

Report on the Burden of Chronic Diseases in Mississippi, 2014



MISSISSIPPI STATE DEPARTMENT OF HEALTH

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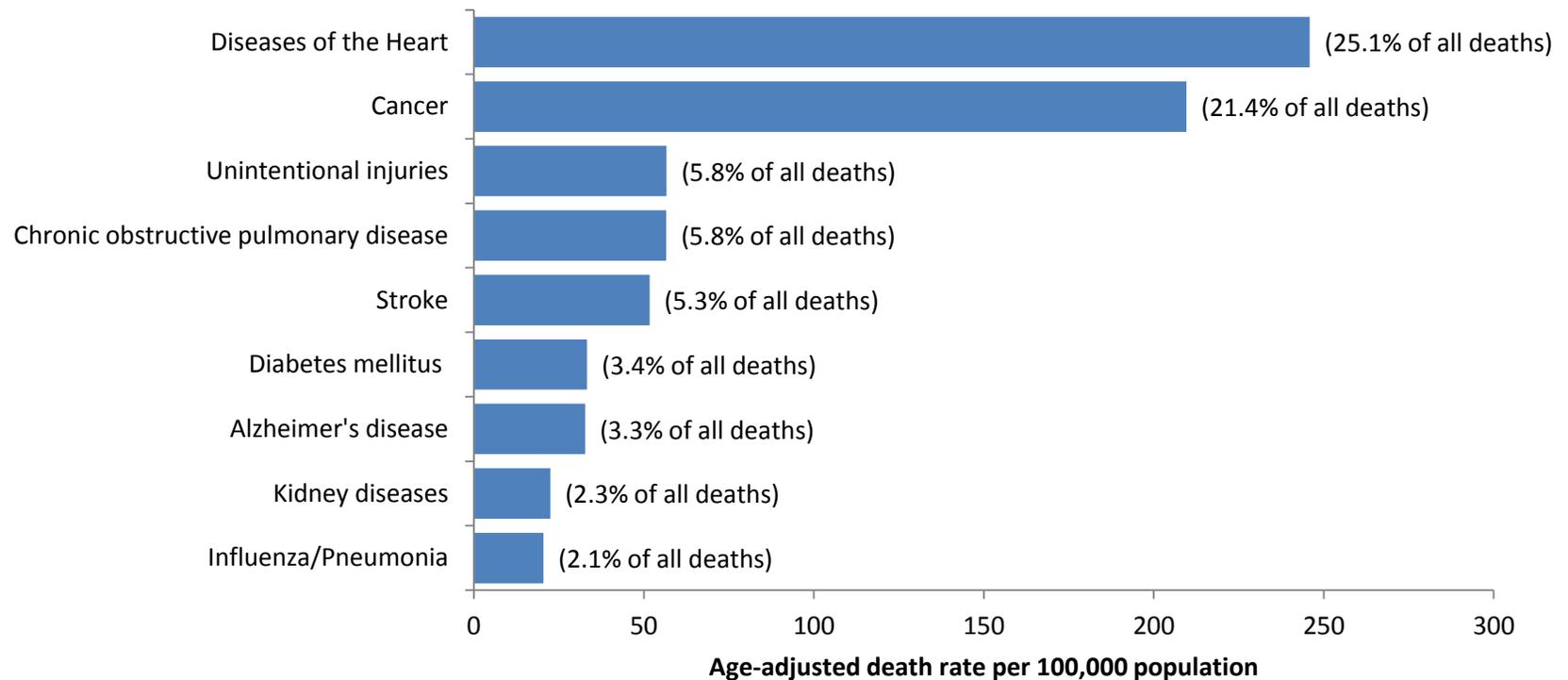
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Introduction

Chronic diseases are among the most common of all health problems in Mississippi.

In 2011, 7 of the leading causes of death in Mississippi were chronic disease-related. These included deaths with diseases of the heart, cancer, chronic obstructive pulmonary disease, stroke, Alzheimer's disease, diabetes and kidney disease. Over half (55%) of all deaths in Mississippi were due to cardiovascular-related diseases, cancer and diabetes.

Figure 1. Leading causes of death in Mississippi, 2011.



Chronic diseases are among the most costly of all health problems in Mississippi.

In 2010, there were 155,629 (41.2%) discharges due to chronic conditions in Mississippi and the total charges for chronic related conditions was over \$4 billion. Congestive heart failure was the most prevalent followed by chronic obstructive pulmonary disease and diabetes mellitus with complications. Myocardial infarction, congestive heart failure and osteoarthritis were the most costly.

Figure 2. Hospital discharge rates per 1,000 by disease, Mississippi, 2010.

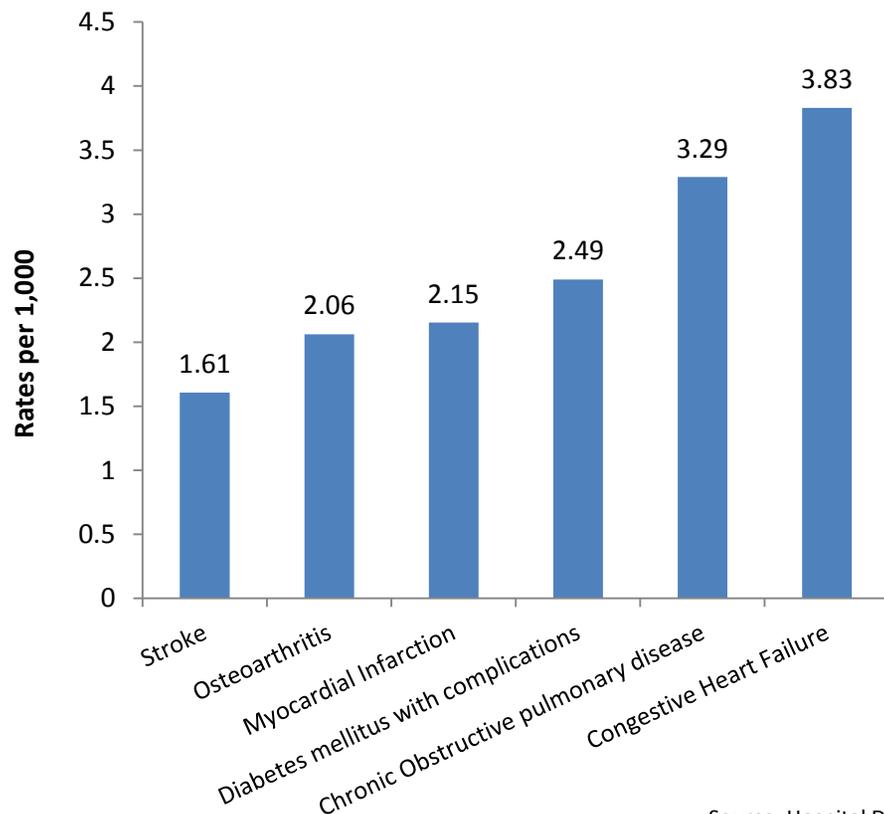
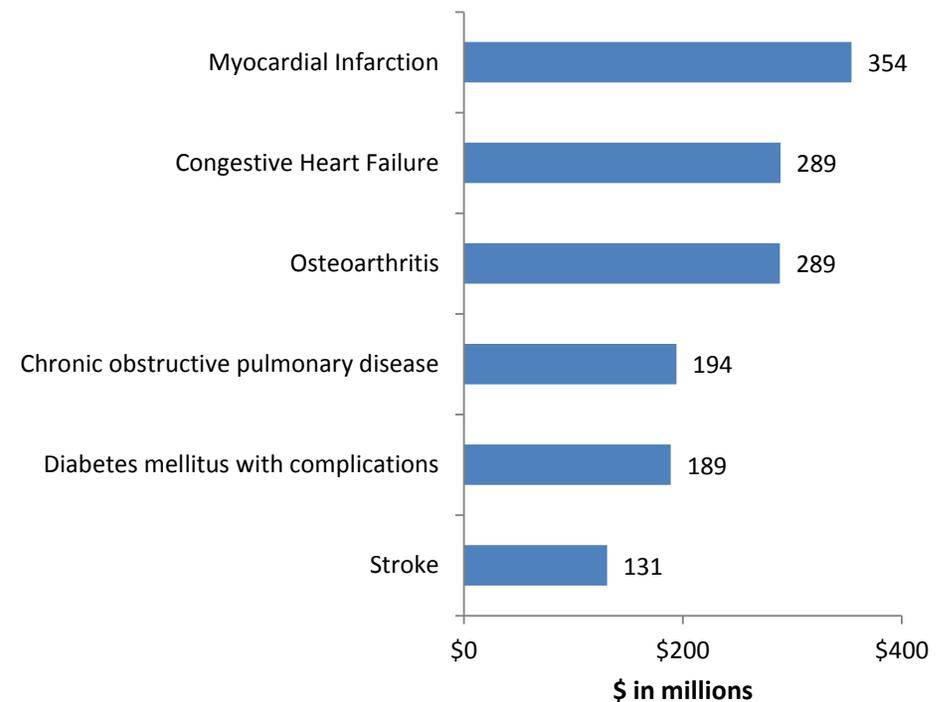


Figure 3. Estimated hospital discharge charges (in millions) by disease, Mississippi, 2010.



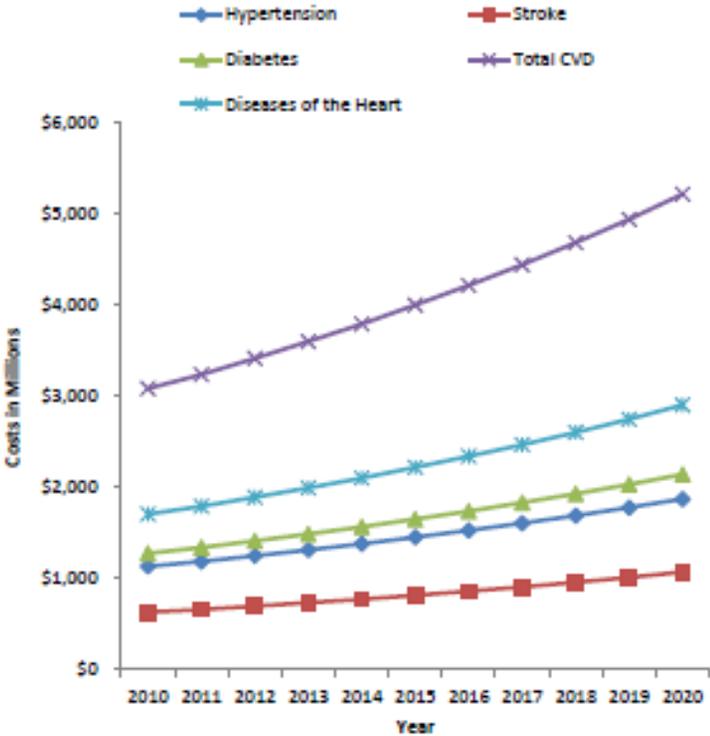
Source: Hospital Discharge Data Report, 2010

Medical spending on chronic health conditions has grown rapidly in recent years and is placing a significant burden on state budgets. Medical costs associated with chronic health conditions are expected to continue to increase.

Medical costs associated with chronic health conditions are expected to increase up to 70% between 2010 and 2020. Below is a list of projected percent increases in medical costs for some of the most common chronic health conditions in Mississippi.

<u>Condition</u>	<u>Projected % increase in costs, 2010-2020</u>
Stroke	70.7%
Disease of the Heart	70.3%
Total CVD	69.1%
Diabetes	67.9%
Hypertension	65.4%

Figure 4. Projected medical costs for Mississippi for 2010-2020.



Source: Centers for Disease Control and Prevention: Chronic Disease Cost Calculator: <http://www.cdc.gov/chronicdisease/resources/calculator/index.htm>

The prevalence of chronic diseases and related risk factors is generally higher in Mississippi than in other states.

Heart Disease and Stroke

- Mississippi's cardiovascular disease death rate is the highest in the nation.

Diabetes

- Mississippi ranks 2nd in the U.S. for overall diabetes prevalence among adults.

Cancer

- Mississippi had the 2nd highest age-adjusted death rate due to cancer in the nation.

Obesity

- Mississippi ranks 2nd in the U.S. for obesity prevalence among adults.

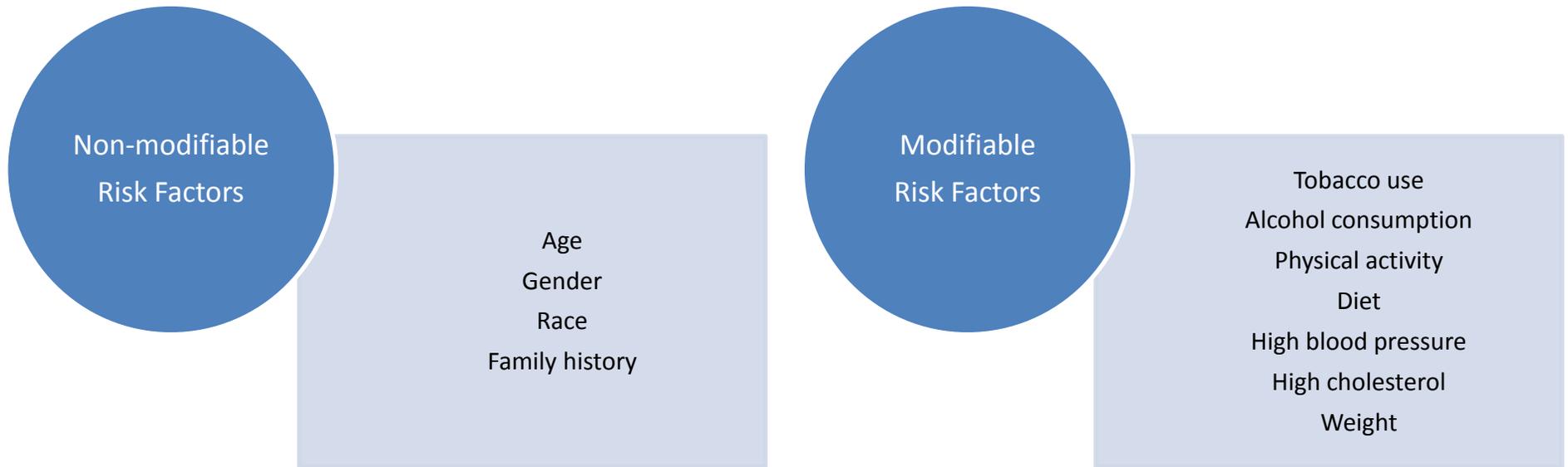
Tobacco

- Mississippi ranks 6th in the U.S. for overall smoking prevalence among adults.

Source: 2013 America's Health Rankings: www.americashealthrankings.org

Chronic diseases are among the most preventable of all health problems in Mississippi.

Risk factors for chronic disease may be generally categorized into one of two categories: modifiable and non-modifiable. Four modifiable health risk behaviors—lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption—are responsible for much of the illness, suffering, and early death related to chronic disease. It has been estimated that if the major risk factors for chronic diseases were eliminated, at least 80% of all heart disease, stroke and type 2 diabetes, and 40% of all cancer cases would be prevented.



Social determinants of health may influence the burden of chronic burden in Mississippi.

Determinants of health are factors that contribute to a person's current state of health. These factors may be biological, socioeconomic, psychosocial, behavioral, or social in nature. Social determinants of health include such things as education, income, occupation, and access to health care.

Chronic diseases rates are frequently elevated among socioeconomically disadvantaged groups and some minority populations, including blacks and persons with low incomes and education levels. Mississippi has the highest percentage of non-whites (40%) among all 50 states and the population is generally poorer and less educated than the rest of the nation. Further, within Mississippi, social determinants of health differ between racial/ethnic groups.

A higher percentage of blacks live below poverty, have less than a high school education, are unemployed and lack any kind of health care coverage, compared to whites (Figure 5). The demographic profile of Mississippi and the inequalities between blacks and whites may influence the chronic disease burden in the state.

Sociodemographic Snapshot of Mississippi

Source: 2011 U.S. Census Bureau

2,984,926 Residents

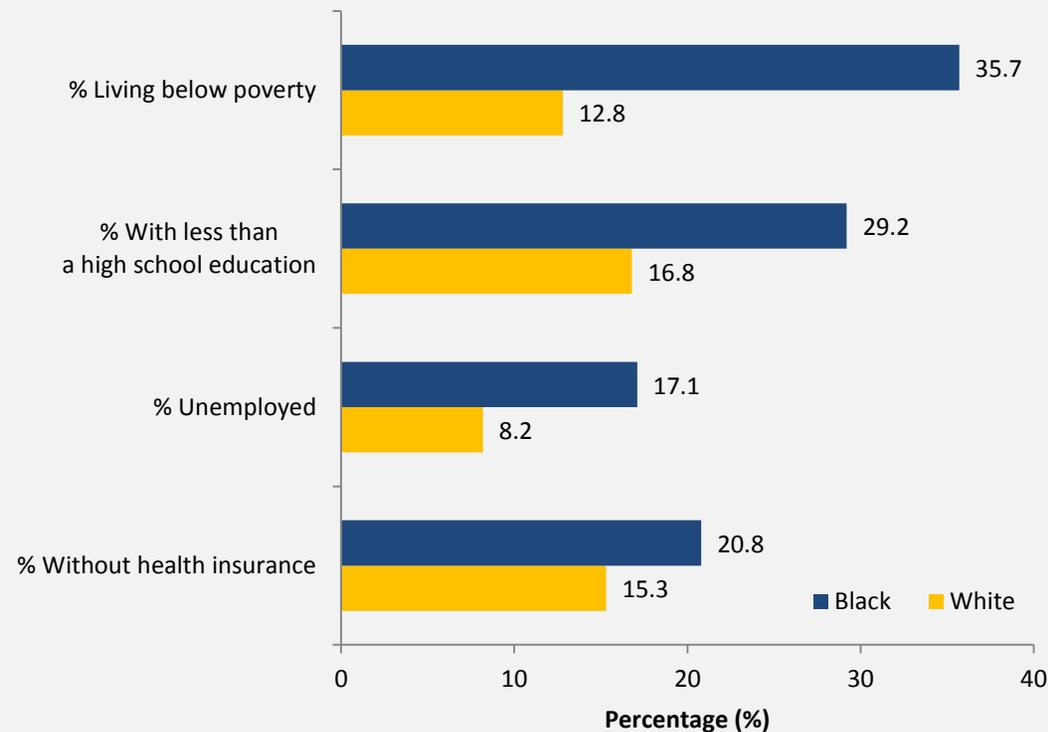
1 in 5 (22%)
live below the poverty level
(14% in the U.S.)

1 in 5 (20%)
have less than a high school education
(15% in the U.S.)

Median Household Income is \$38,718
(Median Household Income in the U.S. is \$52,762)

40% of adults are non-white
(21.1% in the U.S.)

Figure 5. Social determinants vary by race in Mississippi.



In This Report

This report begins with the description and list of health indicators (health conditions, risk factors, and behaviors) identified as being relevant to public health practice and to public health efforts to prevent and control chronic disease and for which surveillance data were available at the state level. The bulk of the report details state-level information for each indicator. Data through the most recent year available and differences between subgroups are illustrated. Accompanying each indicator is a discussion of the importance of the indicator to overall health and highlights of the data, as well as the Healthy People 2020's National Goal and Target, if available .

Many, but not all , of the health measures were selected based on the *Indicators for Chronic Disease Surveillance*, which was developed jointly by the Council of State and Territorial Epidemiologists, the Association of State and Territorial Chronic Disease Program Directors, and the Centers for Disease Control and Prevention (CDC). The Chronic Disease Indicators (CDI) are a cross-cutting set of indicators that were developed by consensus and that allows states, territories and large metropolitan areas to uniformly define, collect, and report chronic disease data that are important to public health practice and available for states, territories and large metropolitan areas . The CDI are divided into eight categories that represent a wide spectrum of conditions and risk factors as well as social context, including: physical activity and nutrition; tobacco and alcohol use; cancer; cardiovascular disease (CVD); diabetes; arthritis; overarching conditions;

and other diseases and risk factors. For more information about the CDI, visit: <http://www.cdc.gov/nccdphp/CDI/overview.htm>.

The tables on the following pages list and define the indicators that were examined and specifies the data source for each indicator. Results related to each chronic disease domain are organized into eight distinct sections within this report:

- *Heart Disease and Stroke*
- *Diabetes*
- *Cancer*
- *Arthritis*
- *Asthma*
- *Oral Health*
- *Nutrition, Physical Activity and Obesity*
- *Tobacco*

There are also special sections focusing on chronic diseases in women of reproductive age and youth. Finally, the results are summarized and a discussion is provided. This is followed by a description of the methods and data sources used.

List of Chronic Disease Indicators, Definitions and Data Sources

Section/Indicator	Definition	Data Source
Heart Disease and Stroke		
High blood pressure awareness	Percentage of adults who report having been told by a health professional of having high blood pressure	BRFSS
High blood cholesterol awareness	Percentage of adults years who report having been told by a health professional of having high blood cholesterol	BRFSS
Cholesterol screening	Percentage of adults aged who report having their cholesterol checked within the previous 5 years	BRFSS
Deaths related to coronary heart disease	Deaths with ICD-10 codes I11, I20–I25 as the underlying cause of death among residents during a calendar year	MS Vital Statistics and CDC Wonder
Deaths related to stroke	Deaths with ICD-10 codes I60–I69 as the underlying cause of death among residents during a calendar year	MS Vital Statistics and CDC Wonder
Diabetes		
Diabetes awareness	Percentage of adults who report having been told by a health professional of having diabetes*	BRFSS
Daily self blood glucose monitoring	Adults with self-reported diabetes* who report self-blood glucose monitoring at least once daily	BRFSS
Diabetes self management class	Adults with self-reported diabetes* who report attending a diabetes self-management class	CDC NDSS
Daily foot examination	Adults with self-reported diabetes* who report having daily foot examinations	CDC NDSS
Annual foot examination	Adults with self-reported diabetes* who report having received at least one clinical foot examination within the previous year	CDC NDSS
Annual dilated eye examination	Adults with self-reported diabetes* who report having received a dilated eye exam within the previous year	CDC NDSS
Annual hemoglobin A1c examination	Adults with self-reported diabetes* who report having ≥ 2 hemoglobin A1c tests in the past year	CDC NDSS
Death related to diabetes	Deaths with ICD-10 codes E10–E14 as an underlying or contributing cause of death among residents during a calendar year	MS Vital Statistics and CDC Wonder

Note: All indicators refer to adults ≥ 18 years of age unless otherwise noted.

Abbreviations: BRFSS=Behavioral Risk Factor Surveillance System; CDC=Centers for Disease Control and Prevention; ICD=International Classification of Diseases; MS=Mississippi; NDSS=National Diabetes Surveillance System.

* Excluding women who were told only when pregnant.

List of Chronic Disease Indicators, Definitions and Data Sources

Section/Indicator	Definition	Data Source
Cancer		
Cancer (all sites combined), death	Deaths with ICD-10 codes C00–C97 as the underlying cause of death among residents during a calendar year	MS Cancer Registry
Cancer of the lung and bronchus, death	Deaths with ICD-10 codes C34 as the underlying cause of death among residents during a calendar year	MS Cancer Registry
Cancer of the prostate, death	Deaths with ICD-10 codes C61 as the underlying cause of death among male residents during a calendar year	MS Cancer Registry
Cancer of the colon and rectum, death	Deaths with ICD-10 codes C18–C20, C26.0 as the underlying cause of death among residents during a calendar year	MS Cancer Registry
Cancer of the female breast, death	Deaths with ICD-10 codes C50 as the underlying cause of death among female residents during a calendar year	MS Cancer Registry
Screening for breast cancer	Percentage of women aged ≥ 50 years who report having had a mammogram within the previous 2 years	BRFSS
Screening for cervical cancer	Percentage of women aged ≥ 18 years who report having had a Papanicolaou (Pap) smear within the previous 3 years	BRFSS
Screening for colorectal cancer	Percentage of adults ≥ 50 years who report having either a fecal occult blood test within the previous year or a sigmoidoscopy or colonoscopy exam within the previous 5 years	BRFSS
Invasive cancer of the female breast, incidence	Incidence based on ICD-0-3 codes C500-C509 and ICD-0-3 histology (type) excluding 9050-9055, 9140, 9590-9992	MS Cancer Registry
Invasive cancer of the colon and rectum, incidence	Incidence based on ICD-0-3 codes C180-C189, C199, C209, C260 and ICD-0-3 histology (type) excluding 9050-9055, 9140, 9590-9992	MS Cancer Registry
Invasive cancer of the cervix, incidence	Incidence based on ICD-0-3 codes C530-C539 and ICD-0-3 histology (type) excluding 9050-9055, 9590-9992	MS Cancer Registry
Arthritis		
Arthritis	Percentage of adults who report having doctor-diagnosed arthritis	BRFSS
Activity limitation due to arthritis	Percentage of adults aged who report doctor-diagnosed arthritis and an activity limitation due to arthritis or joint symptoms	BRFSS

Note: All indicators refer to adults ≥ 18 years of age unless otherwise noted.

Abbreviations: BRFSS=Behavioral Risk Factor Surveillance System; CDC=Centers for Disease Control and Prevention; ICD=International Classification of Diseases; MS=Mississippi.

List of Chronic Disease Indicators, Definitions and Data Sources

Section/Indicator	Definition	Data Source
Asthma		
Ever having asthma	Percentage of adults who were ever told that they have asthma	BRFSS
Asthma episode in past 12 months	Percentage of adults who reported an asthma attack in the past 12 months among adults with asthma	BRFSS
Oral Health		
Visits to dentist or dental clinic	Percentage of adults who report having been to the dentist or dental clinic in the previous year	BRFSS
Any teeth extracted	Percentage of adults ≥ 65 years of age who report having any natural teeth extracted	BRFSS
All teeth extracted	Percentage of adults ≥ 65 years of age who report having all natural teeth extracted	BRFSS
Nutrition, Physical Activity and Obesity		
Obesity	Percentage of adults who have a body mass index ≥ 30.0 kg/m ² calculated from self-reported weight and height	BRFSS
Leisure time physical activity	Percentage of adults who report any leisure time physical activity	BRFSS
Daily fruit/vegetable consumption	Percentage of adults who report eating fruits and vegetables ≥ 1 times/day	BRFSS
Tobacco and Alcohol Use		
Current smoking	Percentage of adults who smoked ≥ 100 cigarettes in their lifetime and are current smokers on every day or some days	BRFSS
Binge drinking	Percentage of adults who report having ≥ 5 drinks (men) or ≥ 4 drinks (women) on ≥ 1 occasion during the previous 30 days	BRFSS

Note: All indicators refer to adults ≥ 18 years of age unless otherwise noted.

Abbreviations: BRFSS=Behavioral Risk Factor Surveillance System; CDC=Centers for Disease Control and Prevention; ICD=International Classification of Diseases; MS=Mississippi.

List of Chronic Disease Indicators, Definitions and Data Sources

Section/Indicator	Definition	Data Source
Special Section on Women of Reproductive Age		
Annual visit to a health care provider	Percentage of women aged 18-44 years who report visiting a doctor for a routine checkup in the past year	BRFSS
Diabetes/Prediabetes	Percentage of women aged 18-44 years who report ever having physician-diagnosed diabetes or prediabetes other than diabetes during pregnancy	BRFSS
High blood pressure	Percentage of women aged 18-44 years who report having been told by a health professional of having high blood pressure	BRFSS
Obesity	Percentage of women aged 18-44 years who have a body mass index ≥ 30.0 kg/m ² calculated from self-reported weight and height	BRFSS
Current cigarette smoking	Percentage of women aged 18-44 years who report having smoked a cigarette on ≥ 1 day during the previous 30 days	BRFSS
Binge drinking	Percentage of women aged 18-44 years who report having ≥ 4 drinks on ≥ 1 occasion during the previous 30 days	BRFSS

Note: All indicators refer to women 18-44 years of age.
 Abbreviations: BRFSS=Behavioral Risk Factor Surveillance System.

List of Chronic Disease Indicators, Definitions and Data Sources

Section/Indicator	Definition	Data Source
Special Section on Youth		
Overweight	Percentage of students who were \geq 85th percentile but $<$ 95th percentile for body mass index*	YRBSS
Obesity	Percentage of students who were \geq 95th percentile for body mass index*	YRBSS
Participation in physical education class	Percentage of students who attended physical education class at least once in an average school week	YRBSS
TV viewing	Percentage of students who report watching television for more than 3 hours on an average school day	YRBSS
Computer use	Percentage of students who report playing video or computer games or using a computer for 3 or more hours/day on an average school day for something that was not school work	YRBSS
Fruit consumption	Frequency of fruit/100% fruit juice consumption among students	YRBSS
Vegetable consumption	Frequency of vegetable consumption among students	YRBSS
Ever tried smoking	Percentage of students who have ever tried cigarette smoking	
Current cigarette smoking	Percentage of students who report having smoked a cigarette on \geq 1 day during the previous 30 days	YRBSS
Current smokeless tobacco use	Percentage of students who report having used smokeless tobacco on \geq 1 day during the previous 30 days	YRBSS
Ever tried alcohol	Percentage of students who have ever tried alcohol	
Current alcohol use	Percentage of students who report consumption of \geq 1 drink of alcohol during the past 30 days	YRBSS
Binge drinking	Percentage of students who report having \geq 5 drinks of alcohol within a couple of hours on \geq 1 day during the past 30 days	YRBSS

Note: All indicators refer to students in grades 9–12.

Abbreviations: YRBSS= Youth Risk Factor Surveillance System.

* Based on sex- and age-specific reference data from the 2000 CDC growth charts.

Definitions of Demographic and Social Determinants of Health Related Variables

Section/Indicator	Definition	Data Source
Socioeconomic Indicators and Social Determinants of Health		
Age	Self-reported age in years	BRFSS
Gender	Self-reported gender	BRFSS
Race/ethnicity	Self-reported race/ethnicity	BRFSS
Education Level	Self-reported highest level of education completed	BRFSS
Federal poverty level	Based on self-reported annual household income and federal guidelines published by Social Security Administration	BRFSS and U.S. Census
Health care coverage	Self-report having any type of health care coverage (yes, no) among adults 18-64 years	BRFSS

Heart Disease and Stroke Indicators

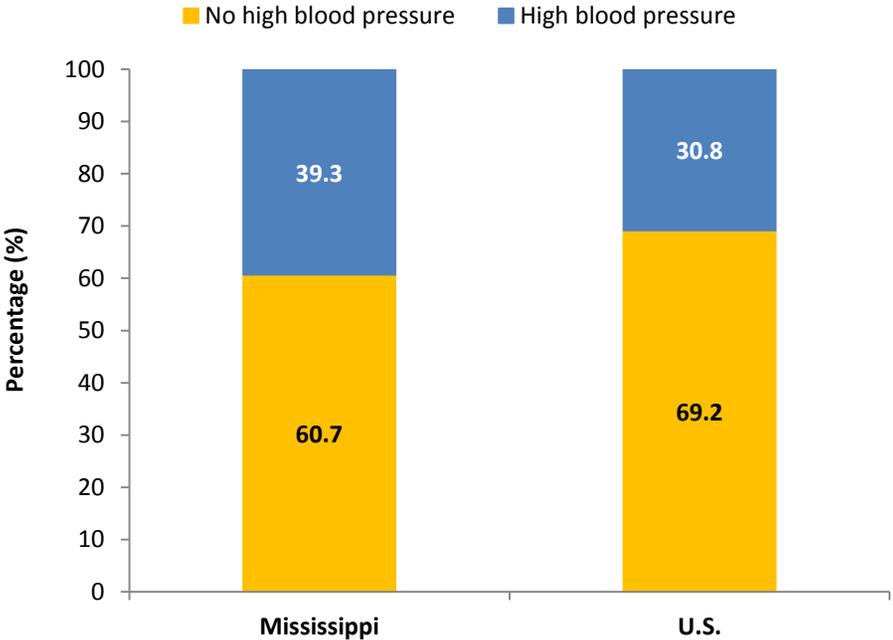
High blood pressure awareness among adults

High blood pressure, also known as hypertension, increases the risk for heart disease and stroke. It is called the "silent killer" because it often has no warning signs. Lifestyle risk factors for high blood pressure include high sodium intake, excessive caloric intake, physical inactivity, and high alcohol consumption.

Healthy People 2020 Goal: Reduce the proportion of adults with high blood pressure

Healthy People 2020 Target: 26.9%

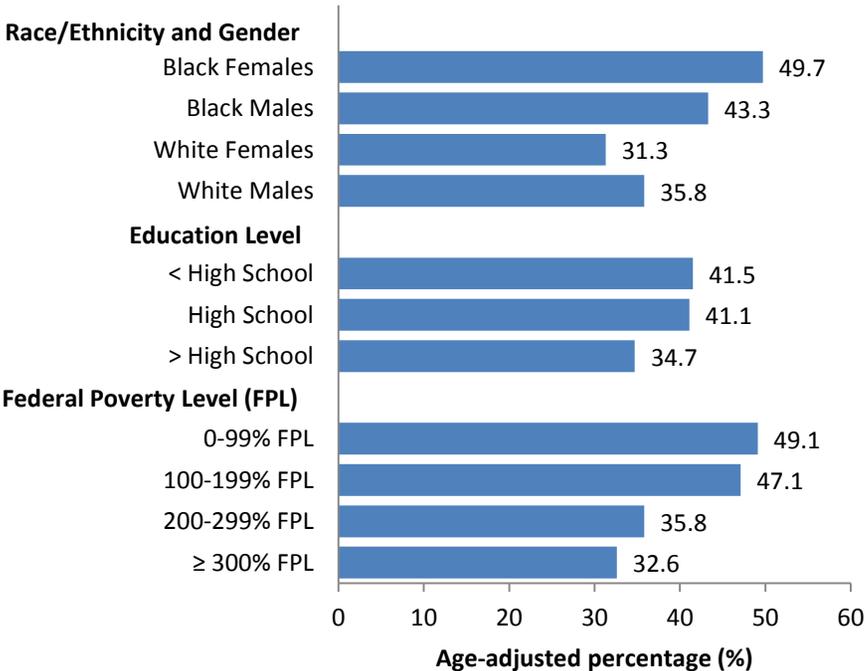
Figure 6. Percentage of adults with and without self-reported high blood pressure, Mississippi and U.S., 2011.



2011 DATA HIGHLIGHTS

- 4 out of 10 adults in Mississippi reported high blood pressure.
- Black females had the highest prevalence of high blood pressure.
- A higher proportion of blacks reported high blood pressure than whites.

Figure 7. Percentage of adults with self-reported high blood pressure among subgroups, Mississippi, 2011.



- Adults with more than a high school education had a lower prevalence of high blood pressure than those with a high school education or less.
- The prevalence of high blood pressure increased as poverty increased. Those living at 0-99% FPL had a 66% higher prevalence of high blood pressure than those living at ≥ 300% FPL.

High blood cholesterol awareness among adults

High blood cholesterol is one of the major modifiable risk factors for heart disease and stroke. As a results, public health agencies and their partners have attempted to reduce the prevalence of high blood cholesterol through screening and by increasing public awareness of high blood cholesterol and strategies for reducing it. Cholesterol levels can be reduced through dietary changes (e.g., reduced intake of saturated fats and dietary cholesterol), increased physical activity, and drug treatment.

Figure 8. Percentage of adults with and without self-reported high blood cholesterol, Mississippi and U.S., 2011.

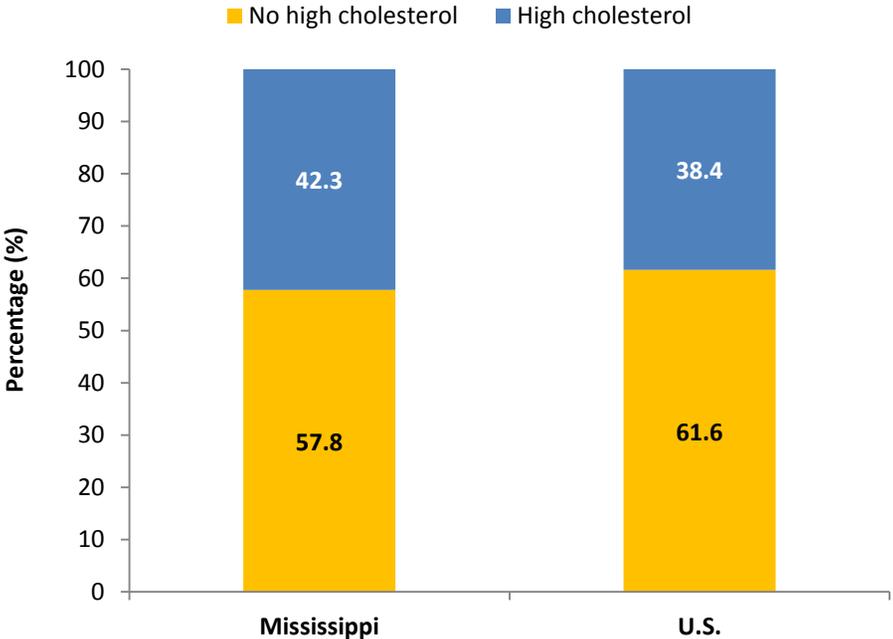
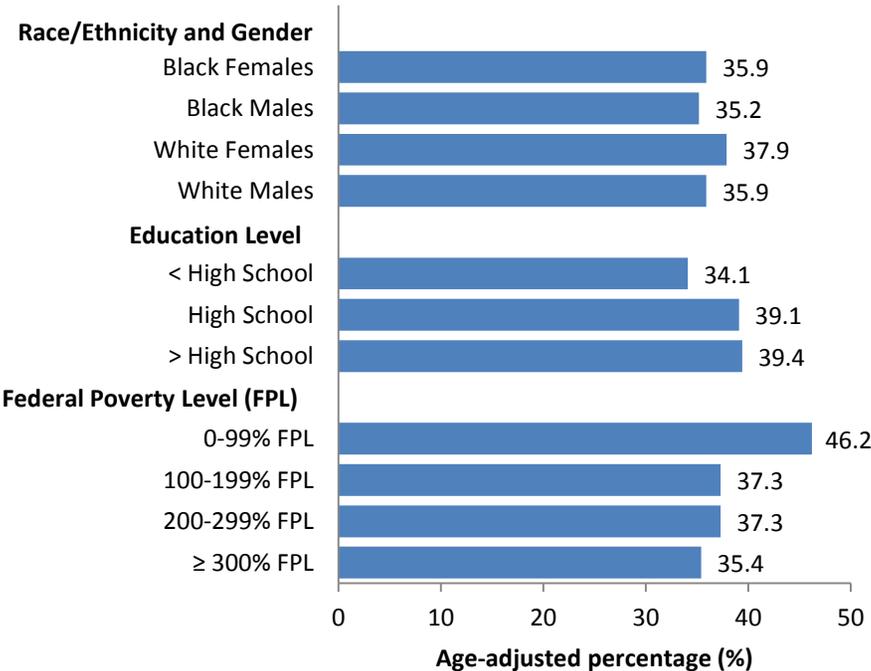


Figure 9. Percentage of adults with self-reported high blood cholesterol among subgroups, Mississippi, 2011.



2011 DATA HIGHLIGHTS

- More than 40% adults in Mississippi reported high blood cholesterol.
- Those living at 0-99% FPL had a higher prevalence of high blood cholesterol than those living at ≥ 300% FPL.
- There were no significant differences by gender, race, or level of education.

Cholesterol screening among adults

High cholesterol usually has no signs or symptoms, however, a simple blood test can tell a person’s cholesterol level. The National Cholesterol Education Program recommends that healthy adults get their cholesterol levels checked every five years.

Healthy People 2020 Goal: Increase the percentage of adults aged 18 years and older had their blood cholesterol checked within the preceding 5 years
Healthy People 2020 Target: 82.1%

Figure 10. Percentage of adults who did and did not have their cholesterol checked within the preceding 5 years, Mississippi and U.S., 2012.

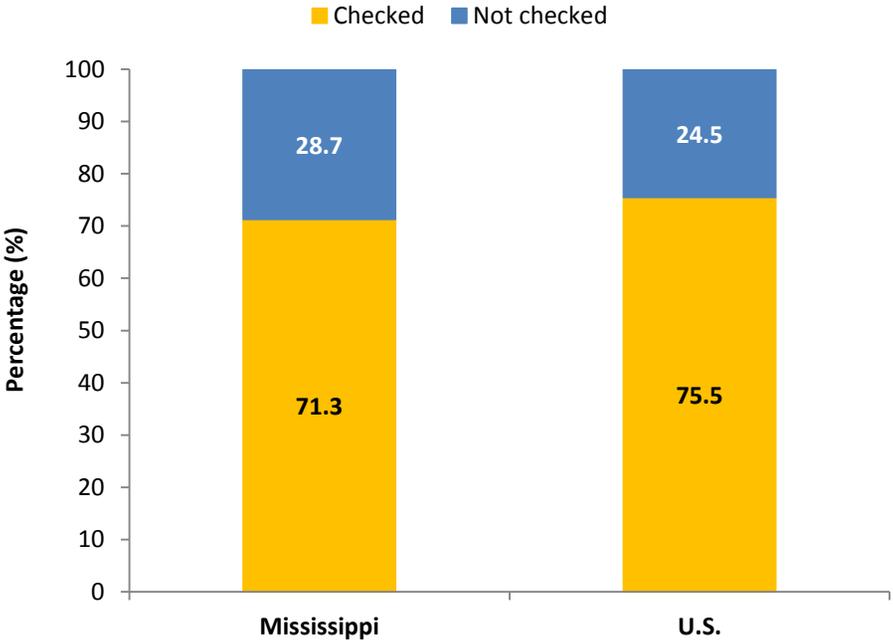
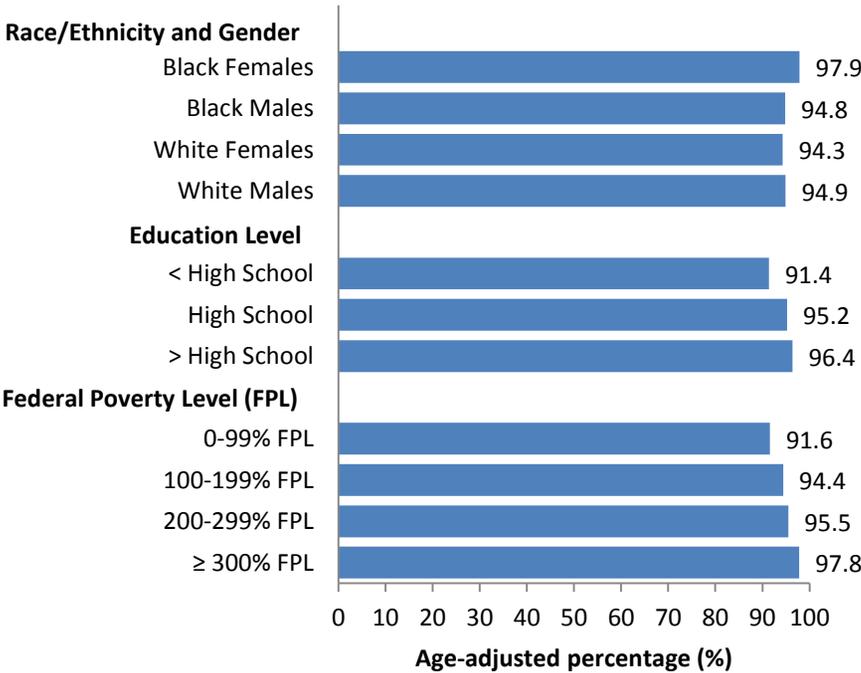


Figure 11. Percentage of adults who had their cholesterol checked within the preceding 5 years among subgroups, Mississippi, 2012.



2012 DATA HIGHLIGHTS

- Just over 70% of adults in Mississippi had their blood cholesterol checked within the preceding 5 years. This is below the Healthy People 2020 target of 82.1%.

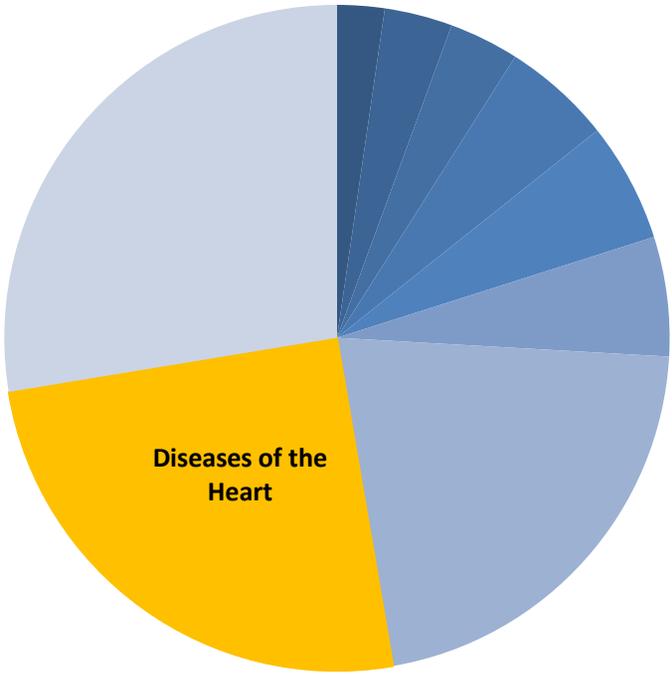
- No differences were seen by race, gender, education or poverty level.

Deaths related to coronary heart disease

During 2011, heart disease was the leading cause of death in Mississippi, accounting for 25% of all deaths. Modifiable risk factors for heart disease include behaviors (e.g., tobacco use, physical inactivity), health status (e.g., hypertension, overweight, diabetes), and public health policies (e.g., tobacco free laws).

Healthy People 2020 Goal: Reduce coronary heart disease deaths
Healthy People 2020 Target: 100.8 deaths per 100,000

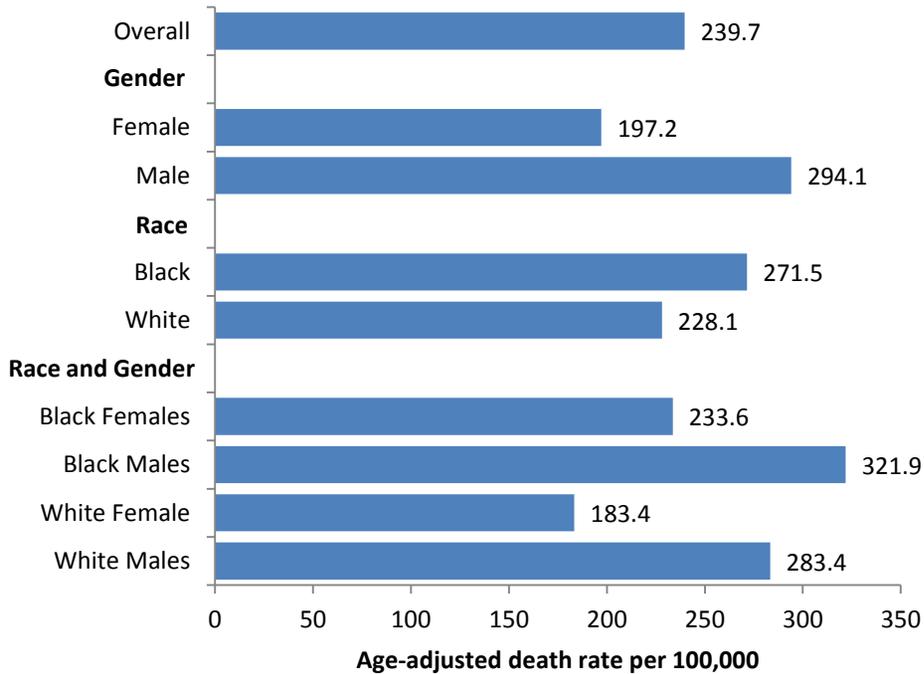
Leading causes of death in Mississippi, 2011.



2011 DATA HIGHLIGHTS

- In 2011, the age-adjusted death rate related to heart disease in MS was 239.7 per 100,000 persons.
- Black males had the highest death rate due to heart disease (321.9 per 100,000).

Figure 12. Age-adjusted death rate related to heart disease among subgroups, Mississippi, 2011.



- The death rate related to heart disease was about 1.5 times higher for males than females.
- The death rate related to heart disease was nearly 20% higher for blacks than whites.

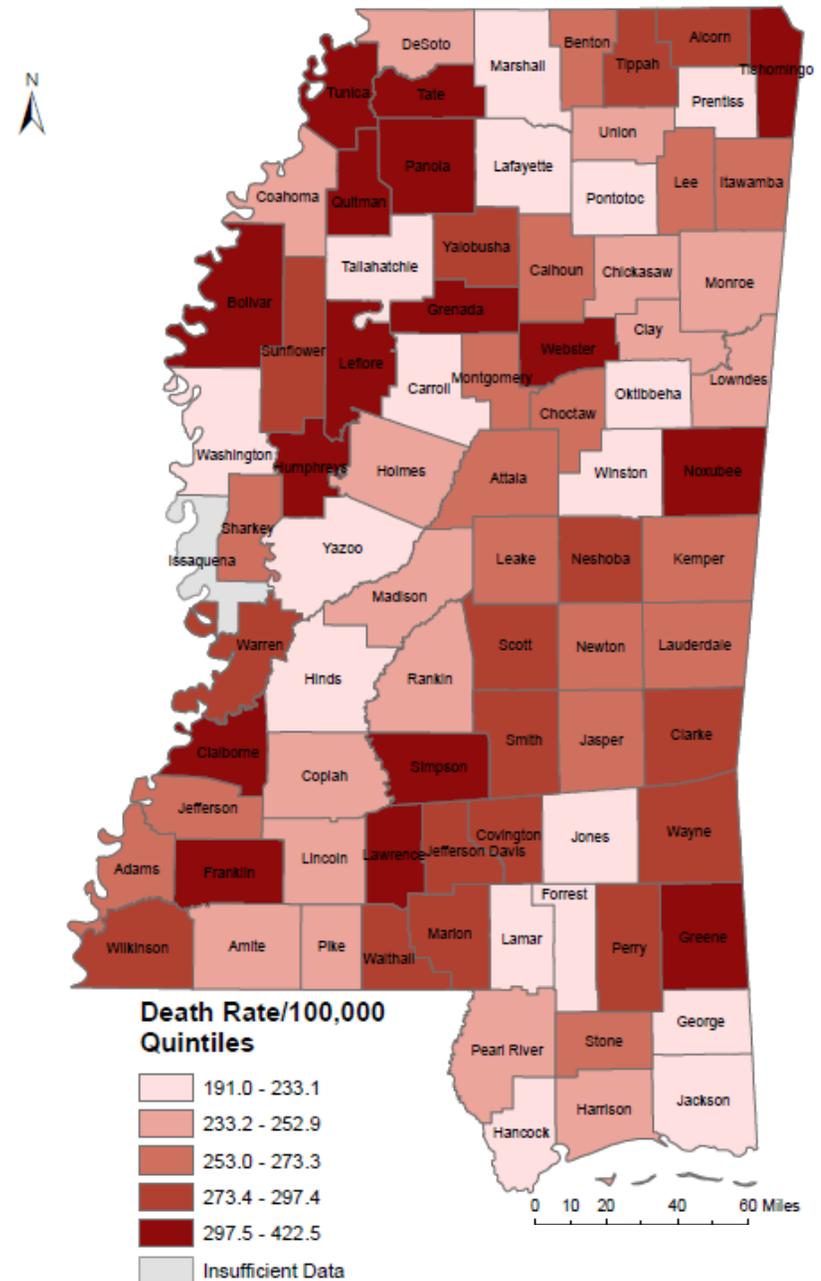
Deaths related to coronary heart disease (continued)

2007-2011 DATA HIGHLIGHTS

- For the years 2007-2011, the overall age-adjusted death rate due to heart disease for the state was 251.6 deaths per 100,000.
- Geographic differences exist; the death rate ranged from a low of 191.0 deaths per 100,000 (Pontotoc) to a high of 422.5 deaths per 100,000 (Tunica).
- Several of the counties with the highest death rates due to heart disease were clustered in the Northwest part of the state.
- The counties with the 10 highest death rates due to heart disease were:

<u>Rank</u>	<u>County</u>	<u>Death rate per 100,000</u>
1	Tunica	422.5
2	Quitman	379.5
3	Leflore	341.1
4	Humphreys	336.7
5	Panola	331.9
6	Claiborne	330.8
7	Greene	328.1
8	Webster	324.7
9	Noxubee	324.5
10	Tishomingo	319.0

Figure 13. Age-adjusted death rates due to heart disease by county, 2007-2011.



Source: Mississippi Vital Statistics: The Mississippi Statistically Automated Health Resource System (MSTAHRs), 2012

Deaths related to stroke

During 2010, stroke was the 5th leading cause of death in the Mississippi. Modifiable risk factors for stroke include behaviors (e.g., tobacco use, physical inactivity, and improper nutrition) and health status (e.g., untreated hypertension, hyperlipidemia, overweight, or diabetes).

Healthy People 2020 Goal: Reduce stroke deaths
Healthy People 2020 Target: 33.8 deaths per 100,000

Leading causes of death in Mississippi, 2011.

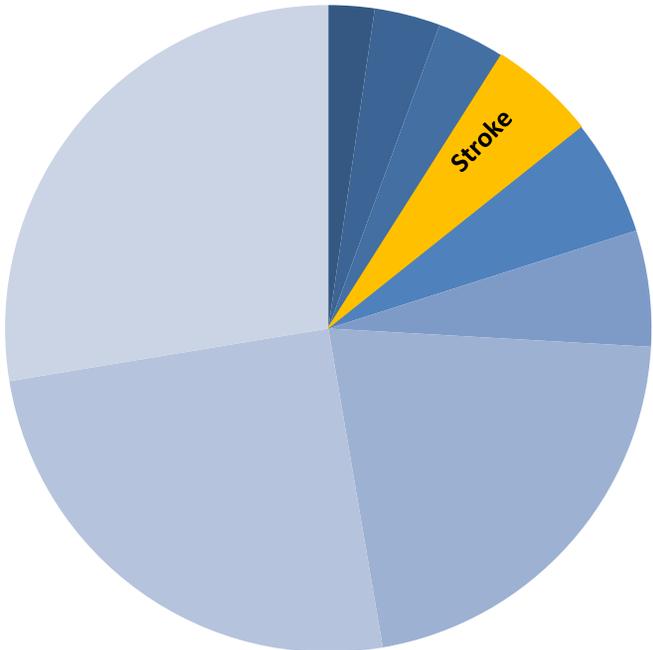
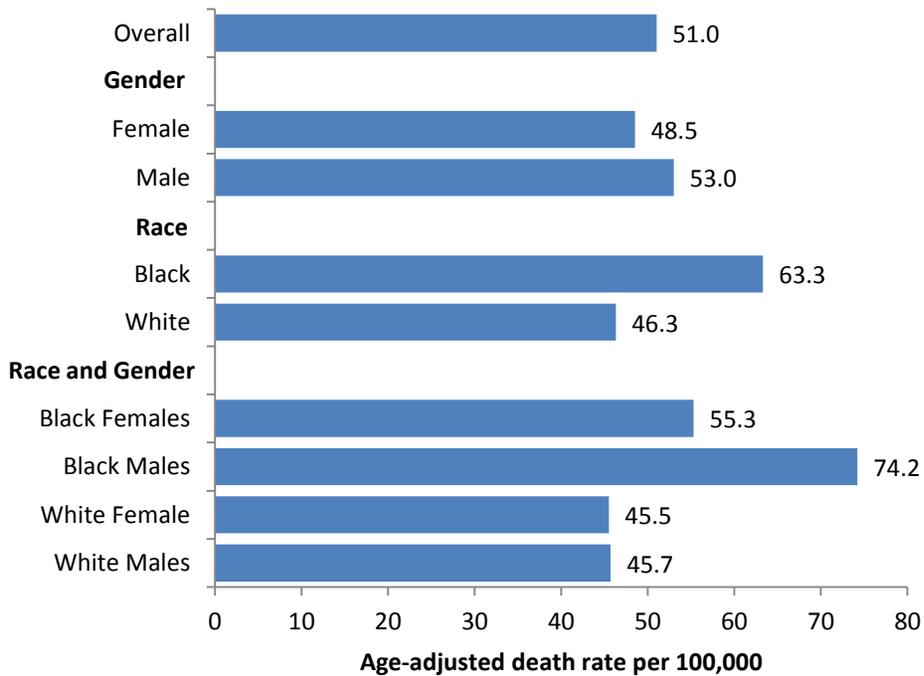


Figure 14. Age-adjusted death rate related to stroke by race and gender, Mississippi, 2010.



2011 DATA HIGHLIGHTS

- In 2011, the age-adjusted death rate related to stroke in MS was 51 deaths per 100,000 persons.
- Black males had the highest death rate due to stroke (74.2 deaths per 100,000).
- The death rate related to stroke was higher for males than females.
- The death rate related to stroke was higher for blacks than whites.

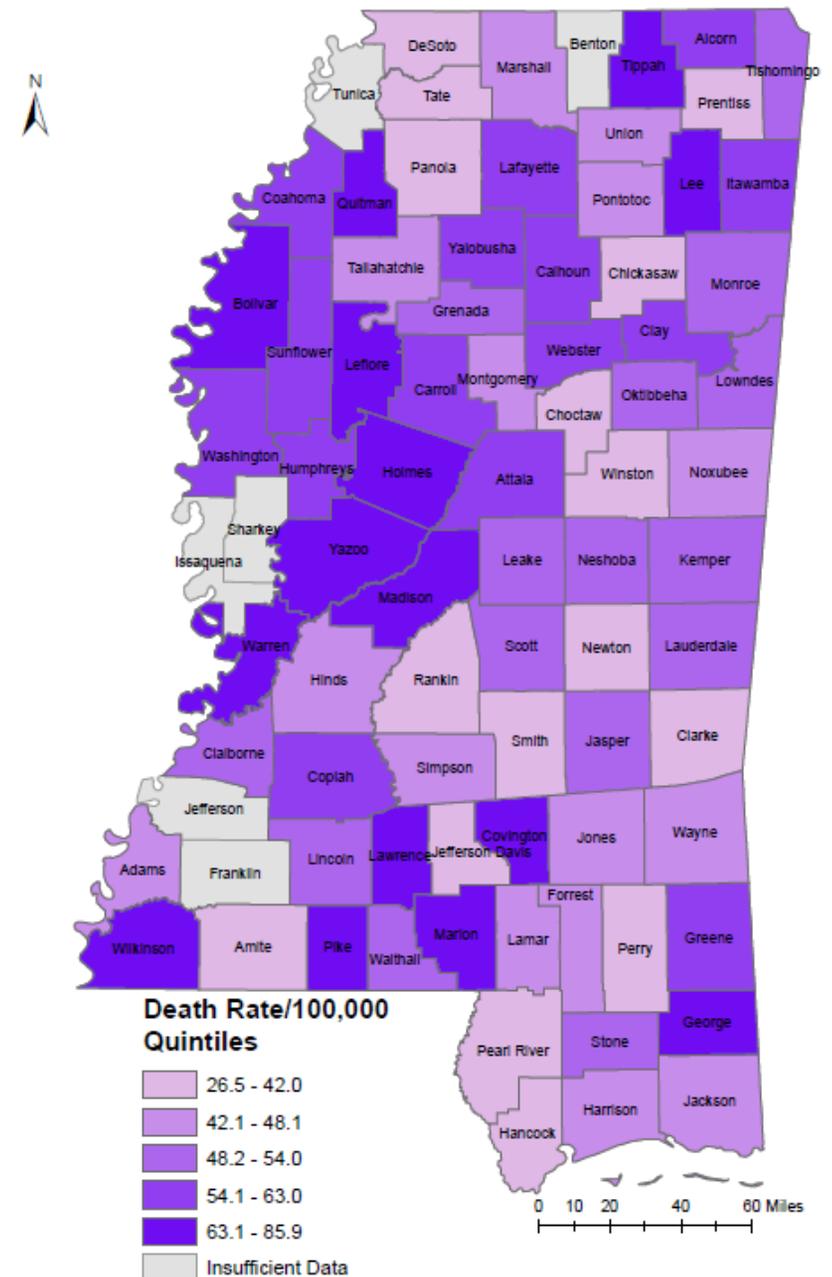
Deaths related to stroke (continued)

2007-2011 DATA HIGHLIGHTS

- For the years 2007-2011, the overall age-adjusted death rate due to stroke for the state for was 51.0 deaths per 100,000.
- Geographic differences exist; the death rates ranged from a low of 26.5 deaths per 100,000 (Hancock) to a high of 85.9 deaths per 100,000 (Tippah).
- Several of the counties with the highest death rates due to stroke were clustered in the Northwest part of the state.
- The counties with the 10 highest death rates due to stroke were:

<u>Rank</u>	<u>County</u>	<u>Death rate per 100,000</u>
1	Tippah	85.9
2	Bolivar	81.5
3	Leflore	81.2
4	Covington	80.8
5	Quitman	79.4
6	George	79.3
7	Wilkinson	79.2
8	Lawrence	77.8
9	Holmes	76.7
10	Marion	69.9

Figure 15. Age-adjusted death rates due to stroke by county, 2007-2011.



Source: Mississippi Vital Statistics: The Mississippi Statistically Automated Health Resource System (MSTAHRs), 2012

Diabetes Indicators

Diabetes awareness among adults

Diabetes is a group of diseases marked by high levels of blood glucose resulting from defects in insulin production, insulin action, or both. Diabetes can lead to serious complications, including heart disease, blindness, kidney failure, and lower-extremity amputations, and premature death.

Figure 16. Percentage of adults with and without self-reported diabetes, Mississippi and U.S., 2012.

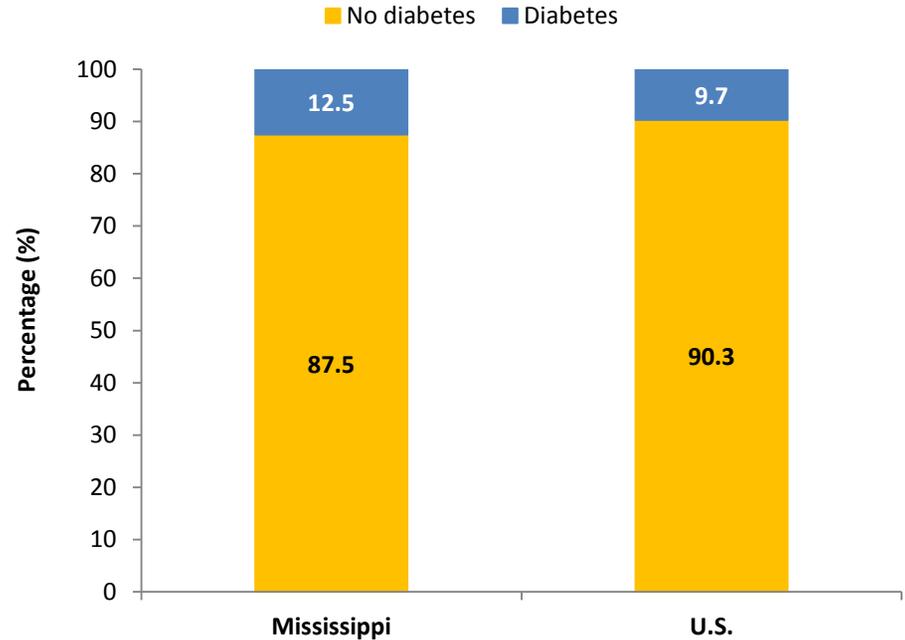
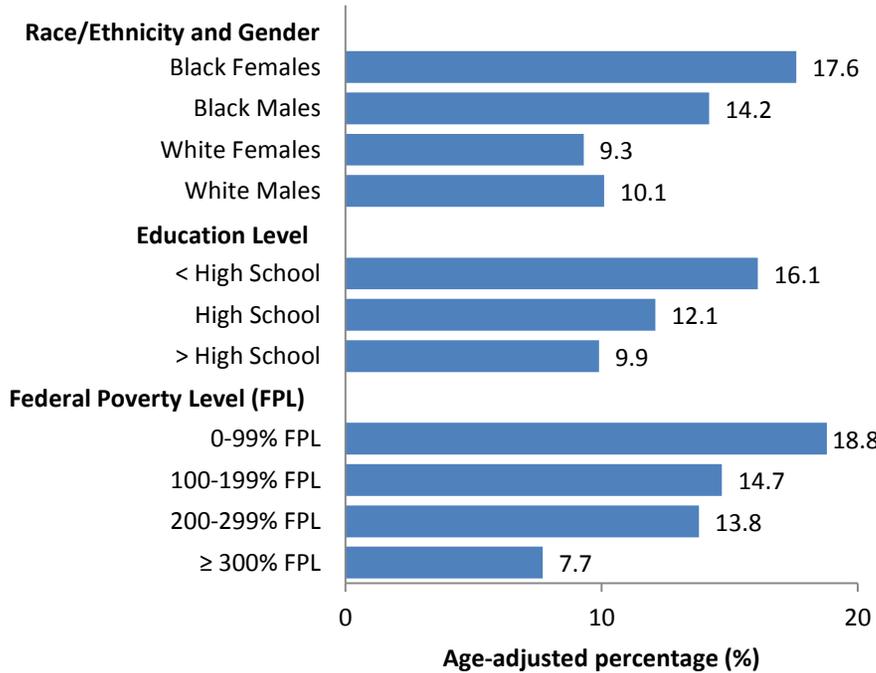


Figure 17. Percentage of adults with self-reported diabetes among subgroups, Mississippi, 2012.



2012 DATA HIGHLIGHTS

- The prevalence of self-reported diabetes among adults was higher in Mississippi than the U.S.
- Black females reported the highest prevalence of diabetes.
- A higher proportion of blacks reported diabetes than whites.
- The prevalence of diabetes decreased with increasing education.
- The prevalence of diabetes increased with increasing poverty; the prevalence of diabetes was 2.5 times higher among adults living at 0-99% FPL compared to adults living at ≥ 300% FPL.

Preventive measures among adults with diabetes

Multiple long-term complications of diabetes can be prevented through improved patient education and self-management and provision of adequate and timely screening services and medical care, such as glucose, lipid, and blood pressure regulation, as well as screening and treatment for eye and foot abnormalities.

2009 DATA HIGHLIGHTS

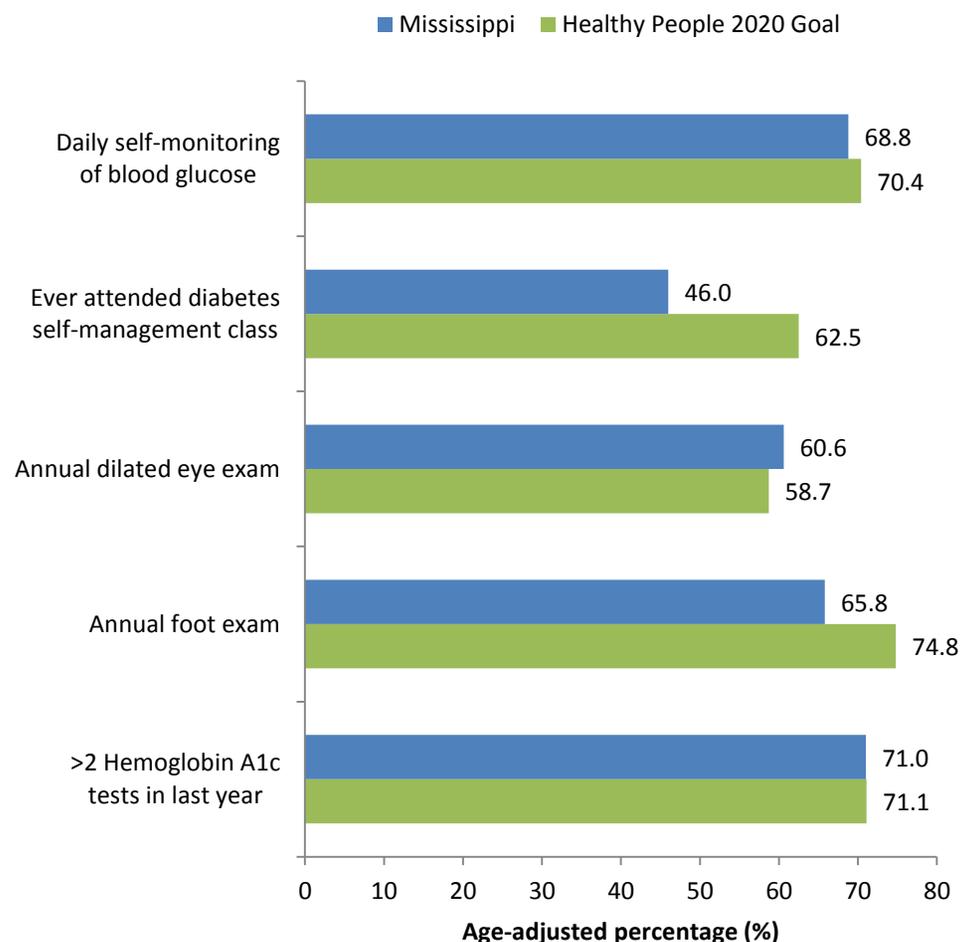
Among Mississippi adults with self-reported diabetes:

- Over two-thirds self-monitor their blood glucose on daily basis;
- Less than half ever attended a diabetes self-management class;
- 60% and 65% received an annual dilated eye and foot exam, respectively; and
- 7 out of 10 had ≥ 2 hemoglobin A1c tests in the past year.

Mississippi adults with diabetes seem to be on target for meeting the Healthy People 2020 goals for:

- Daily self-monitoring for blood glucose;
- Having an annual dilated eye exam; and
- Having > 2 annual hemoglobin A1c tests.

Figure 18. Percentage of Mississippi adults with diabetes who have undergone screening tests and the Healthy People 2020 goals for these screening tests.



Source: Centers for Disease Control and Prevention: National Diabetes Surveillance System: <http://www.cdc.gov/diabetes/statistics>.

Deaths related to diabetes

During 2011, diabetes was the 8th leading cause of death in Mississippi, accounting for over 3% of deaths.

Healthy People 2020 Goal: Reduce the diabetes death rate

Healthy People 2020 Target: 65.8 deaths per 100,000

Leading causes of death in Mississippi, 2011.

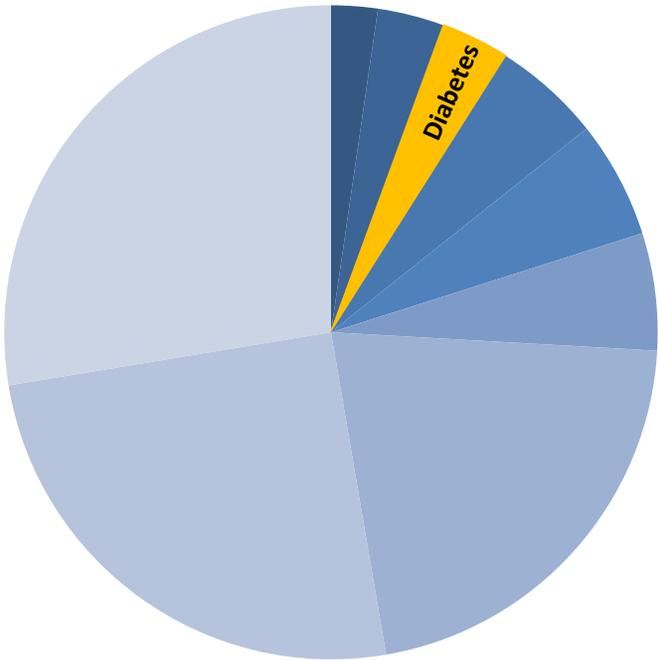
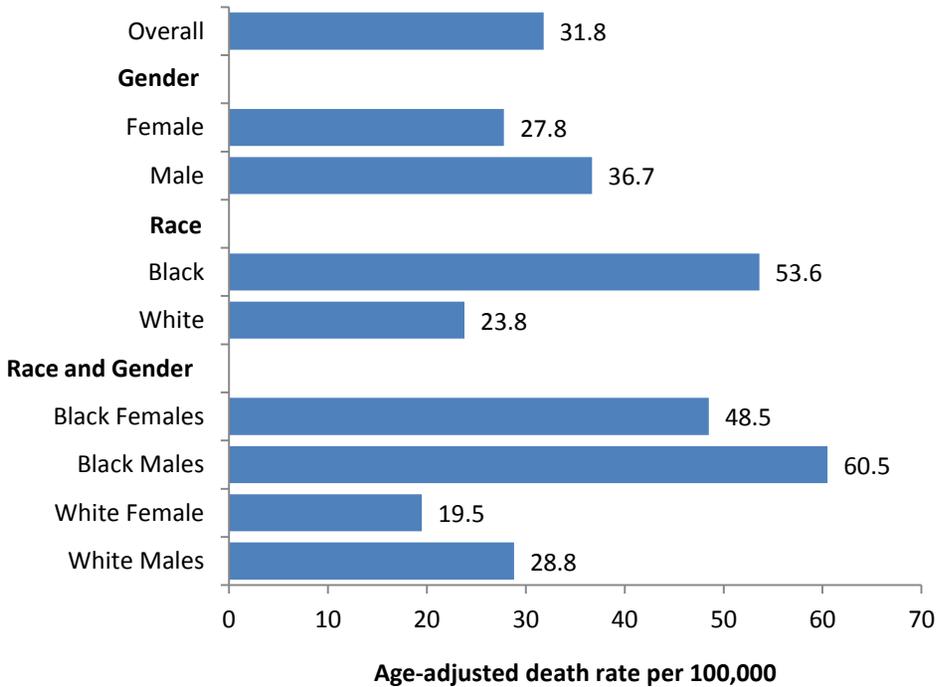


Figure 19. Age-adjusted death rate related to diabetes among subgroups, Mississippi, 2010.



2011 DATA HIGHLIGHTS

- In 2011, the age-adjusted death rate related to diabetes in Mississippi was 31.8 deaths per 100,000 persons.
- Black males had the highest death rate due to diabetes (60.5 deaths per 100,000).
- The death rate related to diabetes was 32% higher for males than females.
- The death rate related to diabetes was more than twice as high among blacks than whites.

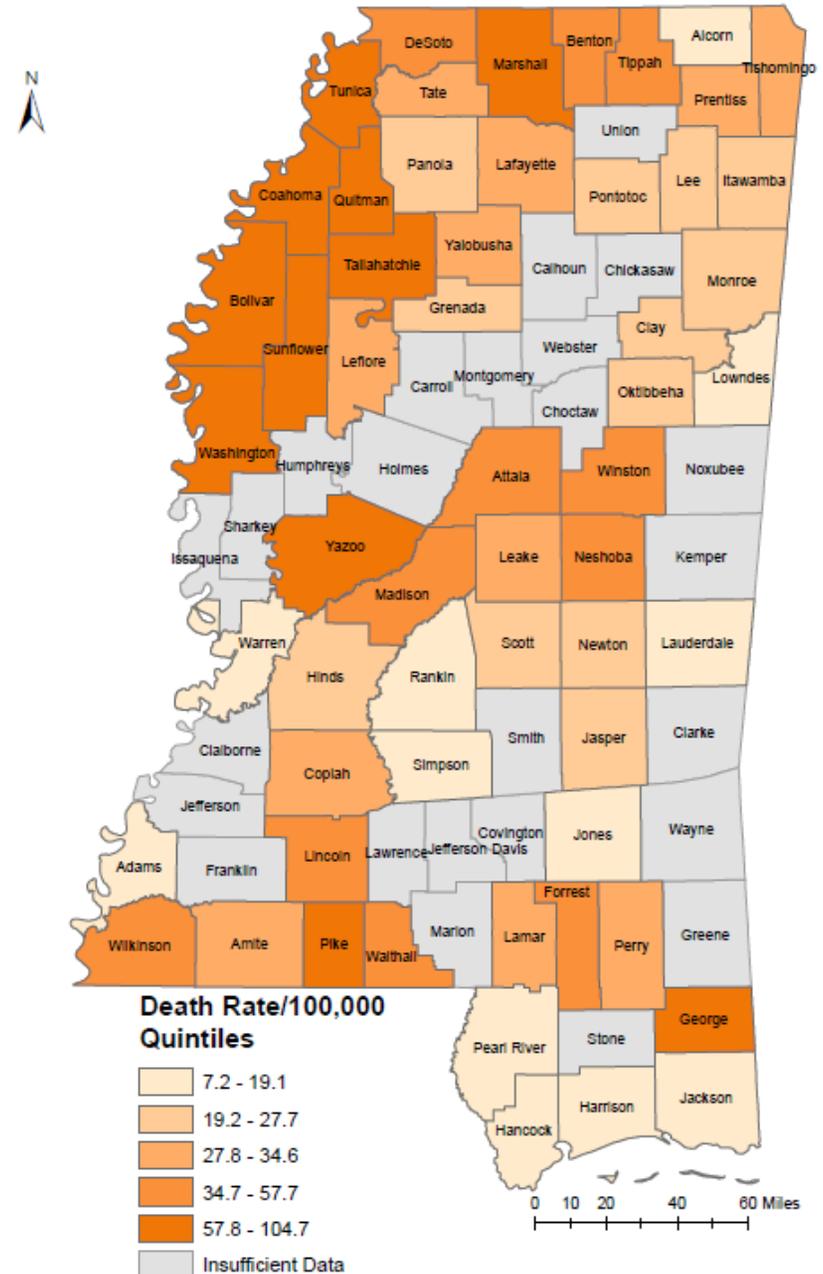
Deaths related to diabetes (continued)

2007-2011 DATA HIGHLIGHTS

- From 2007-2011, the overall age-adjusted death rate due to diabetes for the state was 27.4 deaths per 100,000.
- Geographic differences exist; the death rate ranged from a low of 7.2 deaths per 100,000 (Harrison county) to 104.7 deaths per 100,000 (Sunflower).
- Several of the counties with the highest death rates due to diabetes were clustered in the Northwest part of the state.
- The counties with the highest death rate due to diabetes were:

<u>Rank</u>	<u>County</u>	<u>Death rate per 100,000</u>
1	Sunflower	104.7
2	George	86.3
3	Coahoma	82.8
4	Pike	82.5
5	Tunica	81.8
6	Yazoo	80.4
7	Bolivar	73.9
8	Marshall	68.4
9	Washington	64.5
10	Quitman	63.7

Figure 20. Age-adjusted death rates due to diabetes by county, 2007-2011.



Source: Mississippi Vital Statistics: The Mississippi Statistically Automated Health Resource System (MSTAHRs), 2012

Cancer Indicators

Cancer

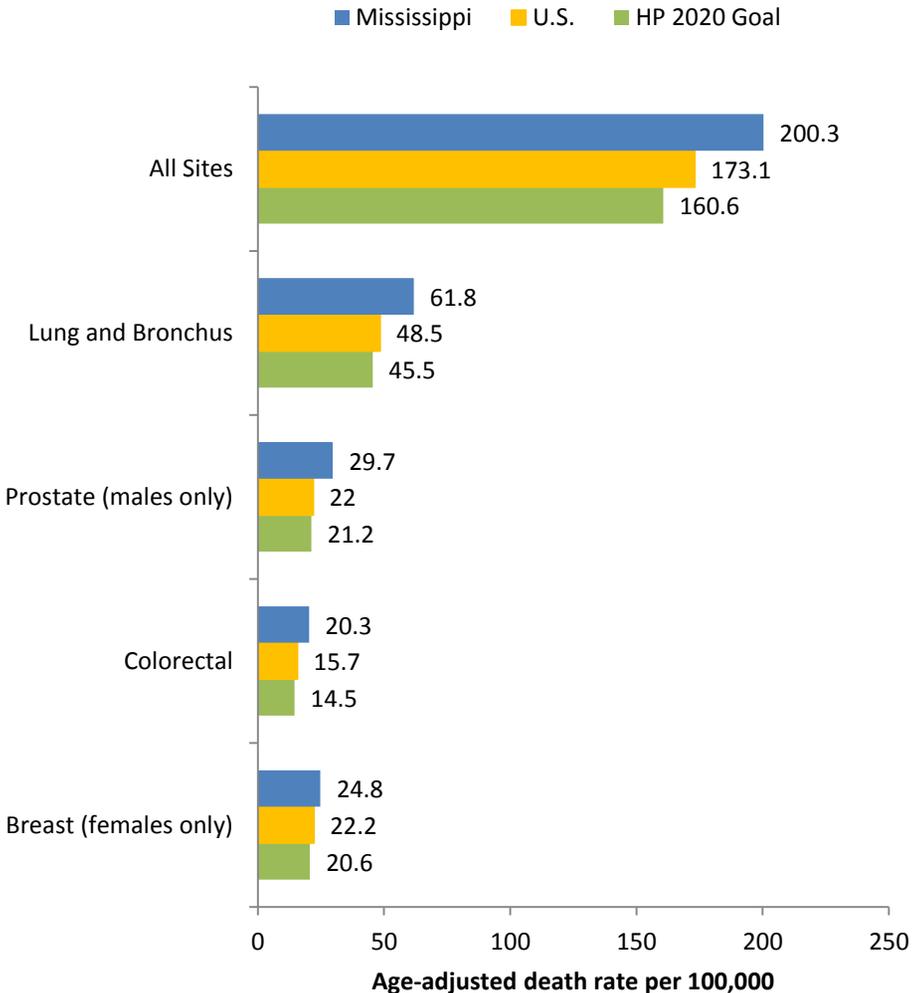
Each year, more than 13,000 Mississippians are diagnosed with cancer and about 6,000 die from cancer, making it the second leading cause of death in Mississippi. However, the number of new cancer cases can be reduced, and many cancer deaths can be prevented. Screening for cervical, colorectal, and breast cancers - some of the most common types of cancers - helps find these diseases at an early, often highly treatable stage. The Healthy People objectives for 2020 highlight the importance of monitoring the incidence of invasive cancer (cervical and colorectal) and late-stage breast cancer, which are intermediate markers of cancer screening success.

DATA HIGHLIGHTS

The death rate is higher in Mississippi compared to the United States for all sites, lung and bronchus, prostate, colorectal and female breast.

Death rates in Mississippi are higher than the Healthy People 2020 Goals.

Figure 21. Death rates due to cancer in Mississippi (2010) and the U.S. (2009) and the Healthy People 2020 Goal.



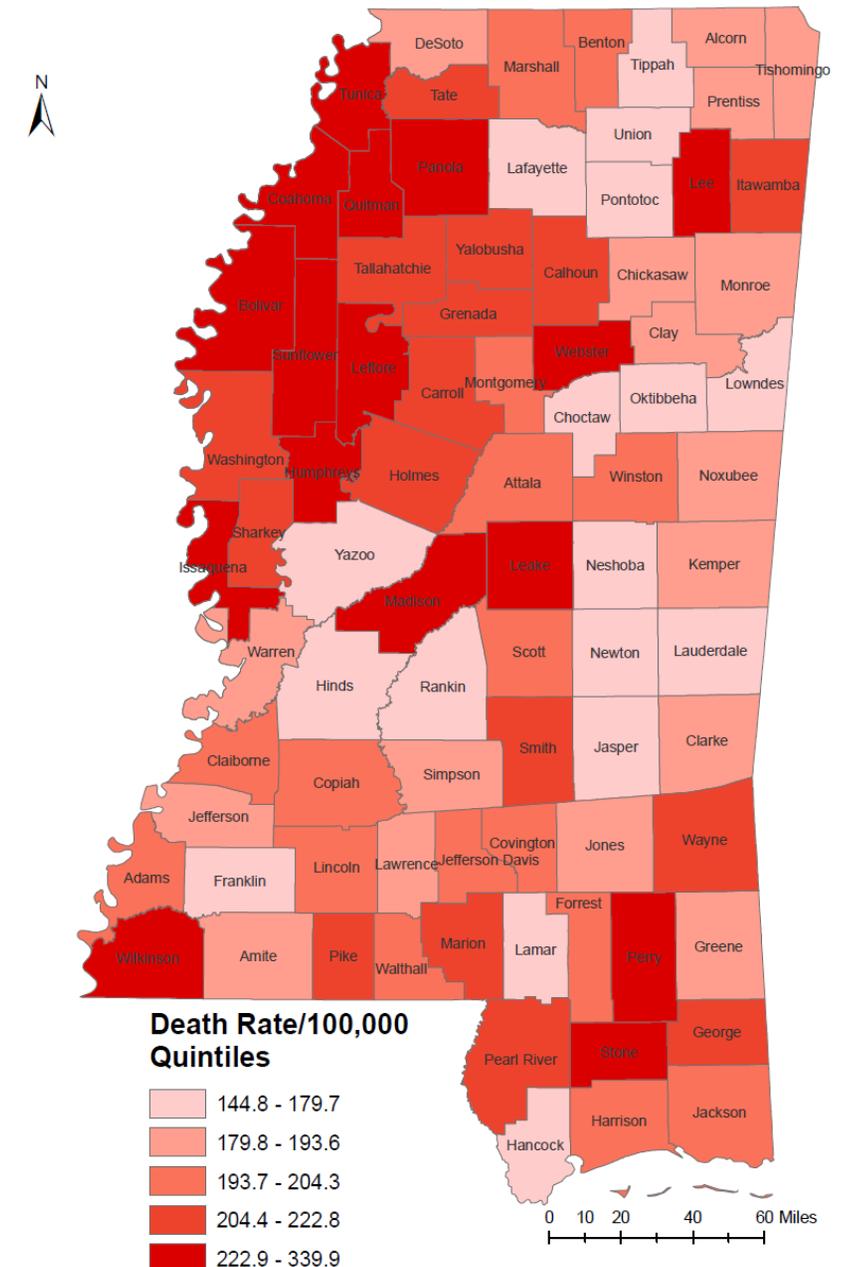
Death related to cancer (all sites)

2007-2011 DATA HIGHLIGHTS

- For the years 2007-2011, the overall age-adjusted death rate due to cancer for the state was 198.5 deaths per 100,000.
- Geographic differences exist; the death rate ranged from a low of 144.8 deaths per 100,000 (Union county) to 339.9 deaths per 100,000 (Madison).
- The counties in the Northwest part of the state generally had the highest death rates due to cancer.
- The counties with the highest death rate due to cancer were:

<u>Rank</u>	<u>County</u>	<u>Death rate per 100,000</u>
1	Madison	339.9
2	Lee	272.9
3	Coahoma	261.6
4	Wilkinson	256.5
5	Leake	243.8
6	Quitman	237.7
7	Leflore	237.1
8	Humphreys	235.5
9	Stone	234.8
10	Perry	234.1

Figure 22. Age-adjusted death rates due to cancer by county, 2007-2011.



Note: The death rate for Madison county may not be a true reflection due to hospices operated in that county. Please interpret with caution.

Source: Mississippi Vital Statistics: The Mississippi Statistically Automated Health Resource System (MSTAHRs), 2012

Cancer screenings

Getting screening tests regularly may find cancers early, when treatment is likely to work best.

Breast Cancer – Mammography

Healthy People 2020 Goal: Increase the proportion of women who receive a breast cancer screening based on the most recent guidelines

Healthy People 2020 Target: 81%

- 3 out of 4 women aged 40 years or older in Mississippi received breast cancer screening in the past 2 years.

Cervical Cancer - Pap test

Healthy People 2020 Goal: Increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines

Healthy People 2020 Target: 93.0%

- Approximately 77% of women aged 18 years or older in Mississippi received cervical cancer screening in the past 2 years.

Colorectal Cancer

Healthy People 2020 Goal: Increase the proportion of adults who receive a colorectal cancer screening based on the most recent guidelines in 2008

Healthy People 2020 Target: 70.5%

- One third of adults aged 50 years or older in Mississippi ever had a sigmoidoscopy or colonoscopy.

- Less than 10% of adults aged 50 years or older in Mississippi had a blood stool test in the past 2 years.

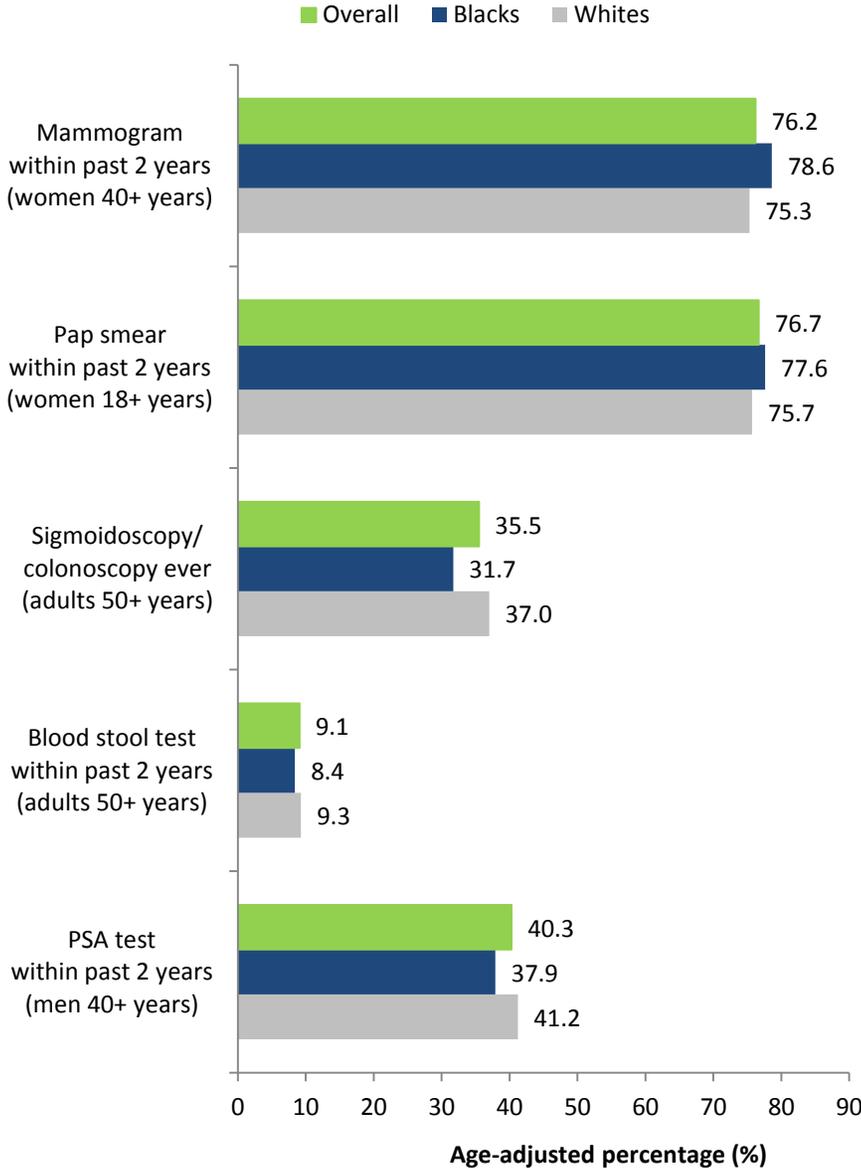
Prostate Cancer - PSA test

Healthy People 2020 Goal: None

Healthy People 2020 Target: None

- 40% of men aged 40 years or older in Mississippi had a PSA test in the past 2 years.

Figure 23. Percentage of adults who have undergone cancer screening tests, Mississippi, 2012.



Cancer incidence

The Healthy People objectives for 2020 highlight the importance of monitoring the incidence of invasive cancer (cervical and colorectal) and late-stage breast cancer, which are intermediate markers of cancer screening success.

Incidence of late-stage female breast cancer

Healthy People 2020 Goal: Reduce late-stage female breast cancer
Healthy People 2020 Target: 41.0 new cases per 100,000 females

In 2010, the incidence of late-stage female breast cancer in Mississippi was approximately 113 per 100,000 females .

Incidence of colorectal cancer

Healthy People 2020 Goal: Reduce invasive colorectal cancer
Healthy People 2020 Target: 38.6 new cases per 100,000 population

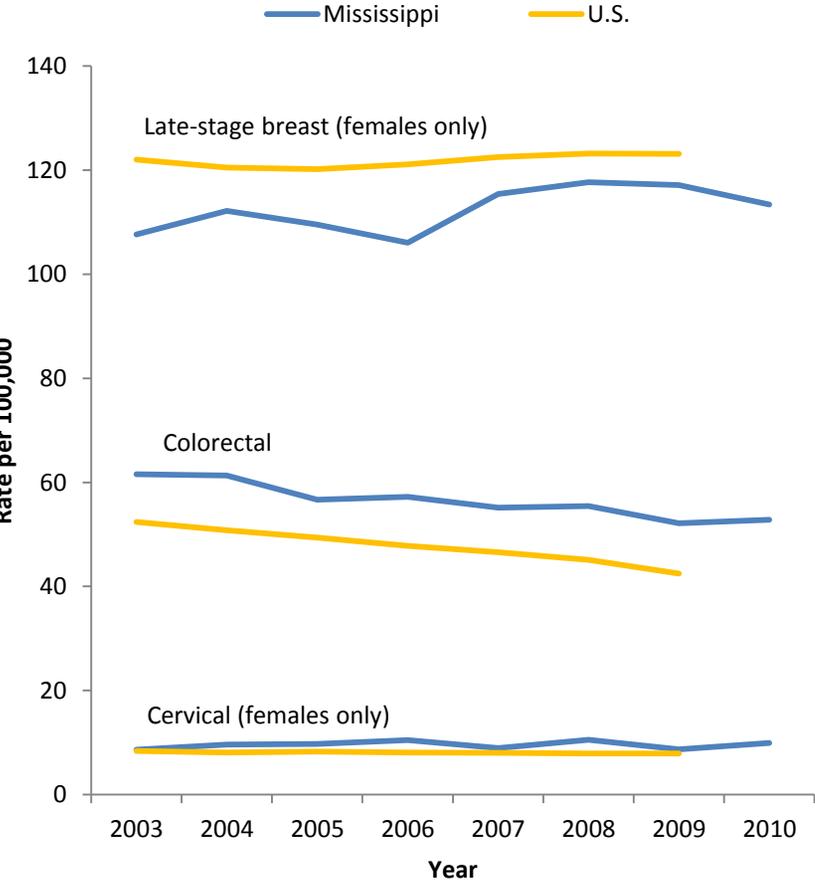
In 2010, the incidence of colorectal cancer in Mississippi was approximately 53 per 100,000 population.

Incidence of cervical cancer

Healthy People 2020 Goal: Reduce invasive uterine cervical cancer
Healthy People 2020 Target: 7.1 new cases per 100,000 females

In 2010, the incidence of cervical cancer in Mississippi was approximately 10 per 100,000 females.

Figure 24. Incidence rate per 100,000 for late-stage breast, colorectal and cervical cancer, Mississippi and U.S., 2003-2010.



Arthritis Indicators

Arthritis among adults

Arthritis includes more than 100 different rheumatic diseases and conditions, the most common of which is osteoarthritis. Arthritis is the nation’s most common cause of disability. Annual direct and indirect costs associated with arthritis are estimated to be about \$1.5 billion.

Figure 25. Percentage of adults with and without arthritis, Mississippi and U.S., 2012.

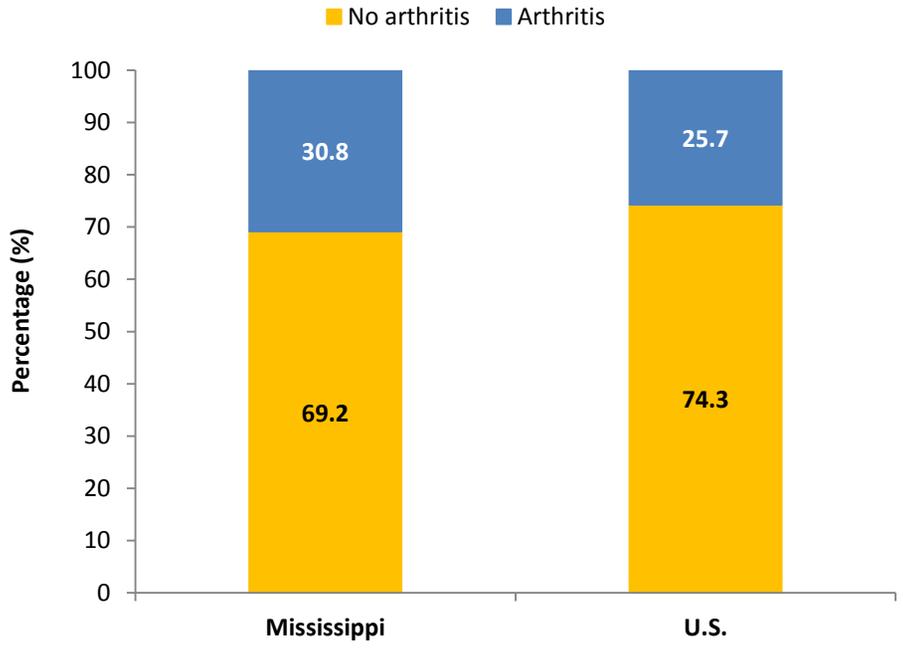
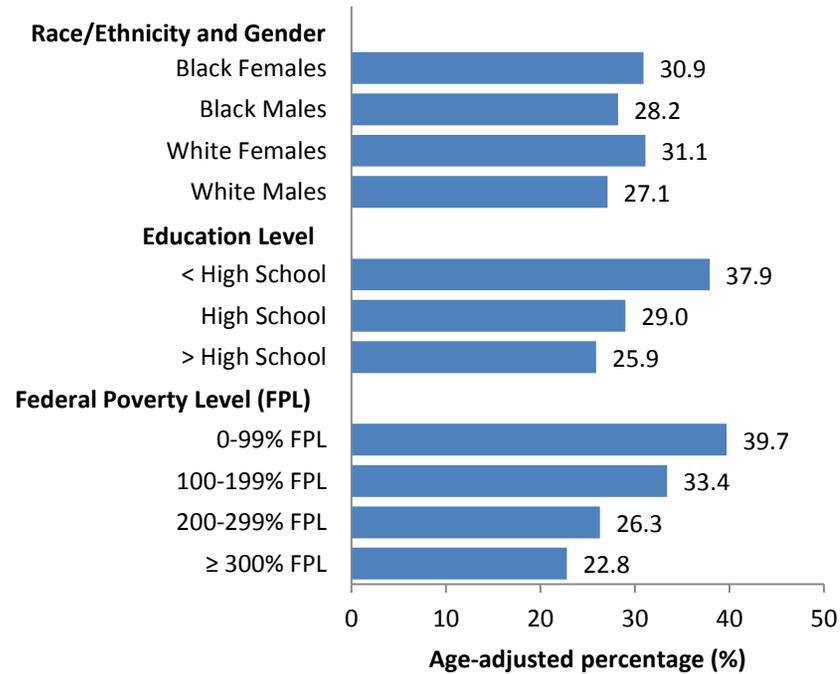


Figure 26. Percentage of adults with arthritis among subgroups, Mississippi, 2012.



2012 DATA HIGHLIGHTS

- Nearly 1 in 3 adults in Mississippi reported arthritis.
- The prevalence generally increased with increasing poverty; the percentage of adults living below poverty reporting arthritis was 80% higher compared to adults living at ≥ 300% poverty.
- The prevalence generally decreased with increasing education; the prevalence of arthritis among adults without a high school education was 50% higher compared to adults with a high school education.
- There were no significant differences by race or gender.

Activity limitation due to arthritis among adults

For people with arthritis, physical activities such as walking, bicycling, and swimming can have many benefits. These benefits include less pain and better physical function, mental health, and quality of life. However, activity limitation due to arthritis is a common problem.

Healthy People 2020 Goal: Reduce the proportion of adults with doctor-diagnosed arthritis who experienced a limitation in activity due to arthritis
Healthy People 2020 Target: 35.5%

Figure 27. Percentage of adults with arthritis who experienced activity limitation, Mississippi, 2011.

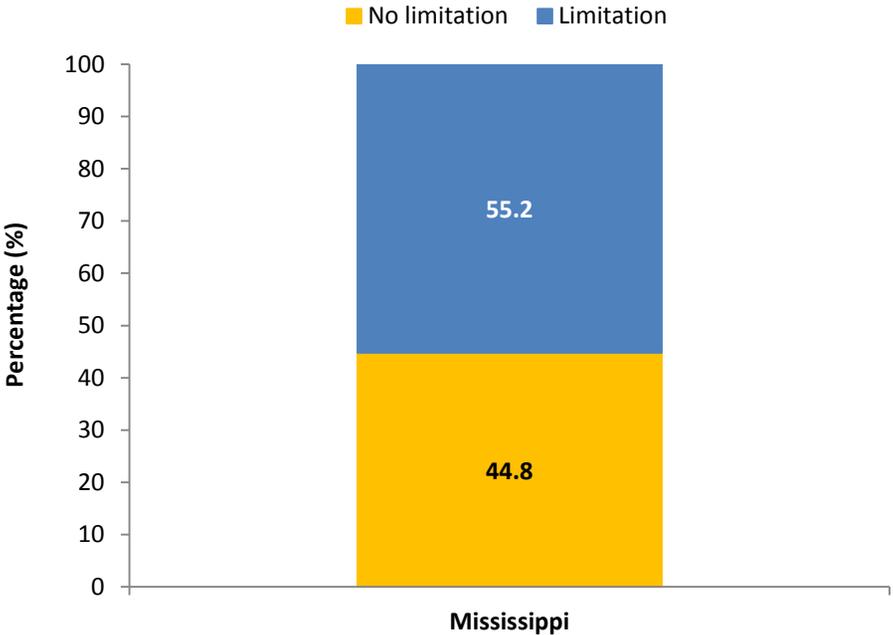
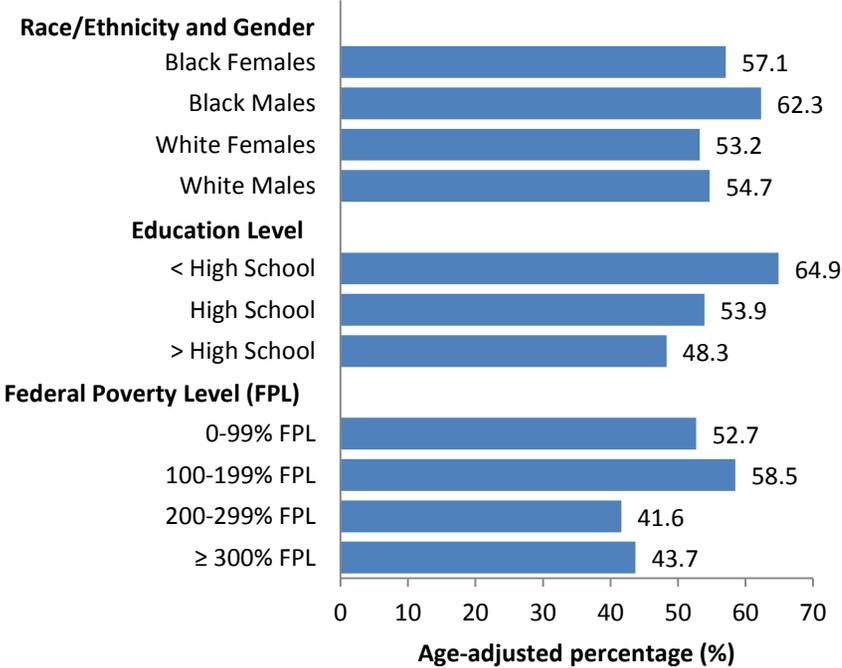


Figure 28. Percentage of adults with arthritis who experienced activity limitation among subgroups, Mississippi, 2011.



2011 DATA HIGHLIGHTS

- Over half of adults with arthritis experienced activity limitation.
- Activity limitation was more prevalent among adults with less than a high school education than adults with more than a high school education.
- There were no significant differences by race, gender, or poverty level.

Asthma Indicators

Ever having asthma among adults

Asthma is a chronic disease that affects the airways in the lungs. Asthma is a serious health and economic concern in the U.S. Asthma costs the U.S. about \$56 billion each year. In the last decade, the proportion of people with asthma in the U.S. increased by nearly 15%. There is no cure for asthma, but a person can control asthma by taking medicines and by avoiding triggers that can lead to an attack.

Figure 29. Percentage of adults who were and were not ever told that they have asthma, Mississippi and U.S., 2012.

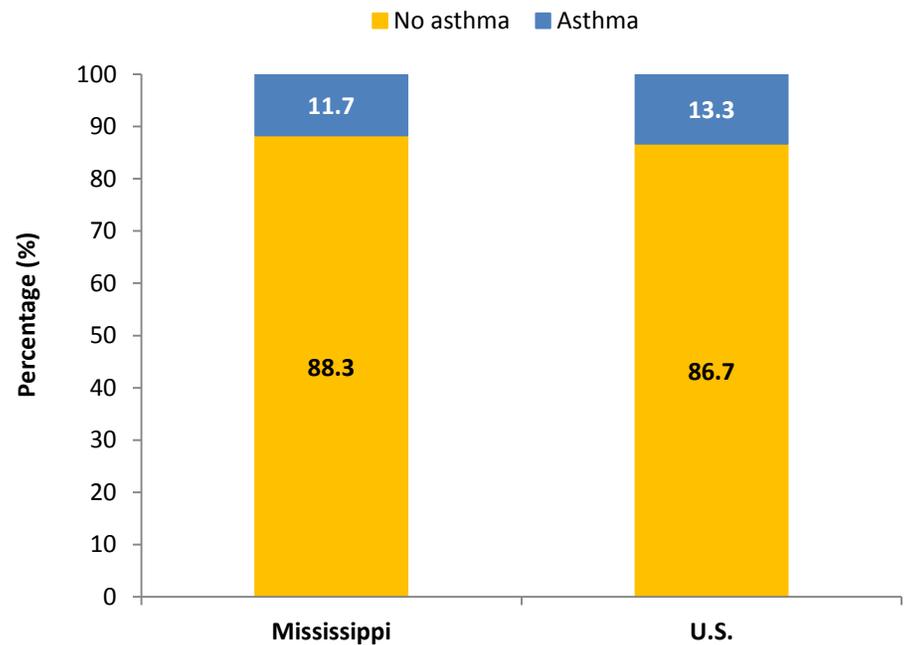
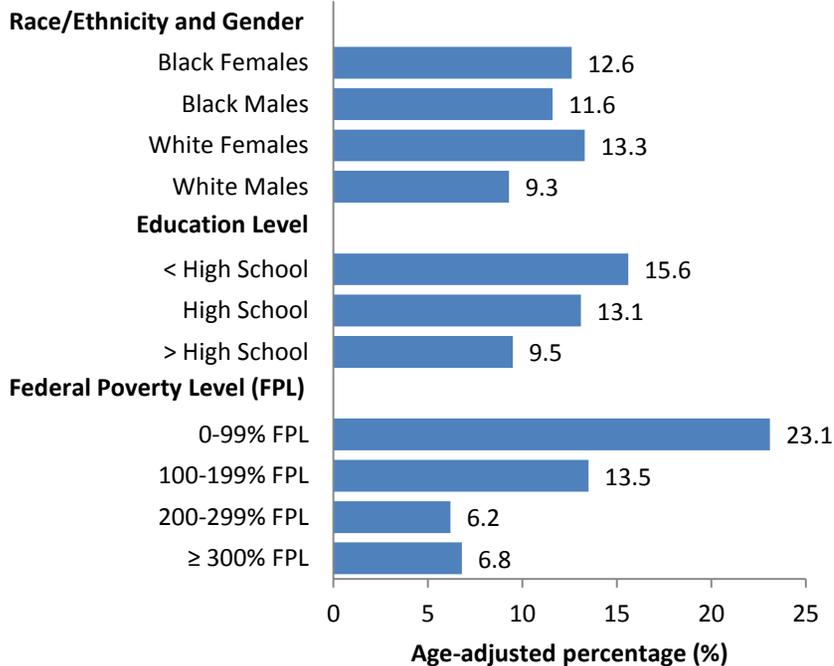


Figure 30. Percentage of adults who were ever told that they have asthma among subgroups, Mississippi, 2012.



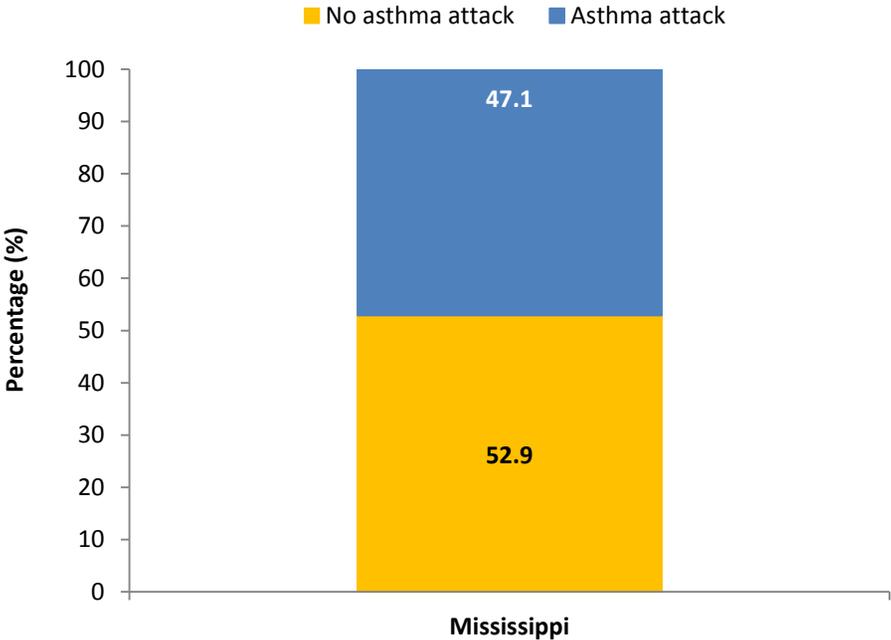
2012 DATA HIGHLIGHTS

- In Mississippi, nearly 12% of adults reported ever having asthma.
- The prevalence increased with increasing poverty; the percentage of adults who reported asthma was 4 times as high among those living below the poverty line than those living at ≥ 300% above the FPL.

Adults who had an asthma episode or attack in the past 12 months

During an asthma attack, airways become inflamed, making it hard to breathe. Asthma attacks can be mild, moderate, or serious — and even life threatening. An asthma attack can happen when a person is exposed to “asthma triggers”, such as tobacco smoke, dust mites, pets, pollution and mold. Triggers can vary from person to person, so it is important for a person with asthma to know his or her triggers and learn how to avoid them.

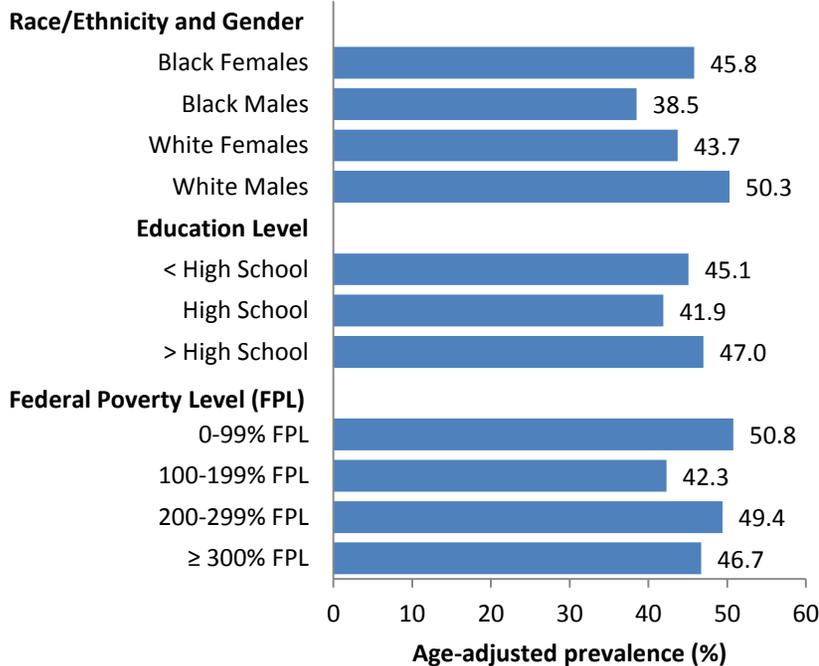
Figure 31. Prevalence of asthma attack in the past 12 months among adults with asthma, Mississippi, 2010.



2010 DATA HIGHLIGHTS

- Nearly half of adults with asthma reported having an asthma attack in the past 12 months.

Figure 32. Prevalence of asthma attack in the past 12 months among adults with asthma among subgroups, Mississippi, 2010.



- No significant differences in reporting an asthma attack were seen by gender, race, education, or poverty status.

Oral Health Indicators

Visit to a dentist or dental clinic within the past year among adults

Oral health is essential to overall health. Oral diseases, from cavities to oral cancer, cause pain and disability for many Americans. Visiting a dentist or a dental clinic on a regular basis is important in maintaining good oral health. A person can also maintain good oral health by: drinking fluoridated water and using a fluoride toothpaste; brushing and flossing teeth; avoiding tobacco; eating wisely; and limiting alcohol.

Figure 33. Percentage of adults who visited a dentist or dental clinic within the past year, Mississippi and U.S., 2012.

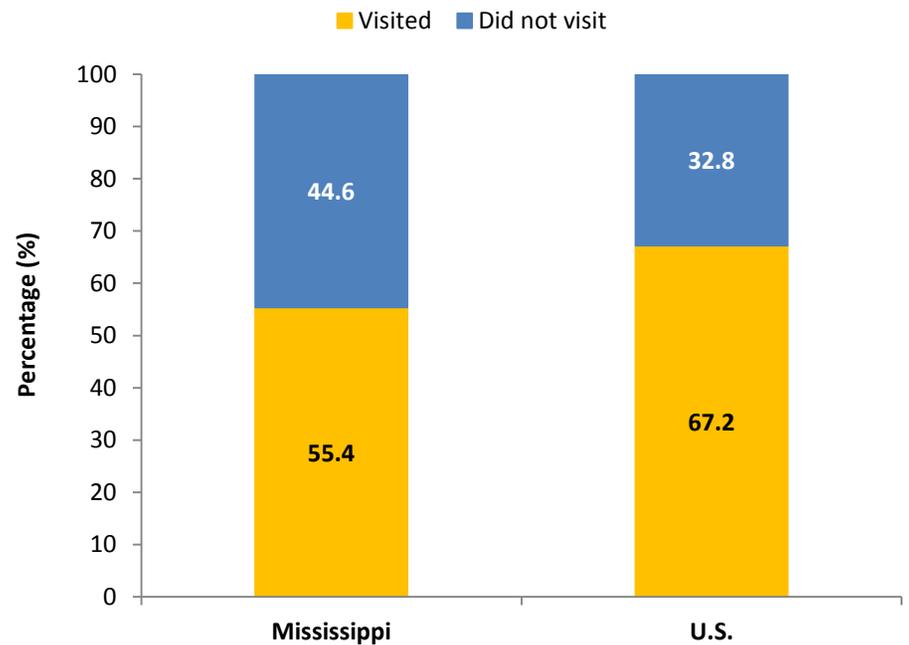
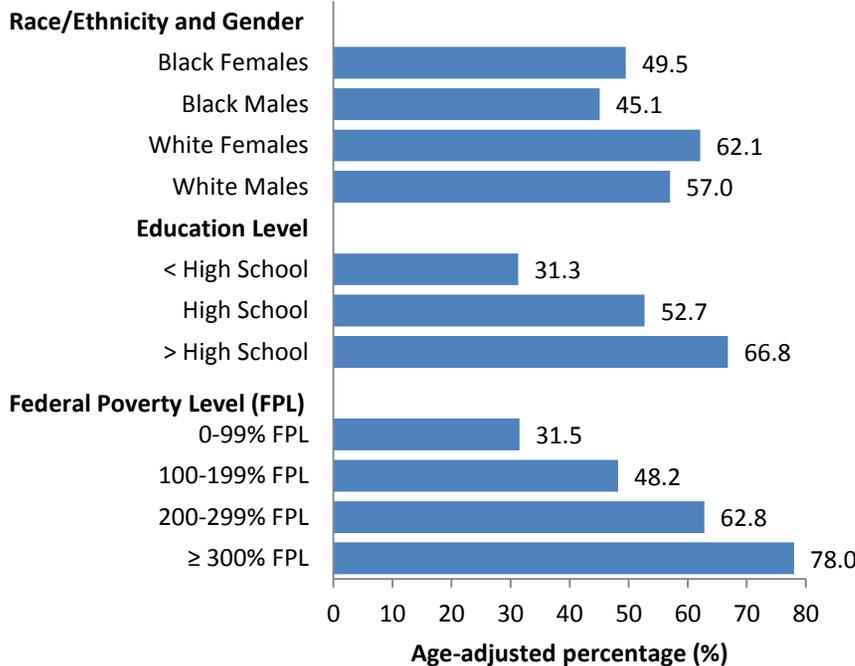


Figure 34. Percentage of adults who visited a dentist or dental clinic among subgroups, Mississippi, 2012.



2012 DATA HIGHLIGHTS

- 55% of adults in Mississippi visited a dentist or dental clinic within the past year.
- The proportion of adults who visited a dentist was over twice as high among adults with a high school education compared to adults with less than a high school education.
- Differences were seen by socioeconomic status; the percentage of adults visiting a dentist increased as poverty decreased. The proportion of adults who visited a dentist was 2.5 times higher among adults living at ≥ 300% FPL compared to adults living below the poverty line.

All natural teeth extracted among adults aged ≥ 65 years

Periodontal (gum) disease or tooth decay (cavities) are the most frequent causes of tooth loss. Having missing teeth can affect nutrition, since people without their teeth often prefer soft, easily chewed foods. Because dentures are not as efficient for chewing food as natural teeth, denture wearers also may choose soft foods and avoid fresh fruits and vegetables.

Healthy People 2020 Goal: Reduce the proportion of adults aged 65 to 74 years who have lost all of their natural teeth
Healthy People 2020 Target: 21.6%

Figure 35. Percentage of adults aged ≥ 65 years who have and have not had all natural teeth extracted, Mississippi and U.S., 2012.

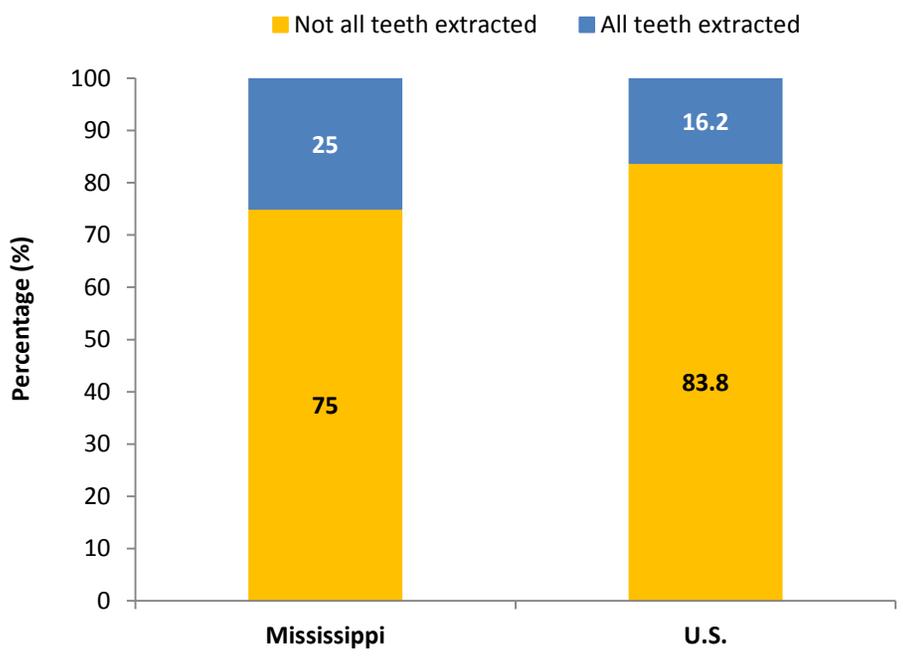
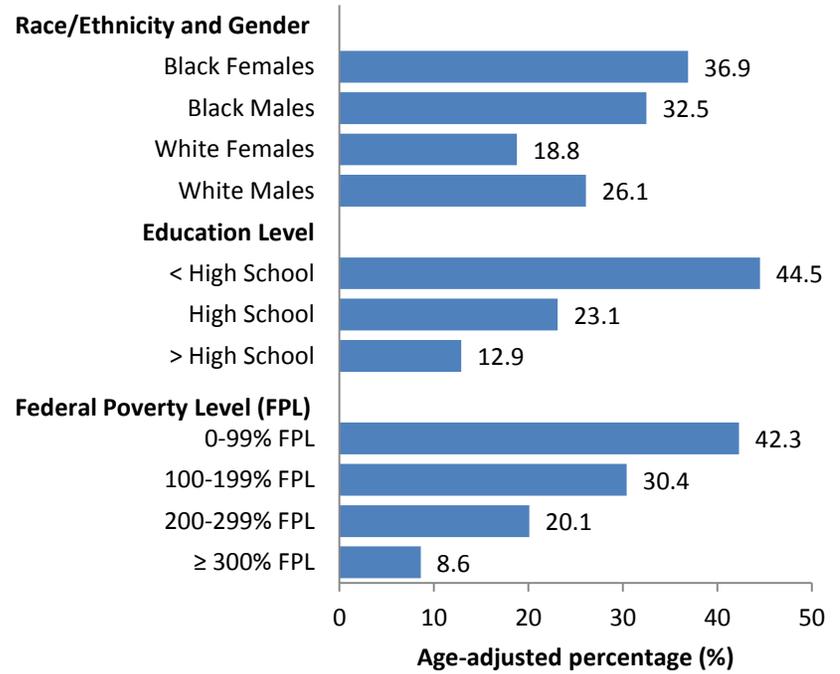


Figure 36. Percentage of adults of adults aged ≥ 65 years who have had all natural teeth extracted among subgroups, Mississippi, 2012.



2012 DATA HIGHLIGHTS

- 1 in 4 adults aged 65 years or older had all of their natural teeth extracted. This is above the national median and the Healthy People 2020 goal.
- The proportion of adults who were missing all teeth was nearly 4 times higher among adults with less than a high school education compared to adults with more than a high school education.
- The proportion of adults who had all natural teeth extracted was nearly 5 times higher among adults living below poverty compared to adults living at ≥ 300% FPL.

Any teeth extracted among adults aged ≥ 65 years

There are important associations between poor oral health status and other systemic diseases, such as diabetes. Moreover, risk factors for oral diseases, such as tobacco use, are shared with other systemic diseases. Poor oral health also impacts diet and nutrition and affects social activities, such as school and work.

Figure 37. Percentage of adults aged ≥ 65 years who did and did not have any teeth extracted, Mississippi and U.S., 2012.

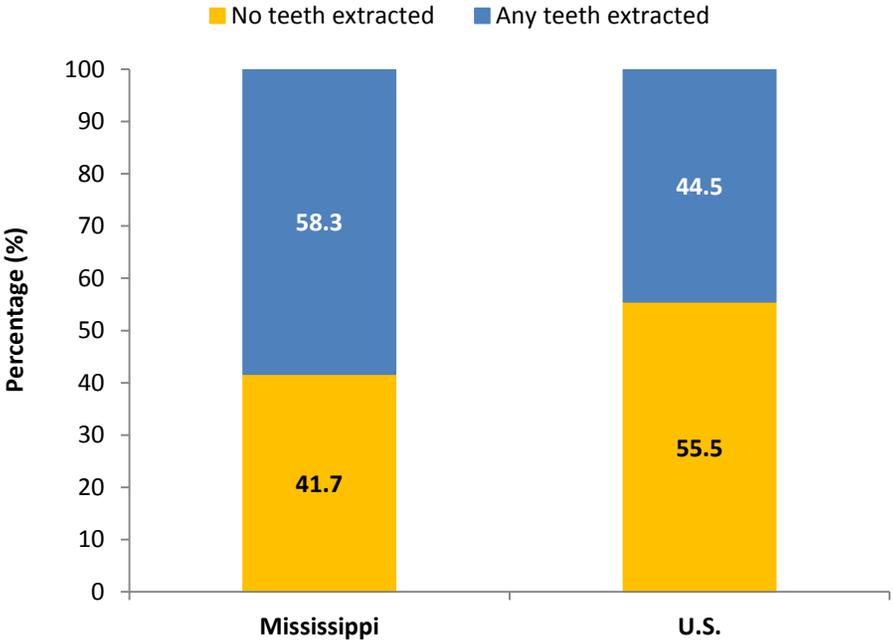
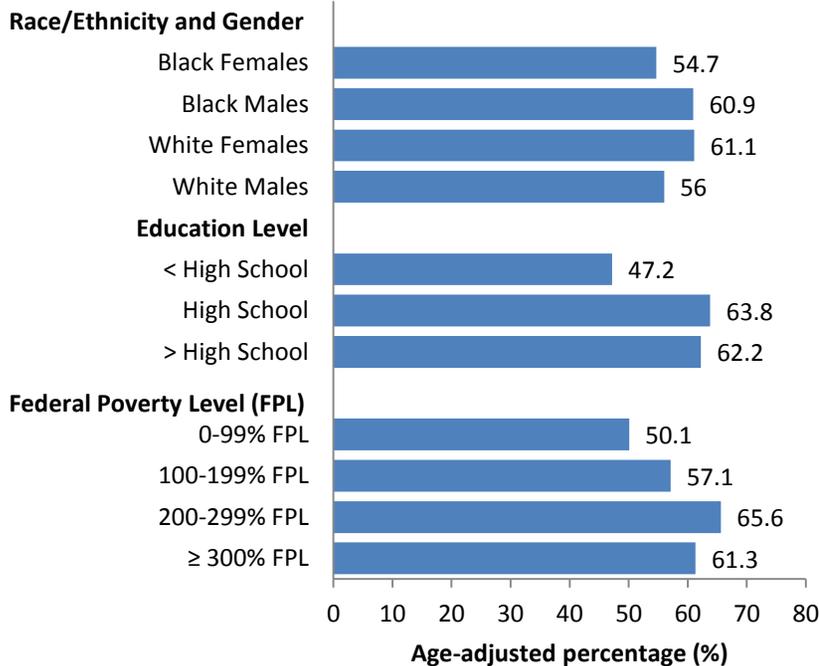


Figure 38. Percentage of adults of adults aged ≥ 65 years who had any teeth extracted, Mississippi, 2012.



2012 DATA HIGHLIGHTS

- 6 out of 10 adults aged 65 years or older reported having any teeth extracted.

Nutrition, Physical Activity, and Weight Status Indicators

Obesity among adults

Obesity increases the risk for multiple chronic diseases, including heart disease, stroke, hypertension, type 2 diabetes, osteoarthritis, and certain cancers. The estimated annual medical cost of obesity in the U.S. was \$147 billion in 2008. Nutrition and physical activity play an important role in obesity.

Healthy People 2020 Goal: Reduce the proportion of adults who are obese
Healthy People 2020 Target: 30.5%

Figure 41. Percentage of adults who reported a normal, overweight or obese BMI, Mississippi and U.S., 2012.

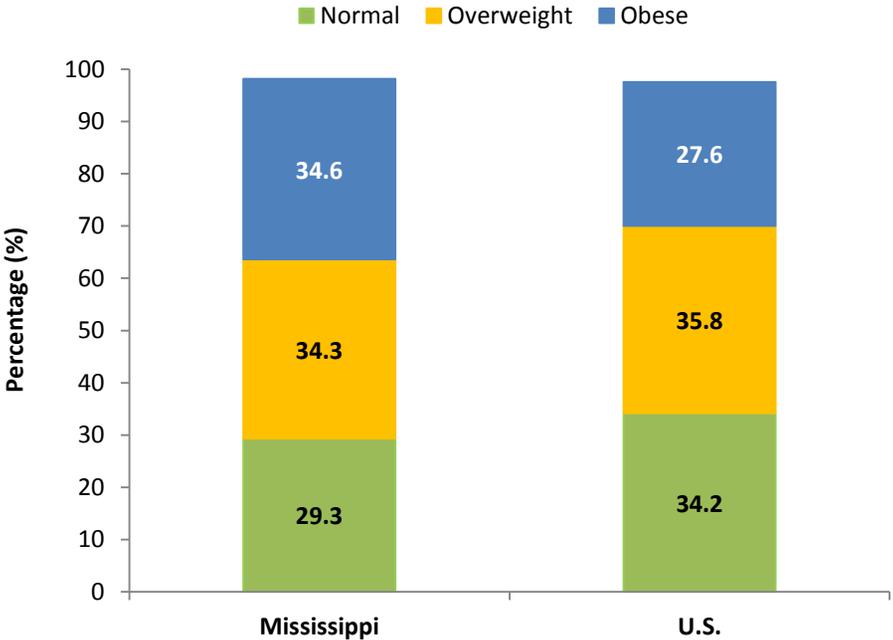
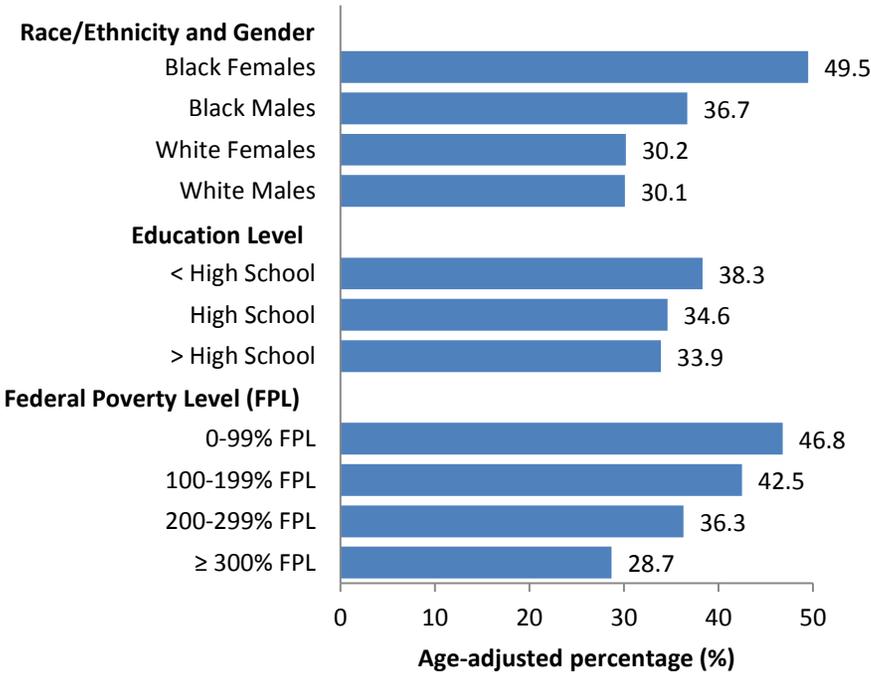


Figure 42. Percentage of adults who are obese among subgroups, Mississippi, 2012.



2012 DATA HIGHLIGHTS

- Over 1 in 3 adults were obese in Mississippi.
- Black females reported the highest prevalence of obesity; nearly half of black females were obese.
- A higher proportion of females than males were obese.
- A higher proportion of blacks than whites were obese.
- The prevalence of obesity generally decreased with decreasing poverty; the prevalence of obesity among adults living at 0-99% FPL was 1.5 higher than adults living at ≥ 300% FPL.

Leisure-time physical activity among adults

Physical activity reduces the risk for heart disease, colon cancer, stroke, type 2 diabetes and its complications, overweight, and osteoporosis. It is recommended that adults get 150 minutes of physical activity per week.

Healthy People 2020 Goal: Reduce the proportion of adults who engage in no leisure-time physical activity

Healthy People 2020 Target: 32.6%%

Figure 43. Percentage of adults who reported any and no leisure time physical activity, Mississippi, 2012.

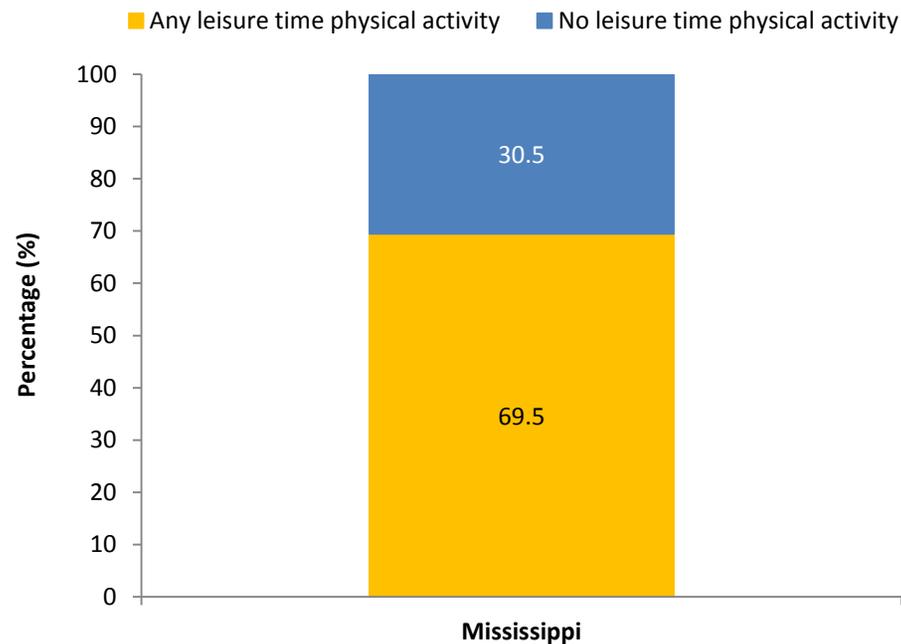
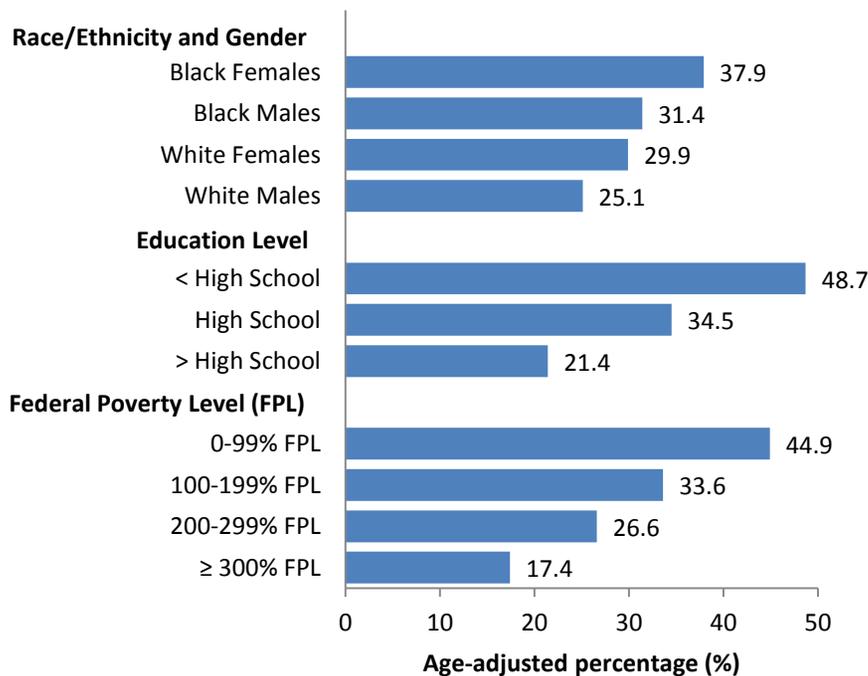


Figure 44. Percentage of adults who reported no leisure time physical activity among subgroups, Mississippi, 2012.



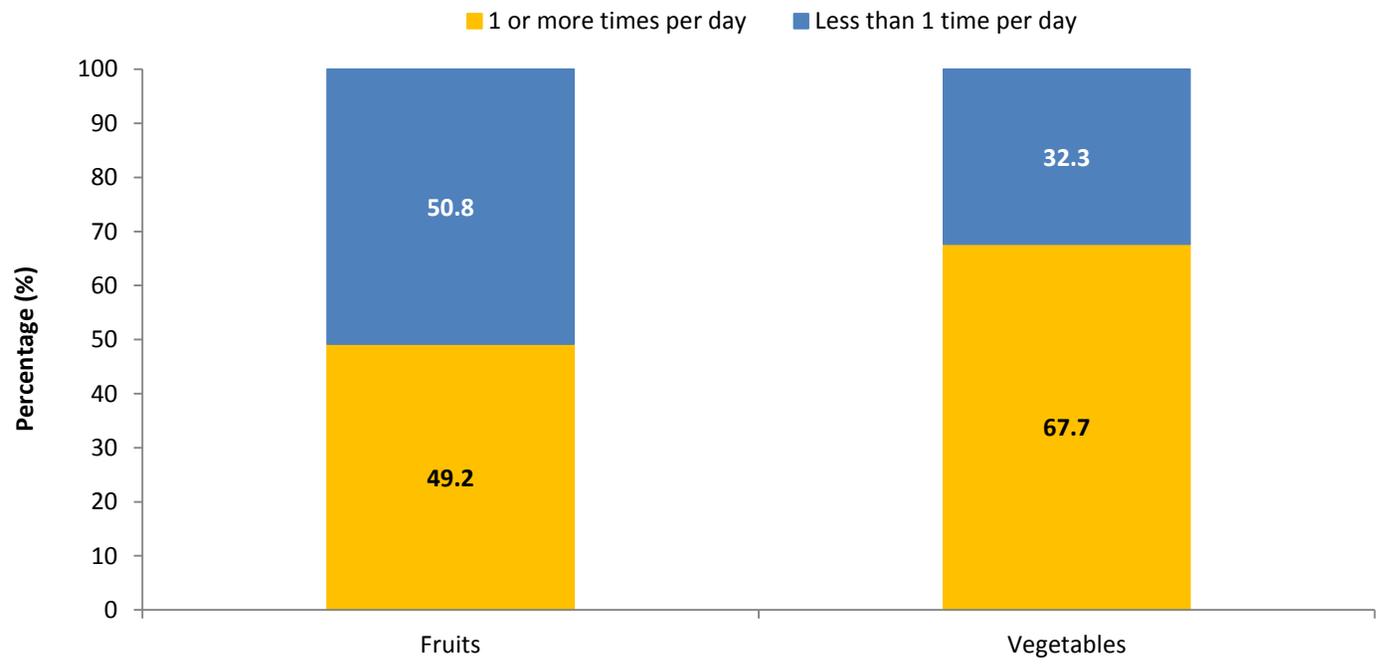
2012 DATA HIGHLIGHTS

- Nearly 1 in 3 adults in Mississippi reported no leisure time physical activity.
- Black females had the highest prevalence of no leisure time physical activity.
- The percentage of females reporting no leisure time physical activity was greater than males.
- The percentage of blacks reporting no leisure time physical activity was greater than whites.
- The prevalence of no leisure time activity decreased with increasing education.
- The prevalence of no leisure time activity decreased with decreasing poverty.

Fruit and vegetable consumption among adults

Fruits and vegetables contribute important nutrients for the human body. Eating fruits and vegetables lowers the risk of developing many chronic diseases and can also help with weight management.

Figure 45. Percentage of adults who consume < 1 or ≥ 1 fruits and vegetables per day, Mississippi, 2011.



2011 DATA HIGHLIGHTS

- About half of adults reported eating 1 or more fruits daily.
- The median intake of fruits and vegetables (times per day) was 0.9.
- About two-thirds of adults reported eating 1 or more vegetables daily.
- The median intake of vegetables (times per day) was 1.4.

Tobacco and Alcohol Use Indicators

Current smoking among adults

Smoking is the single most preventable cause of death and disease in the U.S. Nationally, cigarette smoking accounts for 1 of every 5 deaths and secondhand smoke accounts for over 53,000 deaths of nonsmokers annually. Smoking increases the risk of heart disease, cancer, stroke, and chronic lung disease.

Healthy People 2020 Goal: Reduce cigarette smoking by adults

Healthy People 2020 Target: 12.0%

Figure 46. Percentage of adults who are and are not current smokers, Mississippi and U.S., 2012.

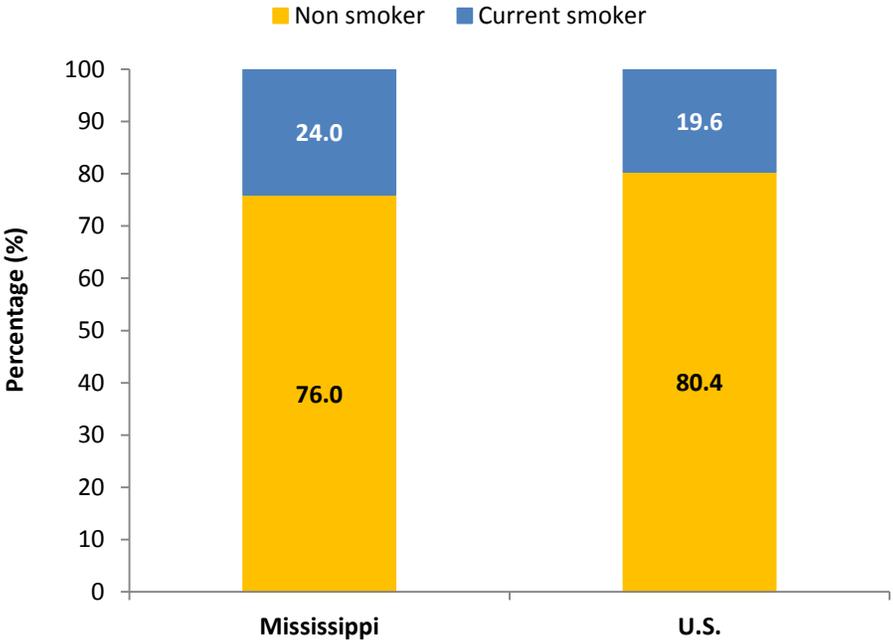
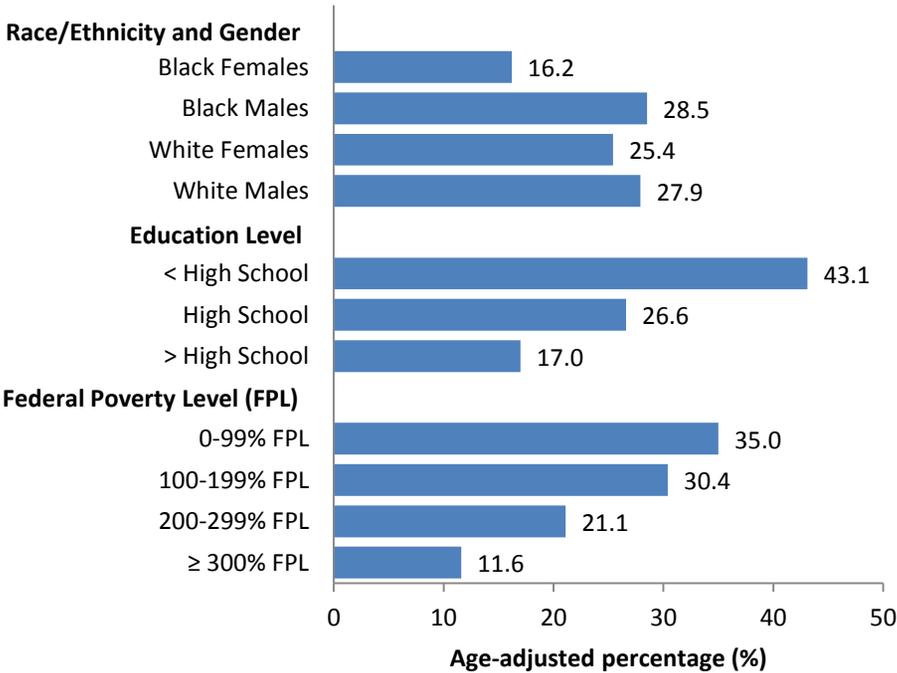


Figure 47. Percentage of adults who are current smokers among subgroups, Mississippi, 2012.



2012 DATA HIGHLIGHTS

- Nearly 1 in 4 adults in Mississippi reported current smoking.
- A higher proportion of males reported current smoking than females.
- A higher proportion of whites reported current smoking than blacks.
- The prevalence of smoking among adults with less than high school education was nearly 2.5 times higher than adults with more than a high school education.
- The prevalence of smoking among adults living at 0-99% FPL was about 3 times higher than adults living at ≥ 300% FPL.

Binge drinking among adults

Alcohol abuse is strongly associated with injuries, violence, fetal alcohol syndrome, chronic liver disease, and risk of other acute and chronic health effects.

Healthy People 2020 Goal: Reduce the proportion of adults engaging in binge drinking during the past 30 days

Healthy People 2020 Target: 24.4%

Figure 48. Percentage of adults who did and did not report binge drinking in the past 30 days, Mississippi and U.S., 2012.

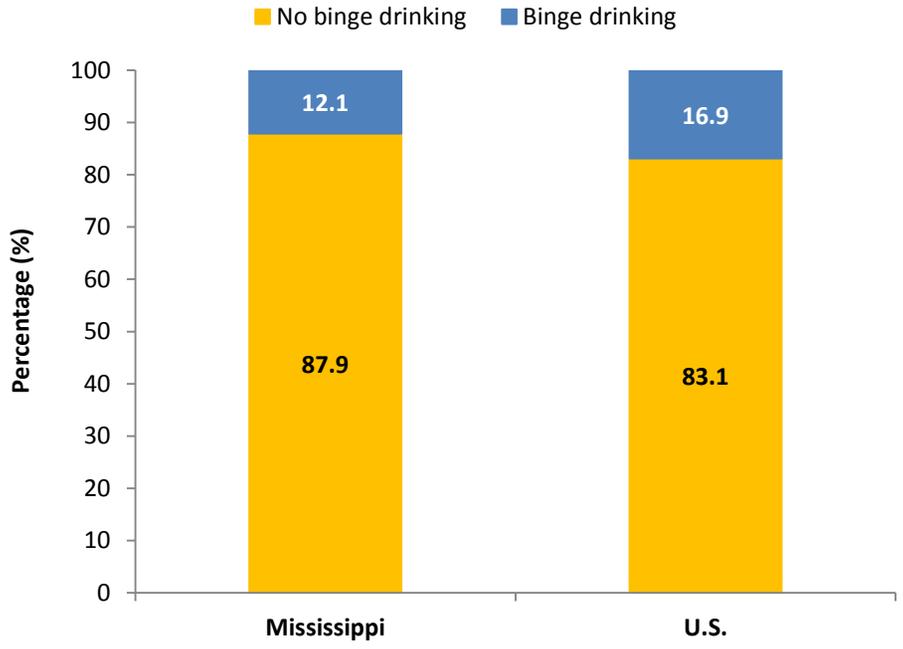
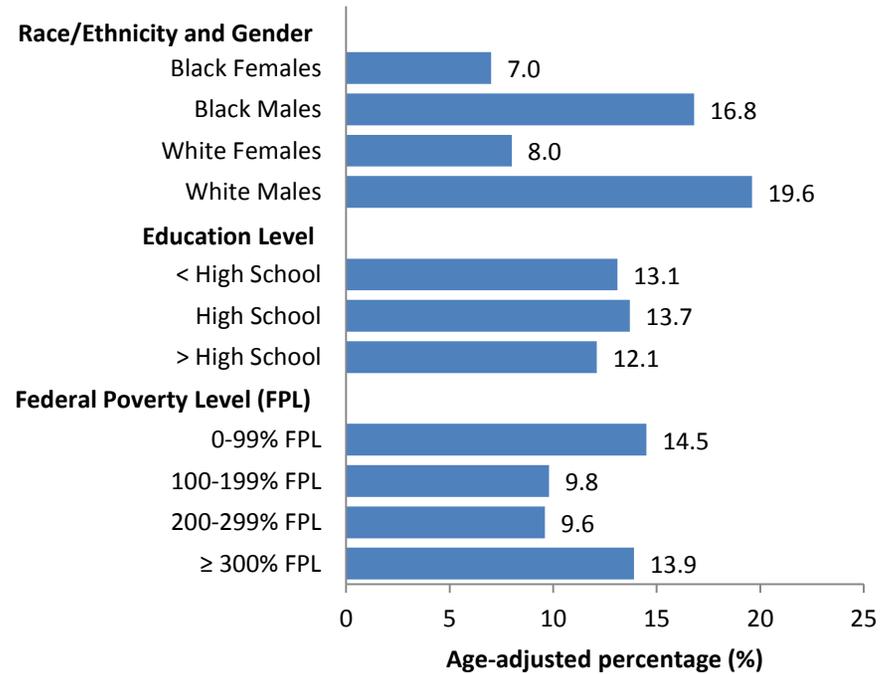


Figure 49. Percentage of adults who reported binge drinking in the past 30 days among subgroups, Mississippi, 2012.



2012 DATA HIGHLIGHTS

- Over 12% of Mississippi adults reported binge drinking in the past month.
- White males had the highest percentage of binge drinkers.
- The percentage of males who reported binge drinking was 2.5 times higher than the percentage of women.
- The percentage of black males who reported binge drinking was 2.5 times higher than the percentage of black women.
- The percentage of white males who reported binge drinking was 2.5 times higher than the percentage of white women.

Special Focus on Women of Reproductive Age

The Impact of Chronic Disease, Risk Behaviors, and Risk Factors among Women of Reproductive Age

Preconception (before pregnancy) and interconception (between pregnancies) care provide an opportunity to identify existing health risks and to prevent future health problems for women and their children.

Diabetes

Women with diabetes before pregnancy have an increased risk for preeclampsia, hypertension during pregnancy, cesarean delivery, and adverse birth outcomes such as spontaneous abortions, birth defects, preterm delivery, and fetal and infant death.

Hypertension

Hypertension before pregnancy is associated with an increased risk for preeclampsia, placental abruption, and gestational diabetes. These women also face an increased risk for adverse birth outcomes such as preterm delivery, small for gestational age, and infant death.

Obesity

Obesity increases a woman's risk for pregnancy complications, such as gestational diabetes, hypertension, and preeclampsia as well as the risk for a cesarean section. Infants of obese mothers also face increased risk for future chronic disease. If overweight and obese women reduced their

weight to a normal level before pregnancy, the number of women with gestational diabetes could be reduced by almost 50%.

Tobacco Use

Smoking during pregnancy increases a woman's risk for pregnancy complications including placenta previa, placental abruption, and preterm rupture of membranes. It also increases the infants' risk for low birth weight, preterm delivery, sudden infant death syndrome, and preterm-related infant death. If all pregnant smokers quit smoking, as many as 5%–8% of preterm infants and 13%–19% of term low birthweight infants could be born a normal weight. In addition, as many as 23%–34% of infant deaths from SIDS and 5%–7% of infant deaths from preterm births could be prevented.

Alcohol Use

Drinking during pregnancy can lead to sudden infant death syndrome and fetal alcohol spectrum disorders. Binge drinking can lead to unintended pregnancies.

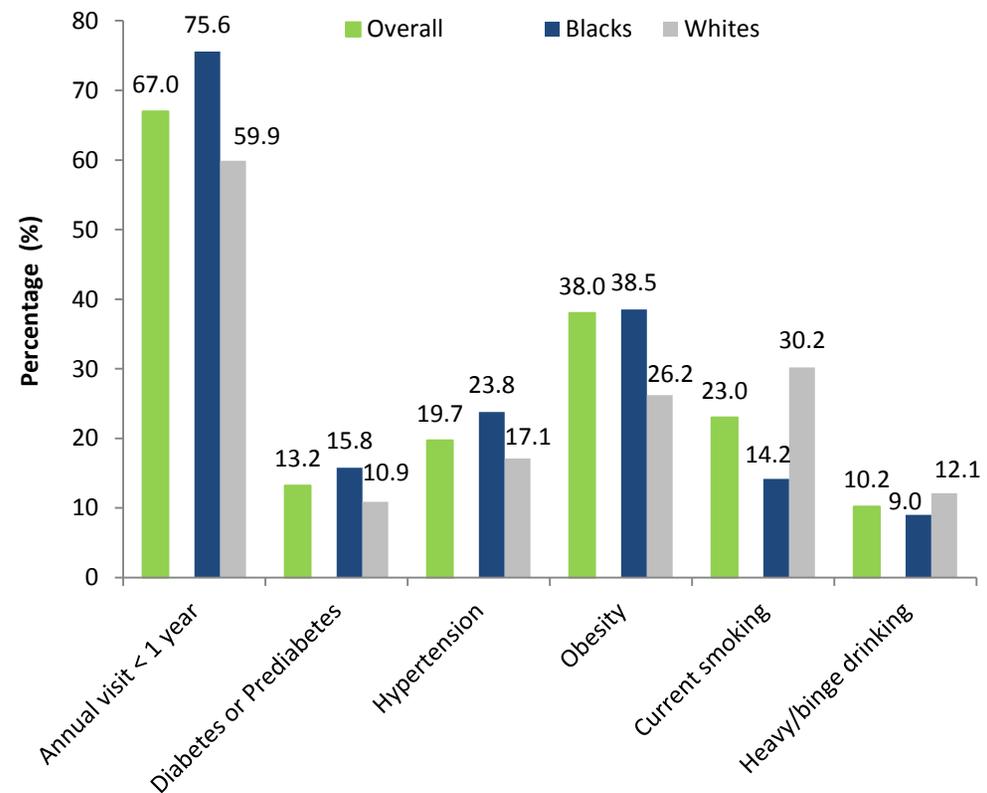
Despite the known risks, the prevalence of these chronic diseases and related risk factors and behaviors are high among women of reproductive age in Mississippi and racial differences exist.

DATA HIGHLIGHTS

Among women of reproductive age (18-44 years):

- Nearly 70% did not have an annual checkup with a health care provider in the past year.
 - Fewer black women visited a healthcare provider in the past year compared to white women.
- Nearly 20% reported hypertension and 13% reported diabetes or prediabetes.
- 4 out of 10 were obese.
 - The prevalence of obesity was higher among black women than white women.
- Nearly 1 out of 4 were current smokers.
 - The prevalence of smoking was more than 2 times higher among white women than black women.
- 1 in 10 reported heavy or binge drinking in the past month.

Figure 50. Prevalence of chronic diseases and related risk factors and behaviors among women of reproductive age (18-44 years), Mississippi, 2012.



Special Focus on Mississippi Youth

The Impact of Chronic Disease, Risk Behaviors, and Risk Factors on Youth

Tobacco use

Cigarette smoking is the leading cause of preventable death in the United States and accounts for approximately 440,000 deaths each year. Cigarette smoking increases risk of heart disease; chronic obstructive pulmonary disease; acute respiratory illness; stroke; and cancers of the lung, larynx, oral cavity, pharynx, pancreas, and cervix. In addition, as compared to nonsmokers, cigarette smokers are more likely to drink alcohol, use marijuana and cocaine, engage in risky sexual behaviors, engage in physical fighting, carry a weapon, and attempt suicide.

Smokeless tobacco contains 28 known human carcinogens. Use of smokeless tobacco products increases the risk of developing cancer of the oral cavity, leukoplakia (a lesion of the soft tissue that consists of a white patch or plaque that cannot be scraped off) and recession of the gums. Smokeless tobacco use also causes an increased risk of heart disease and stroke.

Alcohol use

On average, alcohol is a factor in the deaths of approximately 4,700 youths in the United States per year, shortening their lives by an average of 60 years. Underage drinking cost the U.S. \$24 billion in 2006. Studies have determined that delaying the age when drinking is initiated until age 21 years or later substantially reduces the risk of experiencing alcohol-related problems. Underage drinking is also strongly associated with injuries, violence, fetal alcohol syndrome, and risk of other acute and chronic health effects.

Weight status

Obesity is of public health importance: it increases the development of risk factors for cardiovascular disease and diabetes.

Physical activity

The U.S. Department of Health and Human Services recommends that young people aged 6–17 years participate in at least 60 minutes of physical activity daily. Regular physical activity in childhood and adolescence improves strength and endurance, helps build healthy bones and muscles, helps control weight, reduces anxiety and stress, increases self-esteem, and may improve blood pressure and cholesterol levels.

Screen time

Excessive television viewing is associated with obesity. There is also evidence that TV viewing time is positively associated with reported intakes of high fat foods, and TV viewing during mealtime is associated with lower consumption of fruits and vegetables and higher consumption of salty snacks and soda. TV viewing as a potential risk factor for obesity is of public health importance as it increases the development of risk factors for cardiovascular disease and diabetes.

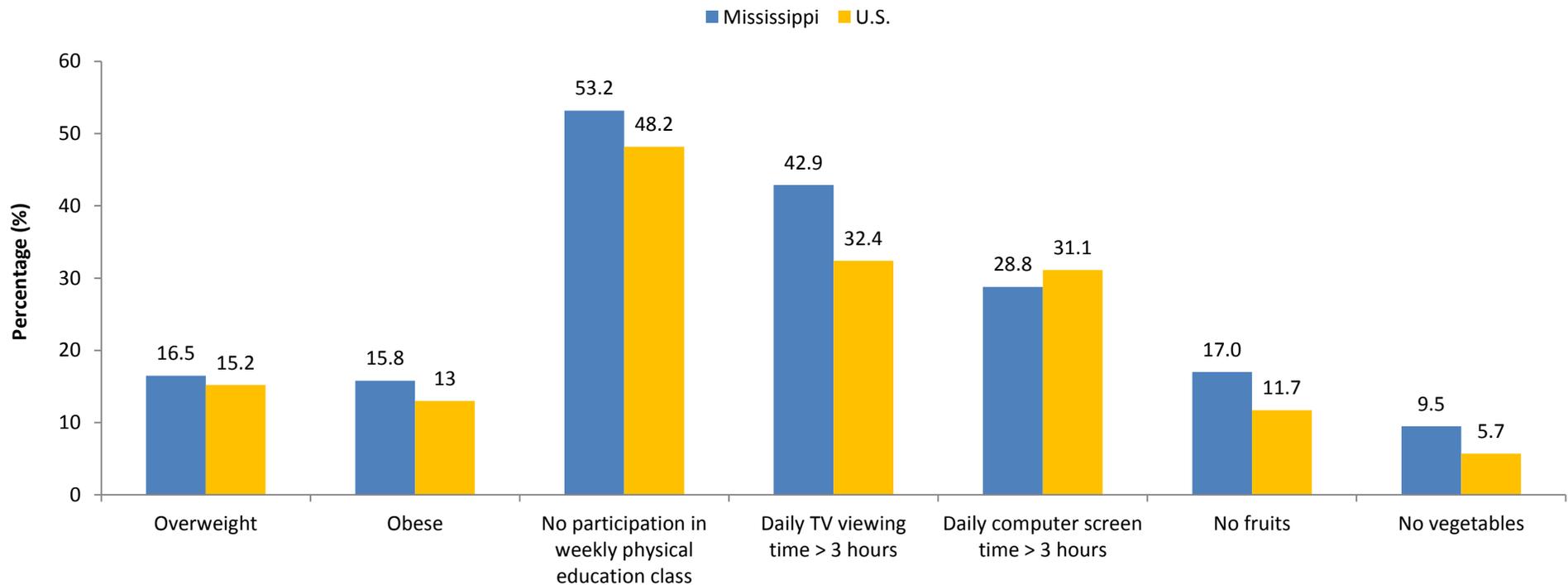
Research findings examining the association between screen media use such as videotapes/ video games/computers and obesity show mixed results. As with TV viewing, these media may involve exposure to food advertising which can affect food choices, and, if students are eating while viewing videotapes, for example, they may reduce their awareness of satiety cues.

Nutrition

The *Dietary Guidelines for Americans, 2010* recommends Americans eat more fruits and vegetables as part of a healthy diet because they contribute important nutrients, can reduce the risk for many chronic diseases, and can also help with weight management.

Nutrition, physical activity, and weight status among youth

Figure 51. Prevalence of nutrition, physical activity, and weight status related factors and behaviors among Mississippi youth, 2011.

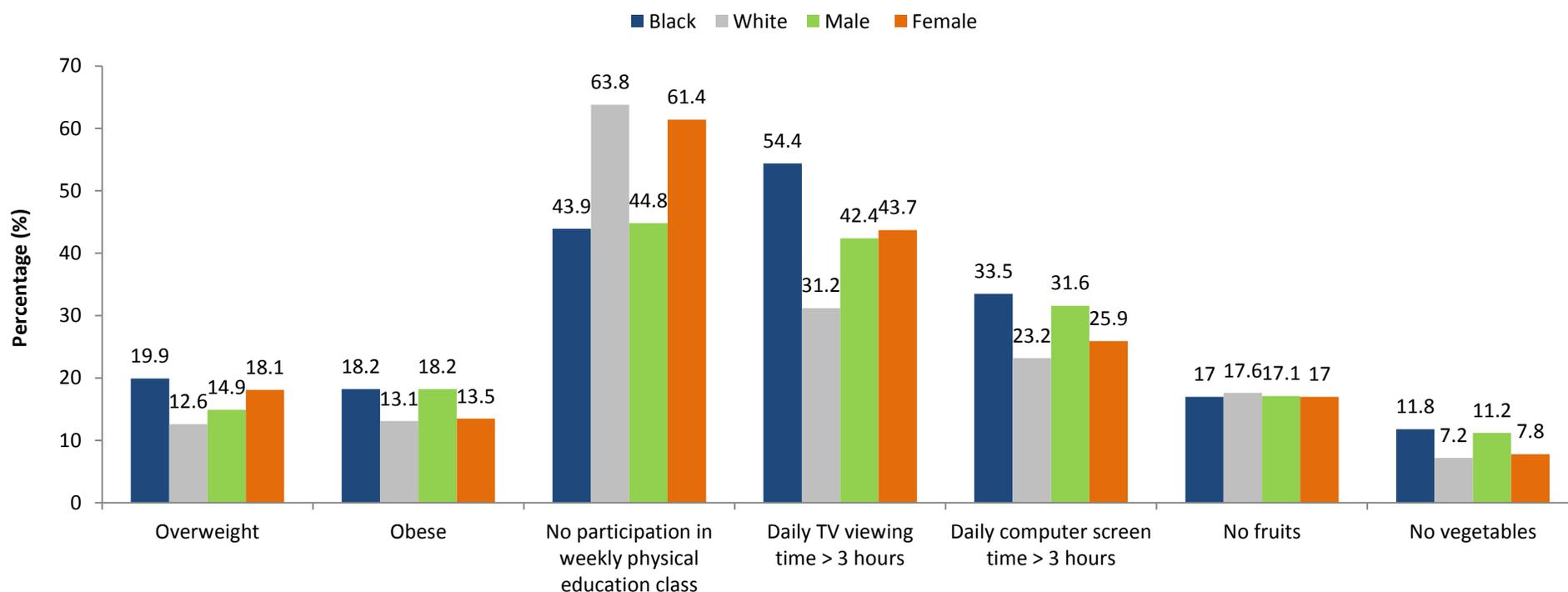


2011 DATA HIGHLIGHTS

- Generally, Mississippi youth fared worse than the nation when it came to nutrition, physical activity, and weight related indicators.
- Mississippi youth had a higher prevalence of:
 - overweight,
 - obesity,
 - physical inactivity,
 - daily TV viewing time, and
 - low daily fruit and vegetable consumption

Racial and gender differences in nutrition, physical activity, and weight status among Mississippi youth

Figure 52. Prevalence of nutrition, physical activity, and weight status related factors and behaviors among Mississippi youth by race and gender, 2011.

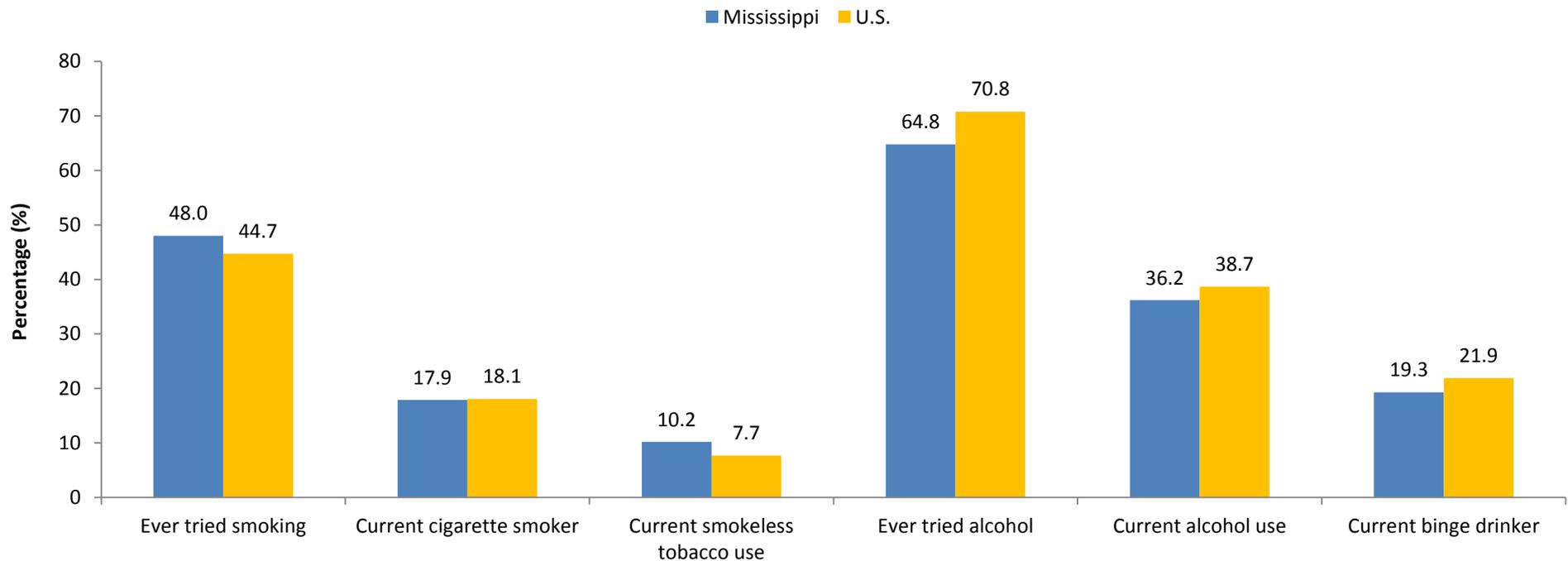


2011 DATA HIGHLIGHTS

- More blacks than whites were overweight or obese.
- Males had a higher prevalence of obesity than females.
- More blacks watched 3 or more hours of television per day than whites .
- The prevalence of 3 or more hours per day of computer screen time was higher among blacks than whites.
- Whites were more likely to not participate in physical activity classes than blacks.
- Females were more likely to not participate in physical activity classes than males.
- Daily vegetable consumption was lower among blacks than whites.

Tobacco and alcohol use among youth

Figure 53. Prevalence of tobacco and alcohol use among Mississippi youth, 2011.

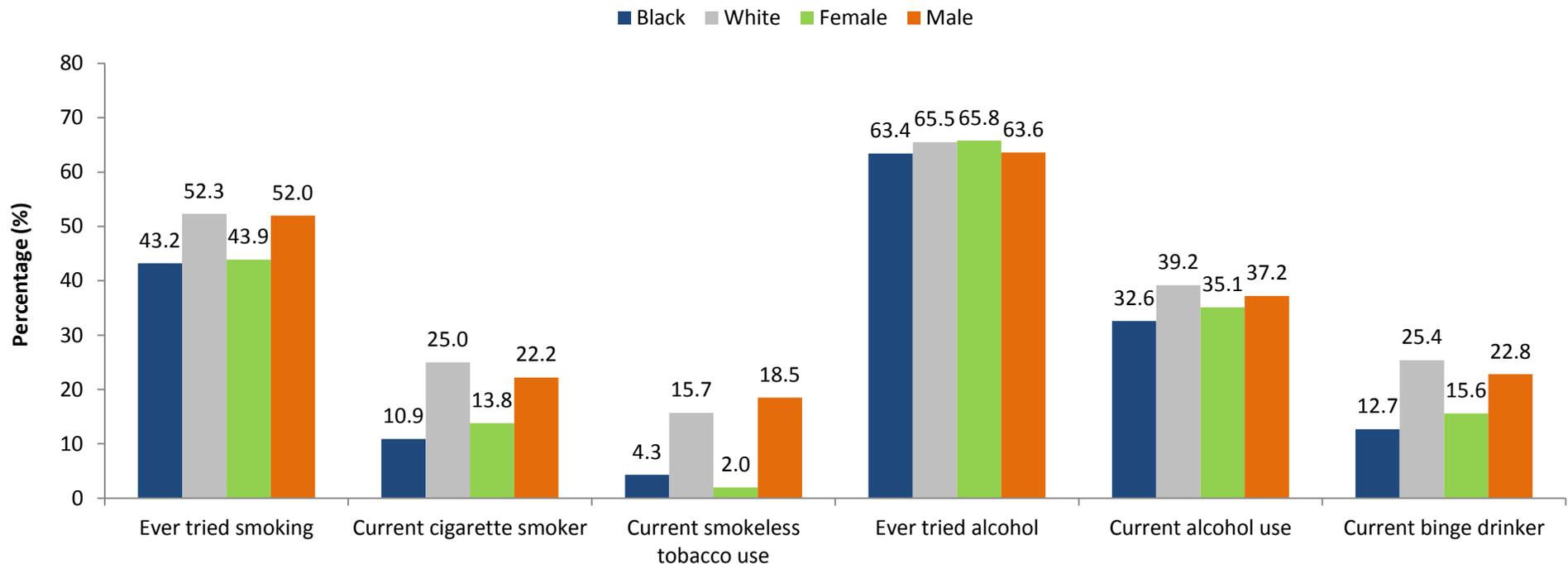


2011 DATA HIGHLIGHTS

- Generally, Mississippi youth fared worse than the nation when it came to tobacco use.
- Mississippi youth had a higher prevalence of:
 - ever trying smoking
 - current smokeless tobacco use
- Generally, Mississippi youth fared better than the nation when it came to alcohol use.
- Mississippi youth had a lower prevalence of:
 - ever trying alcohol
 - current alcohol use, and
 - current binge drinking

Racial and gender differences in tobacco and alcohol use among Mississippi youth

Figure 54. Prevalence of tobacco and alcohol use among Mississippi youth by race and gender, 2011.



2011 DATA HIGHLIGHTS

- Whites had a higher prevalence of ever smoking and current smoking compared to blacks.
- Males had a higher prevalence of ever smoking and current smoking compared to females.
- The prevalence of current smokeless tobacco use was greater among whites than blacks.
- The prevalence of current smokeless tobacco use was greater among males than females.
- The prevalence of binge drinking was greater among whites than blacks.
- Males had a higher prevalence of binge drinking than females.

Summary, Highlights, and Future Directions

Summary and Future Directions

Summary

The *Report on the Burden of Chronic Diseases in Mississippi, 2014* provides a baseline snapshot of the current state of chronic disease in Mississippi and provides valuable information on state-specific needs. This report indicates that chronic diseases are common in Mississippi, and Mississippians often have a higher prevalence of chronic diseases and related risk factors than the general U.S. population. Moreover, the report highlights the most prominent health disparities among the state's population.

Chronic diseases do not affect all Mississippians equally - there are clear racial and socioeconomic disparities in chronic disease and chronic disease-related risk factors. Specifically, compared to whites, blacks had higher age-adjusted death rates due to chronic diseases, including heart disease, stroke and diabetes. This is not all that unexpected, as a higher percentage of black adults also reported chronic disease related risk factors, including high blood pressure, obesity, physical inactivity and poor oral health.

There were clear differences between socioeconomic groups, too.

Compared to those living well above poverty, those living below poverty report higher prevalence of diabetes, high blood pressure, high blood

cholesterol, obesity, smoking, physical inactivity, asthma, arthritis, and poor oral health.

Addressing the underlying social determinants of health in Mississippi is eminent if the state is to improve its health. Findings from this report could be used to determine priorities for public health messages and to inform evidence-based, culturally-appropriate intervention strategies aimed at reducing, and ultimately eliminating chronic diseases in Mississippi. Focusing on those most at risk, specifically minority communities and those with lower socioeconomic status and low levels of education, may help to eliminate health disparities and improve the health of the state as a whole. Differences in health by race/ethnicity and socioeconomic status may reflect differences in health literacy and behaviors, attitudes toward health and health care, and access to and use of health services and types of treatment received. Future public health programs and interventions should consider these factors to improve their effectiveness.

Summary and Future Directions (continued)

Decreasing the prevalence of risk factors for chronic disease is difficult and heavily reliant on behavior change, leaving no single approach as the “best” method for intervention. For successful strategies to be sustainable and to have greater population reach, interventions should be multi-level and multi-disciplinary. Strategies to promote health must include input from multiple entities at the local- and state-levels, and must address social and cultural contexts and various environments, including the home, neighborhood, school, workplace, recreational, faith-based, and food settings. Social, cultural and economic factors that influence health are easily defined, however impacting the context of these factors remains a challenge and thus requires collaboration from multiple sectors, including economic development corporations, public health, educational systems, policy-makers, advocates, healthcare practitioners and insurance providers, and more. Environmental and policy approaches aimed to reduce exposure to the complex interaction of risk factors linked to the development and onset of chronic disease should be considered as these are designed to provide opportunities, support, and cues to help people develop and maintain healthy lifestyle behaviors.

Future Directions

In an effort to address chronic disease risk factors and health conditions, the Mississippi State Department of Health Office of Preventive Health

engaged categorically funded chronic disease prevention and health promotion programs to develop the Mississippi State Plan for Chronic Disease Prevention and Health Promotion. This plan provides an efficient and effective collaborative approach for the implementation of evidence-based strategies, which support the four key domains established by the Centers for Disease Control and Prevention to address chronic disease prevention and health promotion. The Plan also takes into account health inequities and the contributing social determinants of health to identify opportunities for improving population health and shaping the systems put in place to address chronic disease.

This plan reflects strategies aimed toward building capacity to address chronic disease in a coordinated, collaborative approach and to delay the development of serious chronic diseases as long as possible. The plan interventions seek to 1) promote personal health behaviors and supportive environments where we live, learn, work and play, to prevent disease, to slow the progress of disease, to reverse it where possible, and to prevent the development of complications; and 2) encourage the use of screening and early diagnosis that can lead to better disease identification, treatment, and management or delay complications.

Appendix

Data Sources

Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is an ongoing, state-based, random digit-dialed telephone survey of non-institutionalized U.S. adults aged 18 years or older. The survey collects information on health risk behaviors, preventive health practices, and health care access primarily related to chronic disease and injury. The BRFSS operates in 50 states, the District of Columbia, and three U.S. territories (Puerto Rico, U.S. Virgin Islands, and Guam). As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from non-coverage (e.g., lower telephone coverage among populations of low socioeconomic status), non-response (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). Further information on BRFSS, including information on survey data quality, question history, or module information is available from the survey website at: <http://www.cdc.gov/brfss/>.

CDC Chronic Disease Cost Calculator

To help states estimate the economic burden of chronic diseases, the Centers for Disease Control and Prevention and RTI International developed the Chronic Disease Cost Calculator version 2. Specifically, the Cost Calculator provides the following estimates for each chronic condition: medical expenditures are for the entire state population (all payers and the uninsured) and separately for Medicaid, Medicare, and privately insured; absenteeism costs and estimates of missing work days; and, projections of medical costs until 2020. More information can be found at: <http://www.cdc.gov/chronicdisease/resources/calculator/index.htm>.

Compressed Mortality File

The Compressed Mortality File (CMF) is produced by the National Center for Health Statistics (NCHS), at the CDC. CMF is a county-level national mortality and population database spanning the years 1968-2008. On CDC WONDER (<http://wonder.cdc.gov/>), data are available for the years 1979-2008. Compressed Mortality data on CDC WONDER are updated annually. Mortality data on the CMF are based on NCHS mortality files that include a record for every death of a U.S. resident recorded in the U.S. Mortality data are used to monitor the underlying and contributing causes of death for persons dying and to determine life expectancy. A limitation to this data source is that causes of death and other variables listed on the death certificate might be inaccurate. Please see the visit the following website for more information: http://www.cdc.gov/nchs/data_access/cmf.htm.

Healthy People 2020

Healthy People provides science-based, 10-year national objectives for improving the health of all Americans. For 3 decades, Healthy People has established benchmarks and monitored progress over time in order to: encourage collaborations across communities and sectors; empower individuals toward making informed health decisions; and measure the impact of prevention activities. There are nearly 600 objectives in Healthy People 2020 with more than 1,300 measures. Each Healthy People 2020 objective has a: 1) reliable data source; 2) baseline measure; and 3) target for specific improvements to be achieved by the year 2020. More information about Healthy People can be found at: <http://www.healthypeople.gov/2020/default.aspx>.

Data Sources (continued)

Hospital Discharge Data

Hospital discharge data are the abstracted records associated with a patient's stay in a short-term hospital. These data typically contain patient demographics, patients' length of hospital stay, diagnosis, treatment, and payment information. MS-based hospital discharge data are collected, maintained, and analyzed by MSDH personnel. Diagnoses listed on hospital discharge data may be inaccurate. Practice patterns and payment mechanisms can affect decisions by health-care providers to hospitalize patients. Residents of one state might be hospitalized in another state and not be reflected in the first state's hospital data set. Multiple admissions for an individual patient can falsely elevate the number of persons hospitalized. Data provided in this report are per event.

Mississippi Vital Statistics

Mortality statistics are compiled from death certificates which are filed with the MSDH, Office of Vital Records as required by MS state law and regulation. Mortality data in the MS Statistically Automated Health Resource System (MSTAHRS) represents deaths of MS residents. Deaths from 1999 forward are coded using the Tenth Revision of the International Classification of Diseases (ICD-10).

Mississippi Cancer Registry

The Mississippi Cancer Registry (MCR) is a population-based registry that collects information on cancer cases in Mississippi. In 1993, the Mississippi Legislature passed a law (Mississippi Code 41-91) mandating the collection of these data. Under the authorizing legislation, clinical laboratories, hospitals, physician's offices, cancer treatment centers, and other health care providers are required to report diagnostic and treatment information on cancer cases they diagnose or treat to the Mississippi Cancer Registry. The law stresses the confidential nature of data released to the MCR. MCR requires that the

data collected include information which indicates diagnosis, stage of disease, medical history, patient demographics, laboratory data, tissue diagnosis and radiation, surgical or other methods of diagnosis or treatment for each cancer diagnosed or treated in Mississippi. MCH data are used: to inform health professionals and educate citizens regarding specific cancer risks; to answer public questions and concerns about cancer; to focus cancer control activities in the state; to monitor the occurrence of cancer; to aid in research studies; and to develop health services and screening programs. More information can be found at: <http://www.umc.edu/mcr/>.

Youth Risk Behavior Surveillance System (YRBSS)

YRBSS monitors priority health risk behaviors that contribute markedly to the leading causes of death, disability, and social problems among youth in the U.S. These behaviors, often established during childhood and early adolescence, include tobacco use, unhealthy dietary behaviors, inadequate physical activity, alcohol and other drug use, risky sexual behaviors, and behaviors that contribute to unintentional injuries and violence. Conducted as a school-based survey every two years, YRBSS includes national, state, and local representative samples of students in grades 9 - 12. As with all self-reported sample surveys, YRBSS data might be subject to systematic error resulting from noncoverage (e.g., no participation by certain schools), nonresponse (e.g., refusal to participate in the survey or to answer specific questions), or measurement (e.g., social desirability or recall bias). Further information on YRBSS is available from the survey website at: <http://www.cdc.gov/HealthyYouth/yrbs>.

Statistical Techniques

Statistical Analyses

Data for the indicators from the *Indicators for Chronic Disease Surveillance* report were analyzed using numerators and denominators specified in the report. The specified numerators and denominators were used to calculate and report on chronic disease prevalence, hospitalizations and mortality rates. All prevalence estimates from BRFSS and YRBSS used survey weights and accounted for design effects. Estimates were not reported for those categories in which there were fewer than 50 respondents.

Age-Adjusted Estimates

The age-adjusted percentage is an artificial estimate that minimizes the effects of different age distributions and allows comparisons between different populations. It represents what the crude percentage would have been in the study population if that population had the same age distribution as a standard population (that is, a population in which the age composition is known precisely, for example, as a result of a census). In other words, age adjustment can make different groups more comparable. For this report, we used the U.S. 2000 standard population distribution to adjust death and hospitalization rates. The age-adjusted rates are rates that would have existed if the population under study had been distributed by age the same way as in the "standard" population. Therefore, they are summary measures adjusted for differences in age distributions.

Testing for Significance

For BRFSS and YRBSS data, confidence intervals were used to test for significant differences between subgroups (e.g., gender, race, education and poverty level). Z-scores were used to test for differences in mortality rates between subgroups (e.g., age, gender and race).

Reported differences between subgroups are statistically significant unless otherwise noted.

List of Abbreviations

BRFSS: Behavioral Risk Factor Surveillance System

CDC: Centers for Disease Control and Prevention

CDI: Chronic Disease Indicators

CI: Confidence Interval

CSTE: Council of State and Territorial Epidemiologists

CVD: Cardiovascular Disease

FPL: Federal Poverty Level

GIS: Geographic Information System

ICD: International Classification of Diseases

MS: Mississippi

MSDH: Mississippi State Department of Health

MSTAHRs: Mississippi Statistically Automated Health Resource System

NCHS: National Center for Health Statistics

US: United States

YRBSS: Youth Risk Behavior Surveillance System

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