartile, shown in grey, represents urban counties. The pink color represents rural counties which are considered “micropolitan”, while the brightest red represents the most remote counties.

While the entire state of Mississippi is aging, the **rural counties in Mississippi are home to 17.6% of the 65+ population**. Map 16 shows the significant, positive correlation found between rurality and percentage of population age 65 and above ( $r = 0.52$ ;  $p < .001$ ). Counties in pink and bright red represent the most rural or remote counties, while purple demonstrates the overlap between the most rural counties and the highest

Map 17

Association between Rurality and 65+ Median Household Income



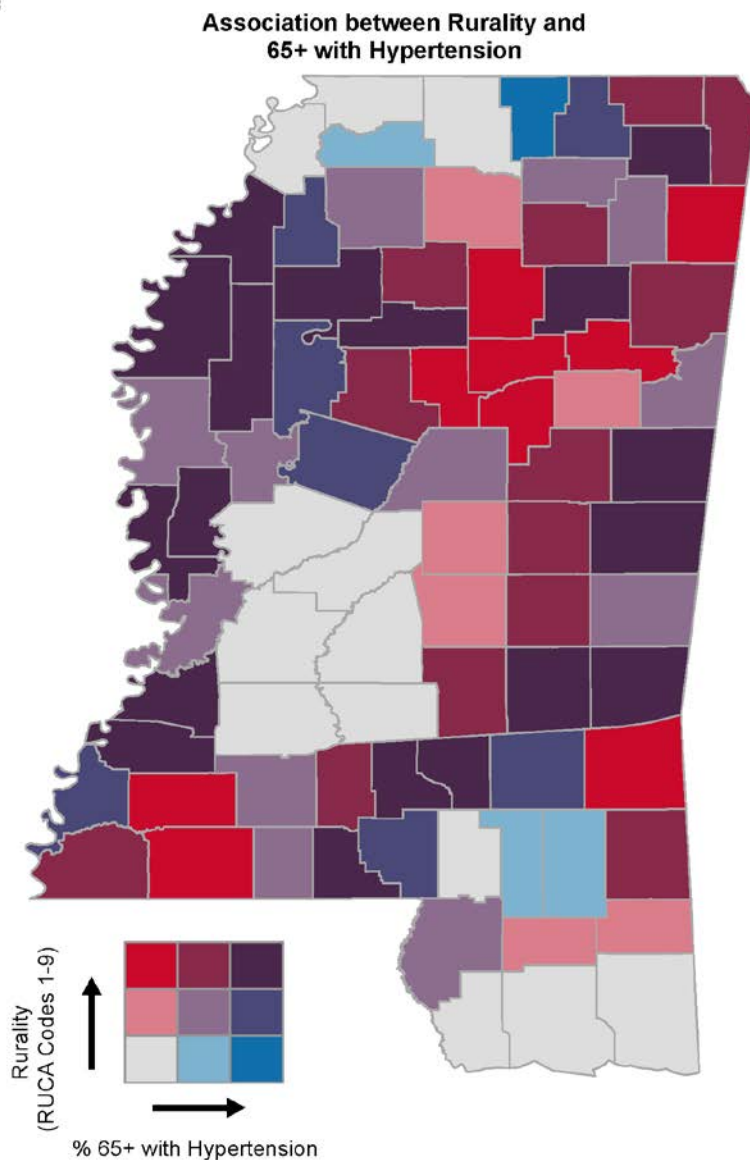
Date sources:  
ACS, 2016-2020;  
USDA ERS, 2022  
December 2022

Lastly, Map 18 illustrates the higher rates of 65+ hypertension in Mississippi by rurality. Across the state 67.9% of adults 65 and older have hypertension. But the rates vary depending on the rurality of the county.

The counties in the darkest purple identify the most remote and rural counties and the highest rates of high blood pressure, or hypertension. Leflore, Prentiss, Quitman, and Marion counties all reported 65+ hypertension rates at or above 76%. Counties in grey are representative of urban counties and have the lowest rates of 65+ hypertension ( $r = .40$ ;  $p < .001$ ).

Conversely, Madison and Copiah counties reported the lowest rates of 65+ hypertension in Mississippi with rates lower than 60%.

Map 18

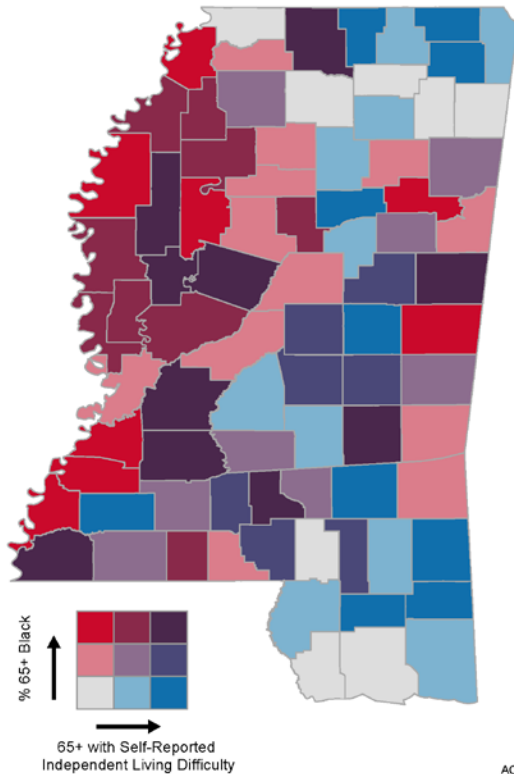


Data sources:  
 CMS, 2018;  
 USDA ERS, 2022  
 December 2022

## Aging with Disability

Map 19

Association between 65+ Black Population and 65+ with Self-Reported Independent Living Difficulty



Data sources:  
ACS, 2016-2020  
November 2022

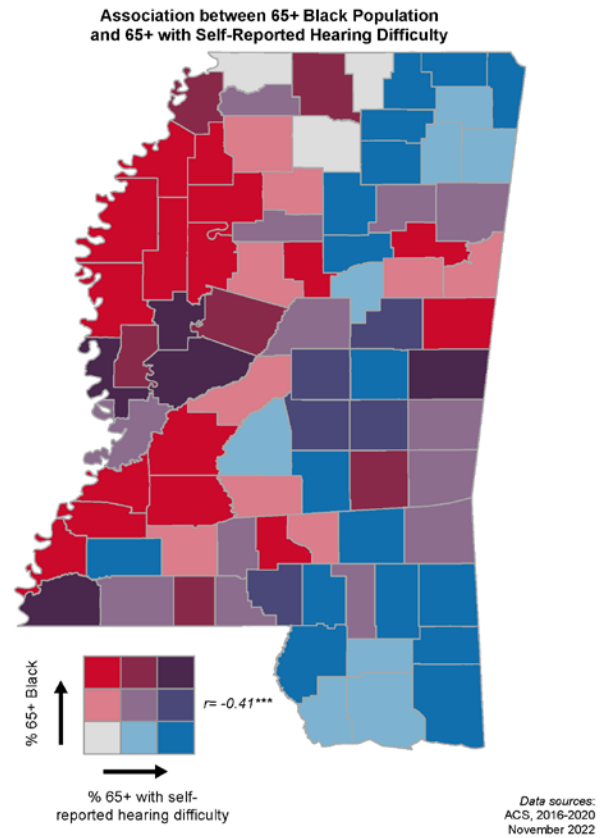
Some disabilities become more prominent with age, including difficulties with independent living and hearing difficulties. It's important to identify the communities where these disabilities are more prevalent, and where they are strongly correlated to race. The maps on this page can guide policy makers as they allocate services and resources to enhance healthy aging and prolong the independence of older people living with a disability.

Map 19 highlights ten counties with a higher rate of older Black residents with self-reported independent living difficulties.

*(Technical note: the American Community Survey defines independent living difficulty as the percentage of persons aged 65 or older reporting that they have a physical, mental, or emotional condition lasting six months or more that makes it difficult or impossible to perform basic activities outside the home alone.)*

Map 20

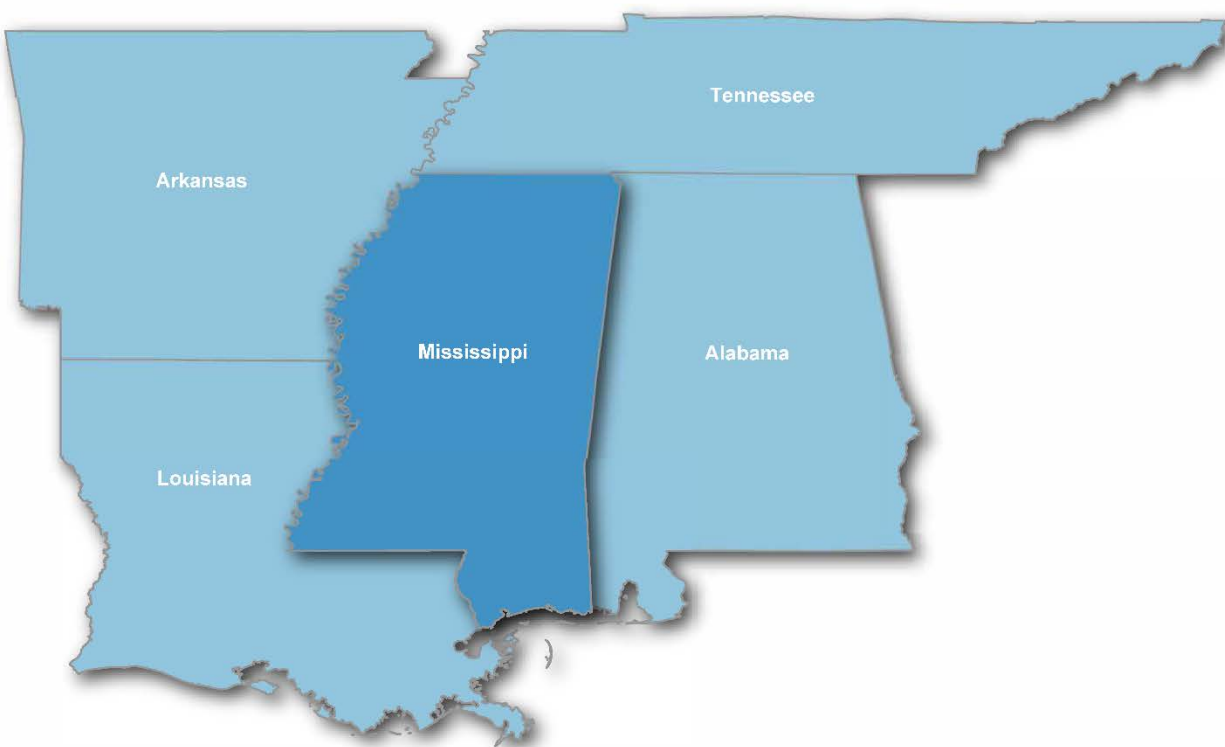
Map 20 reveals a negative, significant association between the 65+ Black population and self-reported hearing difficulty at the county level. It shows that predominately older White counties in Mississippi report the highest rates of self-reported hearing difficulties. This map is an ideal tool for demonstrating how additional hearing resources--such as audiologists, specialists, hearing aid retailers, and clinics--need to be brought to communities in blue.



## How Mississippi Compares

Map 21 shows Mississippi's neighboring states. Understanding the population characteristics of a region can identify cultural strengths that can be relied upon to improve the health and healthy aging of the people who live there. For example, other states have partnered with neighboring states on regional grant applications or public health efforts. Mississippi may find such an approach useful to improve healthy aging.

Map 21



**Table 5.** Race and Ethnicity of Older Residents in Surrounding States and the U.S.

Race and ethnicity of the 65+ population	U.S.	Mississippi	Alabama	Arkansas	Louisiana	Tennessee
% 65 White	81.3%	70.9%	77.8%	85.9%	71.9%	86.3%
% 65 Black	9.1%	26.9%	19.4%	10.1%	24.4%	10.9%
% 65 Other race(s)	9.6%	2.2%	2.7%	4.0%	3.7%	2.8%
% 65 Hispanic	8.4%	1.0%	1.1%	1.7%	2.6%	1.2%

*Notes.* Orange indicates rates higher than the national rate and blue indicates rates lower than the national rate. Data were derived from the U.S. Census Bureau Five-Year detailed tables of 2016-2020 *American Community Survey*.

Table 6 suggests that in addition to state strategies, a public health regional approach might be warranted to addressing challenges related to the management of diabetes, ischemic heart disease, and Alzheimer’s disease and related dementias. Mississippi has an impressive [history](#) of success in leading regional efforts in this area (MSDH, 2022).

**Table 6.** Comparing chronic disease prevalence with surrounding states

<b>Chronic Disease Indicator</b>	<b>U.S.</b>	<b>Mississippi</b>	<b>Louisiana</b>	<b>Arkansas</b>	<b>Tennessee</b>	<b>Alabama</b>
% 65+ with Alzheimer’s or related dementias	11.9%	12.9%	13.9%	13.3%	11.9%	13.6%
% 65+ with cancer (breast, colorectal, lung, prostate)	9.3%	8.8%	9.3%	8.9%	9.0%	9.4%
% 65+ with diabetes	27.1%	30.7%	30.7%	25.9%	28.2%	30.8%
% 65+ with ischemic heart disease	28.6%	31.9%	34.6%	33.6%	30.2%	32.9%

*Notes.* Orange indicates rates higher than the national rate and blue indicates rates lower than the national rate. Data were derived from the Centers for Medicare and Medicaid Services (CMS) *Specific Chronic Conditions dataset* in 2022 representing prevalence rates from 2018.

## Call to Action

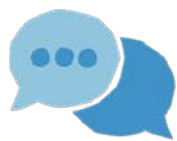
Mississippi's population is steadily growing older, presenting challenges and also opportunities to reap the benefits of the combined experience, wisdom, and expertise of older people. These demographic changes are prompting discussions about healthy aging and generating interest in what communities need to do to support it. This report is a powerful tool to inform those striving to make their communities better places to grow up and grow older together. The path to action is clear.



### UNDERSTAND.

*Before we can solve challenges, we must be aware of them and fully understand them.*

- Read your community profile to better understand your community's strengths and needs.
- Educate yourself and others about the indicators of your county, region, and state.
- Compare your county to the statewide trends.
- Learn what makes a community age-friendly



### ENGAGE.

*If you want to go fast, go alone. If you want to go far, go together.*

- Encourage people you know and community leaders to engage in the age-friendly movement.
- Bring people together to talk about what the data mean and what can be done to address local opportunities and challenges.
- Every sector of society has a vested interest in optimizing healthy aging. Engage the public sector, service organizations, faith communities, the private sector, first responders, older people, schools, and anyone else you can think of to help. A great idea can come from anywhere!



### ACT.

*We can make the world a better place if we act.*

- Get involved in local efforts to promote healthy aging.
- Use data to inform planning and to prioritize community needs.
- Create opportunities for civic engagement and social connection.
- Identify and build on what's working.

Opportunities to act can take many forms, building on existing work and engaging with groups that are already meeting. Below are examples of healthy aging in action from communities across the country. Get ideas on how to use the Mississippi Healthy Aging Data Report by learning how other states have used their reports.



Dancers celebrate Older Americans Month in Hillsborough County, MS. May 2018



## Healthy Aging Data Reports in Action

### Advocacy

- An alliance of older people focused on healthy aging leveraged the Healthy Aging Data Report to host a series of meetings with elected officials, including a state legislative breakfast.
- Advocates used the Healthy Aging Data Report to convince state leaders to establish a State Commission on Aging. The commission helped the executive branch of state government to develop ways to consider the impact of policies, programs, and services in light of healthy aging. This whole-of-government approach led to innovations like senior hours at the registry of motor vehicles and having a single point of contact for aging service-related questions.
- Funds were appropriated to expand transportation for older people after reviewing transportation gaps. Keeping older people engaged is good for the local economy and good for those getting rides.

### Spurring Collaboration

- A group of rural communities joined together to address healthy aging issues described in their community profiles.

### Economic Development

- Health insurers, developers of housing for older people, and private aging service providers used the Healthy Aging Data Reports to generate business development insights.
- A healthcare organization used one of the reports for market research on where to locate a memory assessment clinic.

### Education

- Students used the reports in research projects.
- Nonprofit organizations used the Healthy Aging Data Reports to write more competitive grant applications.
- Elected officials used the reports to better understand their communities and constituents.

### Service

- A municipal senior services department expanded a tai chi program in response to learning their community had high fall rates.
- A law enforcement official used information on falls and fractures to identify where to conduct a program on elder abuse.
- A department of public health prioritized communities with high rates of asthma for a public education campaign.
- A department of public health prioritized communities for grant funding to improve healthy aging based on factors reported in the Healthy Aging Data Reports.

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The researchers at the Gerontology Institute at the University of Massachusetts Boston on the 2023 Mississippi Healthy Aging Data Report team are: Elizabeth Dugan, PhD, Nina M. Silverstein, PhD, Chae Man “Jay” Lee, PhD, Taylor Jansen, PhD, Shu Xu, MS, YanJhu Su, MS & Jeannine Johnson, PhD. Have questions, ideas, or suggestions on how to make this report better? Please contact [beth.dugan@umb.edu](mailto:beth.dugan@umb.edu)



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## TECHNICAL DOCUMENTATION

### Overview

This report contains details about the development of the 2023 Mississippi Healthy Aging Data report. This includes technical definitions, data sources, years of data used, and definitions of the geographic units employed for indicators. Our general approach is hierarchical reporting. We report indicators at the county level when data allow, and report in larger geographic units (i.e., public health districts) when necessary.

### 1. Healthy Aging Indicator Definitions

Most indicators are derived from secondary data sources and limited to those indicators for which data are available at the county-level or larger geographic subareas within Mississippi. Table A-1 contains technical definitions for the indicators reported in this study.

### 2. Data Sources

Multiple data sources are used in this study. Table A-2 contains a summary of all data sources, and the specific years of data used for each reported indicator. Estimates of county-level indicators of population characteristics, living with disability, caregiving, transportation, housing, and economic indicators were mainly derived from the Five-Year American Community Survey (2016-2020) produced by the U.S. Census Bureau. Wellness, falls, preventive health practices, nutrition/diet, and oral health indicators were mainly derived from the State of Mississippi's Behavioral Risk Factor Surveillance System (BRFSS) (2013-2020). The chronic condition indicators and access to care indicators were derived from the Centers for Medicare and Medicaid Services (CMS).

#### U.S. Census Bureau

Data on population composition were downloaded from the U.S. Census Bureau (<https://data.census.gov/cedsci/>). All census population estimates reported in the community profiles were derived from the 5-year detailed tables from the *American Community Survey* (2016-2020). Each indicator was downloaded for all N=82 counties in Mississippi. Each downloaded data table from the ACS is described below in Table A1.

#### Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based system of annual health surveys established by the Centers for Disease Control and Prevention (CDC) that collects information on health risk behaviors, preventive health practices, and health care access, primarily related to chronic disease and injury. The BRFSS provides a rich source of information about individual health behaviors such as smoking, excessive drinking, obesity, preventive health service use, which are relevant for the development of healthy aging indicators. A core set of questions about such health behaviors are included every year. The Mississippi State Department of Health (MSDH) is responsible for collecting BRFSS data for Mississippi. The MSDH adds questions beyond the core CDC questions on relevant topics to

support health care policy planning, to guide preventive health interventions, and to assess health status and its change over time for Mississippi residents. Person-level BRFSS data were obtained from the Mississippi Department of Public Health for this project under a formal data use agreement required for individual privacy protection of health information.

The BRFSS survey is carried out under a complex survey design intended to enhance the efficiency of using limited population samples to produce reliable state-level estimates of health indicators. Interviews are administered in three alternative languages (English, Spanish, Portuguese) depending upon respondents' preferences. Respondents are oversampled in larger cities in the state under the BRFSS complex survey design to increase the representation of racial/ethnic minority respondents. Before 2008, BRFSS data were obtained entirely through land-line telephone surveys. Because of the rising prevalence of households with only cellphones, the BRFSS survey design was modified in 2011 to include both landline and cell phone samples. Furthermore, the method used to derive post-stratification factors was changed in 2011 to a raking procedure that permits finer adjustments to population weights based on multiple population attributes. These changes in the 2011 BRFSS survey design introduce some complexities when data from 2010 or earlier are pooled with more recent data. How these changes in survey design are addressed will be discussed later in the description of BRFSS estimation methods.

A major strength of the BRFSS data is its rich information on health behaviors. To our knowledge, no other secondary dataset has the range of variables on health behaviors of older Mississippi residents. However, the BRFSS has several limitations for small area analyses. The BRFSS survey design was developed for obtaining the state-level estimates. Accordingly, the respondent sample sizes for most individual counties in Mississippi in any year are far too small to produce reliable estimates for most counties. Even if appropriate adjustments are made because of unrepresentative samples for many small county populations, small area estimation will require that BRFSS survey data be pooled over multiple years. Because of the small sample size of annual BRFSS surveys, multiple years of survey data were pooled together, and multiple counties were aggregated together to create larger geographic areas containing multiple counties. While most estimates were derived from pooling the four most recent years of BRFSS survey data (2017-2020), some questions used for indicator estimates are not asked every year. For these indicators, the three most recent years of data with those survey questions (e.g., 2013, 2015, 2017, 2019, or 2014, 2016, 2018, 2020) were used. Table A-2 shows the specific years of data used to derive estimates for each BRFSS indicator. Details about estimation methods are provided in the section describing BRFSS estimation methods.

## Centers for Medicare and Medicaid Services (CMS) Data Sources

### CMS Chronic Conditions Data Warehouse

The Select Chronic Conditions dataset reports on the prevalence of 21 selected chronic conditions of Medicare fee-for-service beneficiaries. Chronic condition prevalence of each county is reported for the year 2018.

A major strength of the Chronic Conditions data is their coverage of 100% of Medicare beneficiaries living in Mississippi. This permits the estimation of health indicators for relatively small individual county populations. These rates potentially can be updated annually. Additionally, the major shortcoming of the data is that they are derived from claims data. Since chronic condition prevalence is identified from diagnoses on Medicare claims, rates of chronic disease prevalence and service use can only be measured for Medicare beneficiaries who receive their care from fee-for-service providers. Managed care providers such as Medicare Advantage plans do not submit claims data to Medicare for processing. In addition, beneficiaries whose chronic condition is undiagnosed because they do not have access to a physician will not be identified as having that chronic condition. Finally, the health indicators constructed from the chronic condition warehouse data are limited in scope since they are based on administrative data. Nevertheless, these data are rich with respect to geographic specificity compared to other common data sources for health indicators.

### Medicare Provider Data

Data on Medicare service providers were obtained from the data dashboard on the Medicare website (<http://www.medicare.gov/>). The geographic location of each provider was obtained from the data sources listed below. The addresses of the providers were then geocoded into latitude and longitudinal points to be mapped in ArcMap 10.8. The number, or count, of providers were then aggregated to the county level in ArcMap.

Primary care providers (PCPs) were obtained from the Doctors and Clinicians national downloadable file (<https://data.cms.gov/provider-data/dataset/mj5m-pzi6>). Primary care providers were defined as physicians with the following main specialties listed in the provider file: family practice, general practice, geriatric medicine, internal medicine. In addition, physician assistants and nurse practitioners in the above specialties were also considered as PCPs. Number of hospitals per county was obtained from the Hospital General Information data table (<https://data.cms.gov/provider-data/dataset/xubh-q36u>). Number of home health agencies per county was obtained from the Home Health Care Agencies data table (<https://data.cms.gov/provider-data/dataset/6jpm-sxkc>). Number of nursing homes per county was obtained from the Provider Information data table (<https://data.cms.gov/provider-data/dataset/4pg5-n9py>). Number of hospice agencies per county was obtained from the Hospice – Provider Data table (<https://data.cms.gov/provider-data/dataset/xubh-q36u>).

### Other Data Sources

Although most of the indicators in this data report were obtained from the US Census Bureau's ACS, the MS BRFSS, and the CMS additional county level data sources were utilized.

- (1) Life expectancy at birth was obtained from the Robert Wood Johnson Foundation *Life Expectancy: Could Where You Live Influence How Long You Live?* Data were accessed in April 2022. (<https://www.rwjf.org/en/library/interactives/whereyouliveaffectshowlongyoulive.html>).

- (2) Data on COVID-19 cases, deaths, and vaccinations were downloaded from the Mississippi State Department of Health. Data were accessed in April 2022. ([https://msdh.ms.gov/msdhsite/\\_static/14,0,420,884.html#page\\_end](https://msdh.ms.gov/msdhsite/_static/14,0,420,884.html#page_end)).
- (3) The number of dentists per 100,000 persons (all ages) were obtained from the Health Resources and Services Administration (HRSA) Area Health Resources Files (AHRF). Data were assessed June 2022. (<https://data.hrsa.gov/topics/health-workforce/ahrf>).
- (4) The number of drug overdose deaths of all ages were downloaded from Centers for Disease Control and Prevention (CDC) WONDER data dashboard. Data were accessed June 2022. ([https://wonder.cdc.gov/controller/datarequest/D77;jsessionid=3AC202E57AC0BFE77BAEFB8769E8148D?stage=results&action=toggle&p=O\\_show\\_suppressed&v=true](https://wonder.cdc.gov/controller/datarequest/D77;jsessionid=3AC202E57AC0BFE77BAEFB8769E8148D?stage=results&action=toggle&p=O_show_suppressed&v=true)).
- (5) The number of rural health care centers were downloaded from the Mississippi State Department of Health (MSDH). Data were accessed in April 2022. ([https://msdh.ms.gov/msdhsite/\\_static/resources/7660.pdf](https://msdh.ms.gov/msdhsite/_static/resources/7660.pdf)).
- (6) The number of community health centers were downloaded from the Community Health Center Association of Mississippi (CHCAM). Data were accessed in April 2022. (<https://chcams.org/community-health-centers/>).
- (7) The number of adult day health centers were downloaded from the National Adult Day Services Association website. Data was accessed in April 2022. ([https://www.nadsa.org/locator/?ill\\_directory\\_search=1&ill\\_directory\\_keywords=&ill\\_directory\\_category%5B47173%5D%5B47194%5D=47194&ill\\_directory\\_city=&ill\\_directory\\_state=](https://www.nadsa.org/locator/?ill_directory_search=1&ill_directory_keywords=&ill_directory_category%5B47173%5D%5B47194%5D=47194&ill_directory_city=&ill_directory_state=)).
- (8) The AirNow website of the U.S. Environmental Protection Agency provides measures of air quality with the Air Quality Index (AQI) with scores ranging from 0 to 500. *AirCompare* provides county-level comparisons of the number of days in a year that AQI values are between 101 and 150 (code orange) and/or exceed 150 (code red) for specific subpopulations. For the subpopulation that includes older persons without specific health concerns, the total count of days includes code red days for any pollutant and code orange days for ozone and particulate matter. Data on annual number of unhealthy days for persons age 65 and older were obtained from (<https://www3.epa.gov/aircompare/#trends>). The number of unhealthy days was obtained by clicking each county on the map.
- (9) Particulate matter (PM2.5) and ozone annual averages was obtained from United States Environmental Protection Agency, Outdoor Air Quality Data. Data were assessed June 2022. (<https://www.epa.gov/outdoor-air-quality-data/download-daily-data>).
- (10) Age-friendly communities were collected from the AARP livable community network. Data were accessed in April 2022. (<https://www.aarp.org/livable-communities/network-age-friendly-communities/info-2014/member-list.html>).
- (11) The number of senior centers were downloaded from the Mississippi Care Planning Council. Data were accessed in April 2022. ([https://www.caremississippi.org/list11\\_mississippi\\_senior\\_centers.htm](https://www.caremississippi.org/list11_mississippi_senior_centers.htm)).

- (12) Voter participation rate for voters 18 years and older for the 2020 election were obtained at the county level by the State of Mississippi. Data were obtained May 2022.
- (13) The CDC Wonder website was used to access the Multiple Cause of Death, 2016-2020 dataset. Mortality data are coded by each state and given to the National Center for Health Statistics through the Vital Statistics Cooperative Program. See (<https://wonder.cdc.gov/wonder/help/mcd.html>) for additional information. County-level data for homicide rate per 100,000 people, 65+ deaths by suicide, and number of firearm fatalities were accessed using (<https://wonder.cdc.gov/mcd.html>).
- (14) Data on fatality related with motor vehicle crash were downloaded from the National Highway Traffic Safety Administration (NHTSA) website (<http://www.nhtsa.gov/FARS>). The Fatality Analysis Reporting System (FARS) is annual data on traffic crashes resulting in at least one fatality occurring within 30 days of the crash. The FARS contains data derived from a census of fatal traffic crashes within 50 states, the District of Columbia, and Puerto Rico. We selected fatal crashes with at least one death of vehicle occupants (e.g. driver or passenger) or non-motorist (e.g. pedestrian) occurring in Mississippi only from 2016 to 2020.

### Mississippi GIS Data

County level shapefiles were obtained from the Mississippi GIS website. (<https://www.gis.ms.gov/>).

### **3. Geographic Area Definitions of Communities**

Data availability limited the geographic specificity of the community definitions for which some healthy aging indicators could be measured. There are two major factors that constrained how finely geographic communities could be defined. The first factor is the relatively small sample size of the MS BRFSS data. The second factor is the sparse actual populations of older persons residing in some MS counties. Even if data were available for all older persons in some of these counties, some populations are too small for public reporting of county-level estimates due to privacy concerns.

In this study we addressed the problems associated with sparsely populated populations by selectively aggregating some smaller counties together into larger geographic areas to increase the sample size used for estimation. The estimates derived for the larger aggregated geographic area are then reported for all individual constituent counties. This is an acknowledged limitation of this study.

### Geographic Areas for BRFSS Indicators

Given the small sample sizes of BRFSS respondents it was only feasible to estimate BRFSS indicators for N=45 geographic subareas in the state. These geographic subareas were defined by spatial aggregation of counties using a multi-step process.



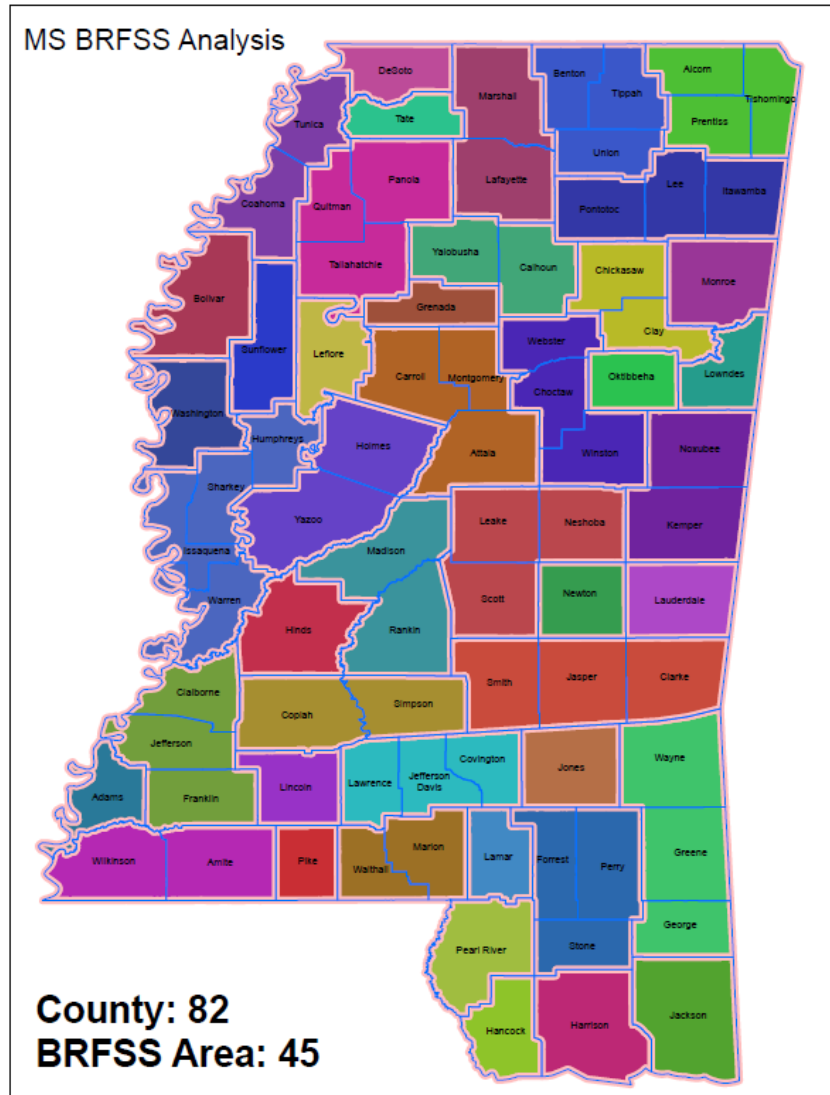
In the first step we combined selected contiguous individual counties into larger geographic areas, each containing N=50 or more BRFSS respondents from 2013-2020 BRFSS surveys under a goal of forming relatively homogenous subareas with respect to socioeconomic status and racial/ethnic mix of the older population. We used ACS estimates of the education (% with less than a high school education, % with a high school education or some college, % with a college degree), income (% with incomes below the poverty level, % with annual incomes exceeding \$50,000), and racial composition (% White, % African American, % Other race, % Hispanic) of the population 65 years or older to evaluate population homogeneity. Aggregation decisions were guided by the following principles:

1. It is preferable to combine counties that are spatially contiguous to each other.
2. It is preferable to combine a smaller county with another smaller county rather than a larger county.
3. It is preferable to combine fewer counties rather than more counties together (e.g., a two-county geographic area is preferable to a three-county geographic area).
4. It is preferable to combine counties with more similar population composition in terms of race, education levels, and income.
5. It is preferable to combine counties located within the same public health districts relative to counties in different public health districts.

In the second step we evaluated whether the preliminary BRFSS areas defined in the first step satisfied the minimum threshold for numerator counts according to data use agreement with the Mississippi State Department of Health (MSDOH). For any percentage BRFSS indicator derived from a respondent-level binary (yes/no) variable we required that there be least 10 respondents with the smaller count of yes versus no responses. All denominator sample sizes satisfied the requirement of N=50 or more respondents. This process produced a preliminary set of N=45 geographic areas for estimating indicators from BRFSS data. Map 1 showcases the N=45 unique geographic areas. However, we found that four indicators (delayed care due to cost, 15 or more days with poor mental health, injury due to a fall, and 5 or more serving of fruits and vegetables) had too much missing data. Upon the advice of our Mississippi partners, it was decided that these indicators would be reported by N=9 areas of public health districts defined by MSDOH.

In the third step, we evaluated whether the preliminary set of BRFSS geographic areas satisfied data privacy requirements stipulated in our data use agreement with the MSDOH. Estimates with a coefficient of variation greater than 30% should be suppressed or noted as statistically unreliable. This requirement pertains to estimates with large coefficients of variation, defined as the estimate divided by its standard error). We found that five indicators (muscle strengthen exercise, 15 or more days with poor physical health, current smoker, shingles shot, and HIV testing) in 16 different BRFSS areas had coefficient of variation estimates which exceeded 30 percent. The data use agreement required that we either censor these indicator estimates or flag those estimates with a note stating that the coefficients of

variation for these indicators is large. Rather than suppress these estimated indicators, we reported those five indicators by 9 areas of public health districts, which resulted in a lower, acceptable standard error.



Map 1. The N=45 BRFSS Area County Assignments

Geographic Level of Indicators

The Mississippi Healthy Aging Data Reports aim to report indicators at the county level, but some indicators are reported at a larger geographic area when needed. As described above, the BRFSS indicators are organized by geographic area of individual or grouped counties with similar socioeconomic status. Below, the indicators are organized by the geographic unit they are reported.

## County level

### Population characteristics

All population characteristics are reported at the county level. The MS HADR reports age distribution, race/ethnicity, marital status, and education level of the population are reported at the county level. In addition, the % of the 65+ population who speak only English at home and are veterans of military service are also reported at the county level. Live expectancy at birth is also reported at the county level.

### COVID-19

All COVID-19 indicators are reported at the county level: the number of total COVID-19 cases, deaths, and vaccination rates from March 2020 to April 2022.

### Chronic Disease

All chronic disease indicators are reported at the county level. The HADR reports the % of 65+ with the following chronic diseases: Alzheimer's disease or related dementias, arthritis, asthma, atrial fibrillation, cancer (breast, colorectal, lung, prostate), chronic kidney disease, chronic obstructive pulmonary disease, diabetes, high cholesterol, heart failure, hypertension, ischemic heart disease, osteoporosis, and stroke.

### Oral Health

The number of dentists per 100,000 persons for all ages is reported at the county level.

### Behavioral Health

The following behavioral health indicators are reported at the county level: number of drug overdose deaths of all ages, % 65+ with alcohol abuse disorder, and drug abuse/substance abuse.

### Mental Health

The following mental health indicators are reported at the county level: the % of 65+ with depression and schizophrenia and other psychotic disorders.

### Living with disability

All living with disability indicators are reported at the county level: the % of 65+ with self-reported hearing, vision, cognition, ambulatory, self-care, and independent living difficulty.

### Caregiving

All caregiving indicators are reported at the county level: the % of grandparents raising grandchildren, and who live with grandchildren.

### Access to Care

The following access to care indicators are reported at the county level and represent the number of providers in the county for: primary care providers, home health agencies, nursing homes, community health centers, adult day health centers, and hospice agencies.

### Community

All community indicators are reported at the county level: average annual rates of particulate matter, and ozone at the county level, annual number of unhealthy days for 65+, number of age friendly efforts, and senior centers in county; and voter participation rates in 2020 election among 18+. In addition, the percentage of households with smartphones, access to internet and broadband, and without access to a computer or internet are reported at the county level.

### Safety and Crime

All safety and crime indicators are reported at the county level: the homicide rate per 100,000 persons, the number of firearm fatalities, and number of 65+ deaths by suicide.

### Transportation

The following transportation indicators are reported at the county level: the % of 65+ who own a motor vehicle, and the number of fatal crashes involving an adult age 60+ per town.

### Housing

All housing indicators are reported at the county level: average household size, median house value, the % 60+ who own a home, have a mortgage, and the % of 65+ population living alone, renter households who spend >35% of income on housing, and owner households who spend >35% of income on housing.

### Economic

All economic indicators are reported at the county level: the % 60+ receiving food stamps in past year; % of 65+ employed last year, with income below the poverty level in last year, 65+ median household income, and % of 65+ households with annual income below \$20,000; between \$20,000-\$49,999; between \$50,000-\$99,999; and above \$100,000.

### Cost of Living

All cost-of-living indicators are reported at the county level: the cost of living for a single homeowner without a mortgage in good health, the cost of living for a single renter in good

health, the cost of living for a couple who are homeowners without a mortgage in good health, and the cost of living for a couple who are renters and in good health.

## **BRFSS area**

### Wellness

All wellness indicators are reported at the BRFSS level: the % of 60+ getting the recommended hours of sleep, with any physical activity last month, met CDC guidelines for muscle-strengthening activity and aerobic physical activity, with self-reported fair or poor health status, and with 15+ physically unhealthy days last month.

### Falls

All falls indicators are reported at the BRFSS level: the % of 60+ who fell within last year, and who were injured in a fall within the last year.

### Prevention

All prevention indicators are reported at the BRFSS level: the % of 60+ with physical exam or check up in past year, flu shot in past year, pneumonia vaccine, shingles vaccine, women with a mammogram within last 2 years, with colorectal cancer screening, HIV test, and who met CDC preventive health screening goals.

### Nutrition/Diet

All nutrition or diet indicators are reported at the BRFSS level: the % of 60+ with 5 or more servings of fruit or vegetables per day, self-reported obese, and with a cholesterol screening.

### Oral Health

The following oral health indicators are reported at the BRFSS level: the % of 60+ with annual dental exam, and with loss of 6 or more teeth.

### Behavioral Health

The % of 60+ who are current smokers is the only behavioral health indicator reported at the BRFSS level.

### Mental Health

The following mental health indicator is reported at the BRFSS level: the % of 60+ with 15 days poor mental health last month.

### Access to Care

The following access to care indicators are reported at the BRFSS level: the % of 60+ with a regular doctor and who did not see a doctor when needed due to cost.

### Transportation

The following transportation indicator is reported at the BRFSS level: the % of 60+ who always drive or ride wearing a seatbelt.

## **4. Estimation Methods for Mississippi BRFSS Indicators**

### Sample Selection Criteria

The selection criteria for the estimation samples used to estimate BRFSS indicators were straightforward. The estimation samples included all BRFSS respondents who were 60 years or older with a valid county code. These selection criteria were applied to BRFSS data from 2013 through 2020.

### Assignment of Respondents to Geographic Areas

As noted earlier, there were N=45 BRFSS geographic areas or regions defined for estimation of BRFSS indicators. Over the eight-year period 2013-2020, there were N=21,838 BRFSS respondents. There were 2 respondents (0%) with missing data for gender who were dropped from the estimation sample.

After assigning individual BRFSS respondents to specific counties, they were subsequently assigned to the 45 geographic BRFSS areas via a cross-walk file.

### Estimation Samples

The estimation samples for specific BRFSS indicators varied depending upon whether the questions were asked of all respondents every year, to all respondents every other year, to all respondents in some years but to fewer respondents in other years, to a subset of respondents based on gender (e.g., use of mammograms). Due to occasional missing data for individual respondents, the sample sizes of the estimation samples also varied among indicators when the same years of BRSS data were used for estimation. For BRFSS indicators based on four years of data (2017-2020) most of the sample sizes exceeded 9,000 respondents. Sample sizes ranged from 9,600 for the HIV testing to 10,724 for having a regular doctor. Sample sizes for indicators estimated with four years (2014, 2016, 2018, and 2020) of BRFSS data were as follows: mammography only for women (6,175) and a dentist visit within a year (9,913). Sample sizes for indicators estimated with three years (2013, 2015, 2017, and 2019) of BRFSS data were as follows: 5 and more servings of fruit or vegetables (9,917) and cholesterol screening (11,280). Table A-2 contains information about the specific years of data used to estimate each of the BRFSS indicators.

### Survey Design and Post-Stratification Weights

The BRFSS data are derived from telephone surveys of the non-institutionalized adult population in Mississippi. Since the BRFSS has a complex survey design in with unequal probabilities of respondent selection, statistical analyses of BRFSS data require the application of design weights to account for different probabilities of selection. The BRFSS uses disproportionate stratified sampling in its landline telephone surveys where the sampling rate differs depending on telephone density. There is also geographic stratification in the Mississippi BRFSS sampling where some geographic areas are sampled at a higher rate than other ones. The probabilities of selection differ among BRFSS respondents due to this stratification, telephone availability, type of phone (cell versus landline since 2011), the number of adults in the household, the number of telephones in the household, and rates of nonresponse by households. Since these factors can affect the representativeness of the sample data, survey design weights are produced to adjust for these factors in statistical analyses of BRFSS survey data.

In addition to these survey design weights, raking weights are computed so that summed counts of weighted BRFSS respondents match known state population totals along population characteristics, including age, sex, and race/ethnicity, telephone source, education level, marital status, and renter/owner status. Since these “ready-to-use” raking weights provided with BRFSS data are only suitable for state-level estimates we had to compute our own post-stratification weights to derive estimates for BRFSS geographic areas within the state.

County-level population estimates for 12 age-sex classes (males 60-64, males 65-69, males 70-74, males 75-79, males 80-84, males 85+, females 60-64, females 65-69, females 70-74, females 75-79, females 80-84, females 85+) were obtained from the 2016-2020 American Community Survey for all counties within Mississippi (<https://data.census.gov/cedsci/>). Data for individual counties was aggregated into the 45 BRFSS geographic areas described earlier. These BRFSS area age-sex population distributions served as the target population matrix for computation of raked post-stratification weights. Post-stratification weights were computed using an iterative raking procedure in which inflation weights were computed to match by sex and then recomputed to match by age group. This process was repeated until stable post-stratification was obtained. Individual respondents in age-sex groups that were under-represented (over-represented) in the estimation sample relative to the BRFSS area census population distribution was assigned weights greater than (less than 1) so that when these post-stratification weights are applied, the weighted age-sex distribution of the estimation sample matched the 2016-2020 ACS age-sex distribution of each BRFSS area.

Different post-stratification weights are computed for groups of indicators depending upon how many years and which years of BRFSS data were pooled together for the estimation sample. As noted earlier depending upon the health indicator, different years of BRFSS data were pooled together. For state-level BRFSS estimates another set of post-stratification weights were computed at the state level to ensure that the sum of weighted age-sex counts of the entire estimation sample matched the 2016-2020 ACS age-sex distribution for the state of Mississippi. These state-level post-stratification weights did not ensure that the age-sex distribution of the estimation sample for each BRFSS area matched the ACS age-sex population distribution for BRFSS area. In other words, the target population for these latter adjustments was the entire state rather than individual BRFSS geographic areas. The final

population weights for individual BRFSS respondents are computed by multiplying the BRFSS survey design weights by our own computed raked post-stratification weights.

### Fixed Effects Estimation of Rates

Geographic residence dummy variables were constructed for each respondent in the various sample populations used to estimating the set of BRFSS indicators. Because of the complex survey design of the BRFSS, a survey design effect regression procedure in Stata 17.0 “regress” was used for parameter estimation. Separate fixed effects dummy variable ordinary least squares regressions with a suppressed constant are estimated on appropriate estimation samples for all BRFSS indicators shown in Tables A-1 and A-2. Respondent cases were weighted with individual population weights equal to the BRFSS survey design weight multiplied by our computed raked post-stratification weights described above.<sup>1</sup> The estimated coefficients for the geographic dummy variables from the regression models are the estimated rates for BRFSS geographic areas. The same estimated rates are reported for all individual counties comprising the BRFSS geographic areas. The 95% confidence intervals for these estimates reflect the margins of error of the estimates. State-level estimates for each BRFSS indicator along with their 95% confidence intervals were similarly estimated using weighted data from the full state estimation samples.

The estimates for health indicators derived from BRFSS data and their confidence intervals are reported all counties on the community profiles with confidence intervals available for download. We take a conservative approach in distinguishing those indicators where the difference between the BRFSS geographic area rate and the state rate is statistically significant at the 5% level. We only distinguish those indicators as significant where the BRFSS area 95% confidence interval does not overlap with the state 95% confidence interval as ones where there the difference between the BRFSS area and state estimates is unlikely to be due to chance associated with sampling variation. We note that fewer BRFSS indicator estimates are distinguished as differing significantly from the state estimates than was found for Medicare MBSF county-level estimates. This is a consequence of the much smaller sample populations used to estimate the BRFSS indicators.

Some caution should be exercised in interpreting differences between the BRFSS indicators reported for individual counties for several reasons. First, rates for which there is no distinction made regarding the statistical significance of the difference between the county and the state rate may be due to sampling variation. Second, data from multiple counties was pooled together to obtain estimates for the larger BRFSS geographic areas and the same estimates are reported for all counties within the geographic area. Actual BRFSS indicators are likely vary among individual counties that constitute the BRFSS areas.

## **5. Note on Data Availability**

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<sup>1</sup> Weighted ordinary least squares regression was also used to obtain estimates with robust standard errors without the standard Stata regress procedure. These estimates were virtually identical to those obtained with the Stata svy procedure.



Throughout the data report, some counties report data not available, *NA* or *0%* (*data not available*), for some indicators derived from the ACS or CMS. Data for a county are not available or suppressed for these indicators because the sample size or population of that county is too small to report. Data are generally suppressed to ensure anonymity of the data reported.

**Table A1: Mississippi Healthy Aging Indicator Definitions**

INDICATORS	DEFINITION
<b>POPULATION CHARACTERISTICS</b>	
Total population all ages	The number of all persons in the state or county.
Population 60 years or older as % of total population	The percentage of persons 60 years or older among the total population.
Total population 60 years or older	The number of persons 60 years or older.
Population 65 years or older as % of total population	The percentage of persons 65 years or older among the total population.
Total population 65 years or older	The number of persons 65 years or older.
% 65-74 years	The percentage of persons 65-74 years among population aged 65 year or older.
% 75-84 years	The percentage of persons 75-84 years among population aged 65 year or older.
% 85 years or older	The percentage of persons 85 years or older among population aged 65 year or older.
% 65+ population who are female	The percentage of females 65 years or older among population aged 65 year or older.
% 85+ population who are female	The percentage of females 85 years or older among population aged 65 year or older.
% White	The percentage of persons 65 years or older reporting their race as “White” or reporting entries such as Irish, German, Italian, Lebanese, Arab, Moroccan, or Caucasian.
% African American	The percentage of persons 65 years or older reporting their race as “Black or African American” or reporting entries such as African American, Kenyan, Nigerian, or Haitian.
% Other race	The percentage of persons 65 years or older reporting their race as any of the following: “Asian Indian,” “Chinese,” Filipino,” “Korean,” “Japanese,” Vietnamese,” “Other Asian”, “American Indian or Alaska Native”, “Native Hawaiian or other Pacific Islander”, or reporting entries such as Navajo, Blackfeet, Inupiat, Yup’ik, or Central American Indian groups, or South, American Indian groups.
% Hispanic/Latino	The percentage of persons 65 years or older reporting their origin as “Hispanic or Latino”.
% married	The percentage of persons 65 years or older reporting that they are currently married with spouse present or with spouse absent due to employment, living away from home, institutionalization, or serving away from home in the Armed Forces.

% divorced/separated	The percentage of persons 65 years or older reporting that they are legally divorced and who have not remarried, or they are legally separated or otherwise absent from their spouse because of marital discord.
% widowed	The percentage of persons 65 years or older reporting they are widows and widowers who have not remarried.
% never married	The percentage of persons 65 years or older reporting they have never been married, including people whose only marriages were annulled.
% with less than high school education	The percentage of persons 65 years or older reporting they have completed less than 9th grade, or 9th grade to 12th grade with no diploma.
% with high school or some college	The percentage of persons 65 years or older reporting they have graduated from high school, attended a college but did not receive a degree, or received an associate degree.
% with college degree	The percentage of persons 65 years or older reporting they received a bachelor's degree.
% with graduate or professional degree	The percentage of persons 65 years or older reporting they received a master's, or professional or doctorate degree.
% 65+ population who speak only English at home	The percentage of persons 65 years or older reporting that no language other than English is spoken at home.
% 65+ population who are veterans of military service	The percentage of persons 65 years or older reporting to have served in the military forces for the United States (Army, Navy, Air Force, Marine Corps, or Coast Guard) in time of war or peace.
Life expectancy at birth	The number of years a person can expect to live at birth
<b>COVID-19</b>	
COVID-19 cases from March 2020 - April 2022	Count of cases of COVID-19 in county from March 2020 to April 2022.
COVID-19 mortality rate per 100,000 people	Rate of deaths from COVID-19 per 100,000 in county from March 2020 to April 2022.
% of county received at least one vaccine dose	The percentage of all county residents who received at least one dose of a COVID-19 vaccine through April 2022.
% of county fully vaccinated	The percentage of all county residents who received at least two doses of a COVID-19 vaccine through April 2022.
<b>WELLNESS</b>	
% 60+ getting recommended hours of sleep	The percentage of persons 60 years or older reporting the recommended amount (7 or 8 hours for age 60-64

	years and 7, 8, or 9 hours for age 65 years or older) of sleeping in a 24-hour period.
% 60+ with any physical activity within last month	The percentage of persons 60 years or older who performed some form of physical activity (such as running, calisthenics, golf, gardening or walking for exercise) outside of their regular job in the past month.
% 60+ met CDC guidelines for muscle-strengthening activity	The percentage of persons 60 years or older who met CDC guidelines for muscle-strengthening activity.
% 60+ met CDC guidelines for aerobic physical activity	The percentage of persons 60 years or older who met CDC guidelines for aerobic physical activity.
% 60+ with fair or poor health status	The percentage of persons 60 years or older reporting fair or poor to question: "Would you say that in general your health is: excellent, very good, fair, or poor?"
% 60+ with 15+ physically unhealthy days last month	The percentage of persons 60 years or older reporting at least 15 days to the question: "Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?"
<b>FALLS</b>	
% 60+ who fell within last year	The percentage of persons 60 years or older reporting to have fallen at least once in the past 12 months.
% 60+ who were injured in a fall within last year	The percentage of persons 60 years or older reporting to have fallen at least once in the past 12 months resulting in injury (defined as causing one to limit regular activities for at least a day or to go see a doctor).
<b>PREVENTION</b>	
% 60+ with physical exam/check-up in last year	The percentage of persons aged 60 years or older who report seeing a doctor for a regular check-up within the past year.
% 60+ flu shot in last year	The percentage of persons aged 60 years or older who answered yes to the question: "During the past 12 months, have you had a seasonal flu shot (or seasonal flu vaccine that was sprayed in your nose [added in 2010])?"
% 60+ with pneumonia vaccine	The percentage of persons aged 60 years or older who reported ever having a pneumonia vaccination.
% 60+ with shingles vaccine	The percentage of persons aged 60 years or older who reported ever having a shingles vaccination
% 60+ women with a mammogram within last 2 years	The percentage of women 60 years or older whose last mammogram was two years ago or less.
% 60+ with colorectal cancer screening	The percentage of persons aged 60 years or older whose last proctoscopy exam was five years ago or less.

% 60+ with HIV test	The percentage of persons aged 60 years or older who answered yes to the question: "Have you ever been tested for HIV?"
% 60+ met CDC preventive health screening goals	The percentage of persons aged 60 or older who were up to date on CDC health screening goals for flu shot, colorectal cancer screening, pneumonia vaccine, and mammograms (women only).
<b>NUTRITION/DIET</b>	
% 60+ with 5 or more servings of fruit or vegetables per day	The percentage of persons 60 years or older reporting to have eaten five or more servings of fruit or vegetables per day in the last month.
% 60+ self-reported obese	The percentage of persons 60 years or older with a body mass index of 30 or higher.
% 60+ with cholesterol screening	The percentage of persons aged 60 years or older who had their cholesterol checked within the past 5 years.
<b>CHRONIC DISEASE</b>	
% 65+ with Alzheimer's disease or related dementias	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for Alzheimer's disease or related dementia from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with arthritis	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for arthritis from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with asthma	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for asthma from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with atrial fibrillation	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for atrial fibrillation from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are

	suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with cancer (breast, colorectal, lung, and prostate)	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for cancer (breast, colorectal, lung, or prostate) from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with chronic kidney disease	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for chronic kidney disease from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with chronic obstructive pulmonary disease (COPD)	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for COPD from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with diabetes	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for diabetes from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with high cholesterol	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for high cholesterol from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with heart failure	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for heart failure from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service

	beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with hypertension	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for hypertension from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with ischemic heart disease	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for ischemic heart disease from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with osteoporosis	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for osteoporosis from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with stroke	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for stroke from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
<b>ORAL HEALTH</b>	
% 60+ with annual dental exam	The percentage of persons aged 60 years or older reporting visiting a dentist or dental clinic within the past year.
# dentists per 100,000 persons (all ages)	The number of professionally active dentists per 100,000 persons in a county.
% 60+ with loss of 6 or more teeth	The percentage of persons 60 years or older reporting to have had 6 or more teeth removed because of tooth decay or gum disease.
<b>BEHAVIORAL HEALTH</b>	
# of drug overdose deaths (all ages)	Number of confirmed drug overdose deaths by county from 2016 to 2020.

% 60+ current smokers	The percentage of persons 60 years or older reporting to have ever smoked at least 100 cigarettes and who now smoke on some or all days.
% 65+ with alcohol abuse disorder	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for alcohol use disorder from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with drug abuse/substance abuse	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for drug or substance abuse from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 60+ with 15+ days poor mental health last month	The percentage of persons 60 years or older reporting at least 15 days to the question: "Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?"
% 65+ with depression	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for depression from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
% 65+ with schizophrenia & other psychotic disorders	The percentage of Medicare fee-for-service beneficiaries enrolled in Part A and B who ever met criteria for schizophrenia and other psychotic disorders from 2007-2018. Prevalence estimates are calculated by CMS as the beneficiaries with a condition divided by total fee-for-service beneficiaries. Data for a county are suppressed if fewer than 11 beneficiaries have a condition.
<b>LIVING WITH DISABILITY</b>	
% 65+ with self-reported hearing difficulty	The percentage of persons aged 65 or older reporting to be deaf or having serious difficulty hearing.
% 65+ with self-reported vision difficulty	The percentage of persons aged 65 or older reporting to be blind or has serious difficulty seeing even with corrective lenses.



% 65+ with self-reported cognition difficulty	The percentage of persons aged 65 or older reporting cognitive difficulties (such as learning, remembering, concentrating, or making decisions) because of a physical, mental, or emotional condition.
% 65+ with self-reported ambulatory difficulty	The percentage of persons aged 65 or older reporting to have a condition that substantially limits one or more basic activities, such as walking, climbing stairs, reaching, lifting, or carrying.
% 65+ with self-reported self-care difficulty	The percentage of persons aged 65 or older reporting to have a physical or mental health condition that has lasted at least 6 months and makes it difficult for them to take care of their own personal needs, such as bathing, dressing, or getting around inside the home.
% 65+ with self-reported independent living difficulty	The percentage of persons aged 65 or older reporting to have a physical, mental, or emotional condition lasting six months or more that makes it difficult or impossible to perform basic activities outside the home alone.
<b>CAREGIVING</b>	
% of grandparents raising grandchildren	The percentage of grandparents who are financially responsible for any or all grandchildren living in the household.
% of grandparents who live with grandchildren	The percentage of grandparents who are living with a grandchild in the household.
<b>ACCESS TO CARE</b>	
% 60+ with a regular doctor	The percentage of persons 60 years or older reporting to have a personal doctor or health care provider.
% 60+ who did not see doctor when needed due to cost	The percentage of persons 60 years or older responding yes to the question: "Was there a time during the last 12 months when you needed to see a doctor but could not due to the cost?"
# of primary care providers	A count of Medicare-certified primary care providers, defined as physicians with specialties of family practice, general practice, geriatric medicine, and internal medicine, physician assistants, nurse practitioners; in the county.
# of rural health care centers	A count of rural health care centers within a county.
# of hospitals	A count of Medicare-certified hospitals within a county.
# of home health agencies	A count of Medicare-certified home health agencies within a county.
# of nursing homes	A count of Medicare-certified nursing homes within a county.
# of community health centers	A count of community health centers within a county.
# of adult day health centers	A count of adult day health centers within a county.

# of hospice agencies	A count of Medicare-certified hospice agencies within a county.
<b>COMMUNITY</b>	
Particulate matter PM2.5	The average annual exposure to particulate matter (PM2.5).
Ozone	The average annual exposure to ozone.
Air pollution: annual # of unhealthy days for 65+ (county)	The number of days in 2020 where there was an Air Quality Index score classified as “code red” or “code orange” for ozone or particulate matter in the county.
Age-friendly efforts in county	A county that is or that is making efforts to become age-friendly.
# of senior centers	The number of senior centers in the county.
% household with having smartphone (all ages)	The percentage of households in county with smartphones.
% household without computer (all ages)	The percentage of households in county without a computer.
% household with access to broadband (all ages)	The percentage of households in county with access to broadband.
% household without access to internet (all ages)	The percentage of households in county without access to internet.
Voter participation rate in 2020 presidential election (age 18+)	The % of registered voters aged 18 and older who voted in the 2020 presidential election.
<b>SAFETY &amp; CRIME</b>	
Homicide rate /100,000 persons (county)	The number of deaths due to homicide per 100,000 persons from 2016 to 2020.
# firearm fatalities (county)	The number of deaths due to firearms per 100,000 persons from 2016 to 2020.
# 65+ deaths by suicide (county)	The number of deaths by suicide from 2016 to 2020 among people aged 65 and older.
<b>TRANSPORTATION</b>	
% 65+ who own a motor vehicle	The percentage of households with a householder aged 65 years or older who own one or more vehicles.
% 60+ who always drive or ride wearing a seatbelt	The percentage of persons aged 60 years or older reporting to use seat belt always while driving a car.
# of fatal crashes involving adult age 60+/county	The number of motor vehicle fatalities in county involving an adult age 60 or older (driver, passenger, or pedestrian) from 2016 to 2020.
<b>HOUSING</b>	
% 65+ population living alone	The percentage of persons 65 years or older reporting that they live alone.
Average household size (all ages)	Average number of persons in the household.
Median house value	The average median value of houses.
% 60+ own home	The percentage of households with a householder aged 60 years or older who is a homeowner.

% 60+ homeowners who have mortgage	The percentage of households with a householder aged 60 years or older who have mortgage on home.
% 65+ households (renter) spend >35% of income on housing	The percentage of households with a householder aged 65 years or older who spend more than 35% of income on renting a house.
% 65+ households (owner) spend >35% of income on housing	The percentage of households with a householder aged 65 years or older who own the house and spend more than 35% of income on housing expense.
<b>ECONOMIC</b>	
% 60+ receiving food stamps past year	The percentage of the households with a householder aged 60 years or older who received food stamps/Supplemental Nutrition Assistance Program (SNAP) benefits in the past 12 months.
% 65+ employed past year	The percentage of persons 60 years or older employed in the past year.
% 65+ with income below the poverty level in last year	The percentage of households with a householder (i.e., the person (or one of the people) in whose name the housing unit is owned or rented (maintained)) age 65 years or older with an annual family income below the official poverty threshold.
65+ median household income	The median value income of households with a householder aged 65 years or older.
% 65+ households with annual income < \$20,000	The percentage of households with a householder (i.e., the person (or one of the people) in whose name the housing unit is owned or rented (maintained)) age 65 years or older with an annual income less than \$20,000.
% 65+ households with annual income \$20,000-\$49,999	The percentage of households with a householder aged 65 years or older with an annual income between \$20,000 and \$49,000.
% 65+ households with annual income \$50,000-\$99,999	The percentage of households with a householder aged 65 years or older with an annual income between \$50,000-\$99,999.
% 65+ households with annual income \$100,000+	The percentage of households with a householder aged 65 years or older with an annual income more than \$100,000.
<b>COST OF LIVING</b>	
Elder Index	
Single, homeowner without mortgage, good health	Annual income needed for a single homeowner with no mortgage in good health to attain a modest standard of living in the county.
Single, renter, good health	Annual income needed for a single renter in good health to attain a modest standard of living in the county.

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Couple, homeowner without mortgage, good health	Annual income needed for a couple who are homeowners with no mortgage in good health to attain a modest standard of living in the county.
Couple, renter, good health	Annual income needed for a couple who are renters in good health to attain a modest standard of living in the county.

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**Table A2: Years and Data Sources for Community Profile Indicators**

INDICATORS	DEFINITION
<b>POPULATION CHARACTERISTICS</b>	
Total population all ages, Population 60 years or older as a % of total population, Total population 60 years or older, Population 65 years or older as a % of total population, Total population 65 years or older, % 65-74 years, 75-84 years, 85 years or older, % 65+ female, % 85+ female	United States Census Bureau. "B01001: SEX BY AGE." <i>2016-2020 American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
<i>Race/Ethnicity:</i>  % White, % African American, % Other race, % Hispanic/Latino	United States Census Bureau. "B01001A, B01001B, B01001C, B01001D, B01001E, B01001F, B0100G, B01001I: SEX BY AGE." <i>2016-2020 American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
<i>Marital status:</i>  % married, divorced/separated, widowed, never married	United States Census Bureau. "B12002: SEX BY MARITAL STATUS BY AGE FOR THE POPULATION 15 YEARS AND OVER." <i>2016-2020 American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
<i>Education:</i>  % with less than a high school education, high school or some college, college degree, graduate or professional degree	United States Census Bureau. "B15001: SEX BY AGE BY EDUCATIONAL ATTAINMENT FOR THE POPULATION 18 YEARS AND OVER." <i>2016-2020 American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% 65+ population who speak only English at home	United States Census Bureau. "B16007: AGE BY LANGUAGE SPOKEN AT HOME BY ABILITY TO SPEAK ENGLISH FOR THE POPULATION 5 YEARS AND OVER". <i>2016-2020 American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% 65+ population who are veterans of military service	United States Census Bureau. "B21001: SEX BY AGE BY VETERAN STATUS FOR THE CIVILIAN POPULATION 18 YEARS AND OVER". <i>2016-2020 American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
Life expectancy at birth	Robert Wood Johnson Foundation. Life Expectancy: Could Where You Live Influence How Long You Live? Accessed April 2022. ( <a href="https://www.rwjf.org/en/library/interactives/whereyouliveveaffectshowlongyoulive.html">https://www.rwjf.org/en/library/interactives/whereyouliveveaffectshowlongyoulive.html</a> ).

<b>COVID-19</b>	
COVID-19 cases and deaths: COVID-19 cases from March 2020 - April 2022; COVID-19 mortality rate per 100,000 people	COVID-19 data was obtained from the Mississippi State Department of Health. Data reflects totals from March 2020 to April 26 <sup>th</sup> , 2022. Retrieved from <a href="https://msdh.ms.gov/msdhsite/_static/resources/18761.pdf">https://msdh.ms.gov/msdhsite/_static/resources/18761.pdf</a>
COVID-19 vaccines: % of county received at least one vaccine dose; % of county fully vaccinated	COVID-19 vaccination data was obtained from the Mississippi State Department of Health. Data reflects totals from March 2020 to April 26 <sup>th</sup> , 2022. Retrieved from <a href="https://msdh.ms.gov/msdhsite/_static/resources/12130.pdf">https://msdh.ms.gov/msdhsite/_static/resources/12130.pdf</a>
<b>WELLNESS</b>	
% 60+ getting recommended hours of sleep	Mississippi State Department of Health. 2014, 2016, 2018, 2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/_static/31,0,110.html">https://msdh.ms.gov/msdhsite/_static/31,0,110.html</a> ).
% 60+ with any physical activity within last month	Mississippi State Department of Health. 2017-2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/_static/31,0,110.html">https://msdh.ms.gov/msdhsite/_static/31,0,110.html</a> ).
% 60+ met CDC guidelines for muscle-strengthening activity	Mississippi State Department of Health. 2013, 2015, 2017, 2019 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/_static/31,0,110.html">https://msdh.ms.gov/msdhsite/_static/31,0,110.html</a> ).
% 60+ met CDC guidelines for aerobic physical activity	
% 60+ with fair or poor health status	Mississippi State Department of Health. 2017-2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/_static/31,0,110.html">https://msdh.ms.gov/msdhsite/_static/31,0,110.html</a> ).
% 60+ with 15+ physically unhealthy days last month	
<b>FALLS</b>	
% 60+ who fell within last year	Mississippi State Department of Health. 2014, 2016, 2018, 2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/_static/31,0,110.html">https://msdh.ms.gov/msdhsite/_static/31,0,110.html</a> ).
% 60+ who were injured in a fall within last year	Mississippi State Department of Health. 2014, 2016, 2018 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/_static/31,0,110.html">https://msdh.ms.gov/msdhsite/_static/31,0,110.html</a> ).
<b>PREVENTION</b>	
% 60+ with physical exam/check-up in last year	Mississippi State Department of Health. 2017-2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/_static/31,0,110.html">https://msdh.ms.gov/msdhsite/_static/31,0,110.html</a> ).
% 60+ flu shot in last year	
% 60+ with pneumonia vaccine	

% 60+ with shingles vaccine	Mississippi State Department of Health. 2014, 2017, 2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
% 60+ women with a mammogram within last 2 years	Mississippi State Department of Health. 2014, 2016, 2018, 2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
% 60+ with colorectal cancer screening	Mississippi State Department of Health. 2015, 2016, 2018, 2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
% 60+ with HIV test	Mississippi State Department of Health. 2017-2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
% 60+ met CDC preventive health screening goals	Mississippi State Department of Health. 2014, 2015, 2016, 2018, 2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).

## CHRONIC DISEASE

### *Chronic diseases:*

% 65+ with Alzheimer's disease or related dementias; arthritis; asthma; atrial fibrillation; cancer (breast, colorectal, lung, and prostate); chronic kidney disease; COPD; diabetes; heart failure; high cholesterol; hypertension; ischemic heart disease; osteoporosis; stroke

Centers for Medicare and Medicaid Services. Multiple Chronic Conditions, 2018. Accessed July 2022.  
([https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC\\_Main](https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main)).

## NUTRITION/DIET

% 60+ with 5 or more servings of fruit or vegetables per day	Mississippi State Department of Health. 2013, 2015, 2017, 2019 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
% 60+ self-reported obese	Mississippi State Department of Health. 2017-2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
% 60+ with cholesterol screening	Mississippi State Department of Health. 2013, 2015, 2017, 2019 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).

## ORAL HEALTH

% 60+ with annual dental exam	Mississippi State Department of Health. 2014, 2016, 2018, 2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
# dentists per 100,000 persons (all ages)	Health Resources & Services Administration (HRSA). The Area Health Resources Files (AHRF). Assessed June 2022. ( <a href="https://data.hrsa.gov/topics/health-workforce/ahrf">https://data.hrsa.gov/topics/health-workforce/ahrf</a> ).
% 60+ with loss of 6 or more teeth	Mississippi State Department of Health. 2014, 2016, 2018, 2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
<b>BEHAVIORAL HEALTH</b>	
# of drug overdose deaths (all ages)	CDC Wonder, Multiple Cause of Death, 2016-2020. Accessed June 2022. ( <a href="https://wonder.cdc.gov/controller/datarequest/D77;jsessionid=3AC202E57AC0BFE77BAEFB8769E8148D?stage=results&amp;action=toggle&amp;p=O show suppressed &amp;v=true">https://wonder.cdc.gov/controller/datarequest/D77;jsessionid=3AC202E57AC0BFE77BAEFB8769E8148D?stage=results&amp;action=toggle&amp;p=O show suppressed &amp;v=true</a> ).
% 60+ current smokers	Mississippi State Department of Health. 2017-2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
% 65+ with alcohol abuse disorder	Centers for Medicare and Medicaid Services. Multiple Chronic Conditions, 2018. Accessed July 2022. ( <a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main">https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main</a> ).
% 65+ with drug abuse/substance abuse	Centers for Medicare and Medicaid Services. Multiple Chronic Conditions, 2018. Accessed July 2022. ( <a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main">https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main</a> ).
% 60+ with 15+ days poor mental health last month	Mississippi State Department of Health. 2016-2018 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a> ).
% 65+ with depression	Centers for Medicare and Medicaid Services. Multiple Chronic Conditions, 2018. Accessed July 2022. ( <a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main">https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main</a> ).
% 65+ with schizophrenia & other psychotic disorders	Centers for Medicare and Medicaid Services. Multiple Chronic Conditions, 2018. Accessed July 2022. ( <a href="https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main">https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/CC_Main</a> ).
<b>LIVING WITH DISABILITY</b>	
% 65+ with self-reported hearing difficulty	United States Census Bureau. "B18102: SEX BY AGE BY HEARING DIFFICULTY". 2016-2020 <i>American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).



<p>% 65+ with self-reported vision difficulty</p>	<p>United States Census Bureau. "B18103: SEX BY AGE BY VISION DIFFICULTY". <i>2016-2020 American Community Survey</i>. Accessed May 2022. (<a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a>).</p>
<p>% 65+ with self-reported cognition difficulty</p>	<p>United States Census Bureau. "B18104: SEX BY AGE BY COGNITION DIFFICULTY". <i>2016-2020 American Community Survey</i>. Accessed May 2022. (<a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a>).</p>
<p>% 65+ with self-reported ambulatory difficulty</p>	<p>United States Census Bureau. "B18105: SEX BY AGE BY AMBULATORY DIFFICULTY". <i>2016-2020 American Community Survey</i>. Accessed May 2022. (<a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a>).</p>
<p>% 65+ with self-reported self-care difficulty</p>	<p>United States Census Bureau. "B18106: SEX BY AGE BY SELF-CARE DIFFICULTY". <i>2016-2020 American Community Survey</i>. Accessed May 2022. (<a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a>).</p>
<p>% 65+ with self-reported independent living difficulty</p>	<p>United States Census Bureau. "B18107: SEX BY AGE BY INDEPENDENT LIVING DIFFICULTY". <i>2016-2020 American Community Survey</i>. Accessed May 2022. (<a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a>).</p>
<p><b>CAREGIVING</b></p>	
<p>% of grandparents raising grandchildren</p>	<p>United States Census Bureau. "B10050: GRANDPARENTS LIVING WITH OWN GRANDCHILDREN UNDER 18 YEARS BY RESPONSIBILITY FOR OWN GRANDCHILDREN BY LENGTH OF TIME RESPONSIBLE FOR OWN GRANDCHILDREN FOR THE POPULATION 30 YEARS AND OVER". <i>2016-2020 American Community Survey</i>. Accessed May 2022. (<a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a>).</p>
<p>% of grandparents who live with grandchildren</p>	<p>United States Census Bureau. "B10050: GRANDPARENTS LIVING WITH OWN GRANDCHILDREN UNDER 18 YEARS BY RESPONSIBILITY FOR OWN GRANDCHILDREN BY LENGTH OF TIME RESPONSIBLE FOR OWN GRANDCHILDREN FOR THE POPULATION 30 YEARS AND OVER". <i>2016-2020 American Community Survey</i>. Accessed May 2022. (<a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a>).</p>
<p><b>ACCESS TO CARE</b></p>	
<p>% 60+ with a regular doctor</p>	<p>Mississippi State Department of Health. 2017-2020 Behavioral Risk Factor Surveillance Survey. Accessed June 2022.</p>
<p>% 60+ who did not see doctor when needed due to cost</p>	<p>(<a href="https://msdh.ms.gov/msdhsite/ static/31,0,110.html">https://msdh.ms.gov/msdhsite/ static/31,0,110.html</a>).</p>

# of primary care providers	Center for Medicare and Medicaid Services. National Provider File. Accessed April 2022. ( <a href="https://data.cms.gov/provider-data/dataset/mj5m-pzi6">https://data.cms.gov/provider-data/dataset/mj5m-pzi6</a> ).
# of rural health care centers	Mississippi State Department of Health. Directory of Mississippi Health Facilities. Accessed April 2022. ( <a href="https://msdh.ms.gov/msdhsite/ static/resources/7660.pdf">https://msdh.ms.gov/msdhsite/ static/resources/7660.pdf</a> ).
# of hospitals	Center for Medicare and Medicaid Services. Hospital General Information. Accessed April 2022. ( <a href="https://data.cms.gov/provider-data/dataset/xubh-q36u">https://data.cms.gov/provider-data/dataset/xubh-q36u</a> ).
# of home health agencies	Center for Medicare and Medicaid Services. Home Health Care Agencies. Accessed April 2022. ( <a href="https://data.cms.gov/provider-data/dataset/6jpm-sxkc">https://data.cms.gov/provider-data/dataset/6jpm-sxkc</a> ).
# of nursing homes	Center for Medicare and Medicaid Services. Provider Information. Accessed April 2022. ( <a href="https://data.cms.gov/provider-data/dataset/4pq5-n9py">https://data.cms.gov/provider-data/dataset/4pq5-n9py</a> ).
# of community health centers	Community Health Center Association of Mississippi (CHCAM). Accessed April 2022. ( <a href="https://chcams.org/community-health-centers/">https://chcams.org/community-health-centers/</a> ).
# of adult day health centers	National Adult Day Services Association (NADSA). Accessed April 2022. ( <a href="https://www.nadsa.org/locator/?ill_directory_search=1&amp;ill_directory_keywords=&amp;ill_directory_category%5B73721%5D%5B73758%5D=73758&amp;ill_directory_city=&amp;ill_directory_state=">https://www.nadsa.org/locator/?ill_directory_search=1&amp;ill_directory_keywords=&amp;ill_directory_category%5B73721%5D%5B73758%5D=73758&amp;ill_directory_city=&amp;ill_directory_state=</a> ).
# of hospice agencies	Center for Medicare and Medicaid Services. Hospice - Provider Data. Accessed April 2022. ( <a href="https://data.cms.gov/provider-data/dataset/252m-zfp9">https://data.cms.gov/provider-data/dataset/252m-zfp9</a> ).
<b>COMMUNITY</b>	
Particulate matter PM2.5	United States Environmental Protection Agency. Outdoor Air Quality Data. Accessed June 2022. ( <a href="https://www.epa.gov/outdoor-air-quality-data/download-daily-data">https://www.epa.gov/outdoor-air-quality-data/download-daily-data</a> ).
Ozone	United States Environmental Protection Agency. Air Compare, 2022. Accessed June 2022. ( <a href="https://www3.epa.gov/aircompare/#trends">https://www3.epa.gov/aircompare/#trends</a> ).
Air pollution: annual # of unhealthy days for 65+ (county)	AARP. AARP Network of Age-Friendly States and Communities. Accessed April 2022. ( <a href="https://www.aarp.org/livable-communities/network-age-friendly-communities/info-2014/member-list.html">https://www.aarp.org/livable-communities/network-age-friendly-communities/info-2014/member-list.html</a> ).

# of senior centers	Mississippi Care Planning Council. Mississippi Senior Centers. Accessed April 2022. ( <a href="https://www.caremississippi.org/list11_mississippi_senior_centers.htm">https://www.caremississippi.org/list11_mississippi_senior_centers.htm</a> ).
% household with having smartphone (all ages)	United States Census Bureau. "B28001, B28003, S2801: TYPES OF COMPUTERS AND INTERNET SUBSCRIPTIONS". <i>2016-2020 American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% household without computer (all ages)	
% household with access to broadband (all ages)	
% household without access to internet (all ages)	
Voter participation rate in 2020 presidential election (age 18+)	State of Mississippi. Voter participation in 2020 election. Accessed May 2022.
<b>SAFETY &amp; CRIME</b>	
Homicide rate /100,000 persons (county)	CDC Wonder, Multiple Cause of Death, 2016-2020. Accessed June 2022. ( <a href="https://wonder.cdc.gov/controller/datarequest/D77;jsessionid=3AC202E57AC0BFE77BAEFB8769E8148D?stage=results&amp;action=toggle&amp;p=O_show_suppressed&amp;v=true">https://wonder.cdc.gov/controller/datarequest/D77;jsessionid=3AC202E57AC0BFE77BAEFB8769E8148D?stage=results&amp;action=toggle&amp;p=O_show_suppressed&amp;v=true</a> ).
# firearm fatalities (county)	
# 65+ deaths by suicide (county)	
<b>TRANSPORTATION</b>	
% 65+ who own a motor vehicle	United States Census Bureau. "B25045: TENURE BY VEHICLES AVAILABLE BY AGE OF HOUSEHOLDER". <i>2016-2020 American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% 60+ who always drive or ride wearing a seatbelt	Mississippi State Department of Health. 2016-2018 Behavioral Risk Factor Surveillance Survey. Accessed June 2022. ( <a href="https://msdh.ms.gov/msdhsite/_static/31,0,110.html">https://msdh.ms.gov/msdhsite/_static/31,0,110.html</a> ).
# of fatal crashes involving adult age 60+/county	National Highway Traffic Safety Administration, Fatal Accident Reporting System (FARS) representing data for years 2016-2020. Downloaded from ( <a href="http://www.nhtsa.gov/FARS">http://www.nhtsa.gov/FARS</a> ). in May 2022.
<b>HOUSING</b>	
% 65+ population living alone	United States Census Bureau. "B09020: RELATIONSHIP BY HOUSEHOLD TYPE (INCLUDING LIVING ALONE) FOR THE POPULATION 65 YEARS AND OVER". <i>2016-2020 American Community Survey</i> . Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).

Average household size (all ages)	United States Census Bureau. "B11016: HOUSEHOLD TYPE BY HOUSEHOLD SIZE 2016-2020 American Community Survey. Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
Median house value	United States Census Bureau. "B25077: Median House Value". 2016-2020 American Community Survey. Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% 60+ own home	United States Census Bureau. "B25007: TENURE BY AGE HOUSEHOLDER". 2016-2020 American Community Survey. Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% 60+ homeowners who have mortgage	United States Census Bureau. "B25027: MORTGAGE STATUS BY AGE HOUSEHOLDER". 2016-2020 American Community Survey. Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% 65+ households (renter) spend >35% of income on housing	United States Census Bureau. "B25072: AGE OF HOUSEHOLDER BY GROSS RENT AS A PERCENTAGE OF HOUSEHOLD INCOME IN THE PAST 12 MONTHS". 2016-2020 American Community Survey. Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% 65+ households (owner) spend >35% of income on housing	United States Census Bureau. "B25093: AGE OF HOUSEHOLDER BY SELECTED MONTHLY OWNER COSTS AS A PERCENTAGE OF HOUSEHOLD INCOME IN THE PAST 12 MONTHS". 2016-2020 American Community Survey. Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
<b>ECONOMIC</b>	
% 60+ receiving food stamps past year	United States Census Bureau. "B22001: RECEIPT OF FOOD STAMPS/SNAP IN THE PAST 12 MONTHS BY PRESENCE PEOPLE 60 YEARS AND OVER FOR HOUSEHOLDS". 2016-2020 American Community Survey. Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% 65+ employed past year	United States Census Bureau. "B23004: WORK STATUS IN THE PAST 12 MONTHS BY AGE BY EMPLOYMENT STATUS FOR THE CIVILIAN POPULATION 65 YEARS AND OVER". 2016-2020 American Community Survey. Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).
% 65+ with income below the poverty level in last year	United States Census Bureau. "B17001: "POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE". 2016-2020 American Community Survey. Accessed May 2022. ( <a href="https://data.census.gov/cedsci/">https://data.census.gov/cedsci/</a> ).

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**65+ median household income**


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 % 65+ households with annual income < \$20,000
 

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 % 65+ households with annual income \$20,000-\$49,999
 

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 % 65+ households with annual income \$50,000-\$99,999
 

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 % 65+ households with annual income \$100,000+
 

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United States Census Bureau. "B19037: AGE OF HOUSEHOLDER BY HOUSEHOLD INCOME IN THE PAST 12 MONTHS (IN 2013 INFLATION-ADJUSTED DOLLARS)". *2016-2020 American Community Survey*. Accessed May 2022. (<https://data.census.gov/cedsci/>).

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**COST OF LIVING**
*Elder Index*


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 Single, homeowner without mortgage, good health
 

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 Single, renter, good health
 

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 Couple, homeowner without mortgage, good health
 

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 Couple, renter, good health
 

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Elder Economic Security Index data from the University of Massachusetts Boston Center for Social and Demographic Research on Aging, 2022. Accessed June 2022. (<https://elderindex.org/>).