HEALTH RISK BEHAVIORS WITHIN THE STATE OF MICHIGAN

2016 BEHAVIORAL RISK FACTOR SURVEY

30TH ANNUAL REPORT

MDHHS

Michigan Department of Health & Human Services

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2016 Behavioral Risk Factor Survey

Health Risk Behaviors within the State of Michigan

www.michigan.gov/brfs

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BRFSS Methods

The Michigan Behavioral Risk Factor Survey (MiBRFS) is an annual, statewide telephone survey of Michigan adults aged 18 years and older that is conducted through a collaborative effort between the Population Health Surveillance Branch (PHSB) of the Centers for Disease Control and Prevention (CDC), the Michigan State University Institute for Public Policy and Social Research (IPPSR), and the Michigan Department of Health & Human Services (MDHHS). Michigan Behavioral Risk Factor Surveillance System (MiBRFSS) data contribute to the CDC Behavioral Risk Factor Surveillance System (BRFSS) that is conducted within every state, the District of Columbia, and several U.S. territories.

In 2016, the MiBRFS collected data from both landline and cell phone respondents. The sample of landline telephone numbers was selected using a list-assisted, random-digit-dialed methodology with a disproportionate stratification based on phone bank density, and whether or not the phone numbers were directory listed. The sample of cell phone numbers was randomly selected from dedicated cellular telephone banks sorted on the basis of area code and exchange.

A weighting methodology known as iterative proportional fitting or raking was used in 2016 to allow for the incorporation of cell phone data and to improve the accuracy of prevalence estimates based on MiBRFS data. Estimates based on this weighting methodology were weighted to adjust for the probabilities of selection and a raking adjustment factor that adjusted for the distribution of the Michigan adult population by telephone source (landline or cell phone), detailed race/ethnicity, education level, marital status, age by gender, gender by race/ethnicity, age by race/ethnicity, and renter/owner status.

Due to the BRFSS methodology changes that were implemented in 2011, the 2016 MiBRFS estimates provided within this report should only be compared to estimates from 2011-2016 and not to estimates from years prior to 2011.

Prevalence estimates and asymmetric 95% confidence intervals (95% CIs) were calculated using SAS-Callable SUDAAN (version 11.0.1), a statistical computing program that was designed for analyzing data from multistage sample surveys.[1] If the 95% CIs for two estimates from different subpopulations or survey years did not overlap, they were considered to be statistically different. Unless otherwise specified, respondents who answered that they did not know or refused to answer were not included in the calculation of estimates. For comparison purposes, the median estimates from all 50 states and the District of Columbia were used as national estimates.

In addition to this report, the MiBRFSS releases several additional publications each year. These publications provide statewide health estimates for Michigan adults as well as estimates among demographic and geographic subpopulations. MiBRFSS Surveillance Briefs are also published on a quarterly basis and highlight new topical data from the MiBRFSS, including data from MiBRFSS state-added questions. All of these publications can be found on the MiBRFSS website (www.michigan.gov/brfs).

Sample Results for the 2016 MiBRFS

The total sample size for the 2016 MiBRFS was 12,024 (landline = 4,797; cell phone = 7,227). The response rate for the landline portion of the 2016 MiBRFS was 52.2%, while the response rate for the cell phone portion of the survey was 45.8%. The overall weighted response rate (landline and cell phones combined) for the 2015 MiBRFS was 49.6%. The overall weighted U.S. median response rate for 2016 was 47.0%.[2]

Over the past several years, MDHHS has been able to maintain an annual MiBRFS sample size of at least 8,000 completed interviews. A larger annual sample size increases the utility of the survey by providing more precise estimates, allowing for an increased number of topics to be covered each year, and enables the calculation of estimates for more demographic and geographic subpopulations.

Number of Interviews by Survey Year Michigan BRFS 2000-2016
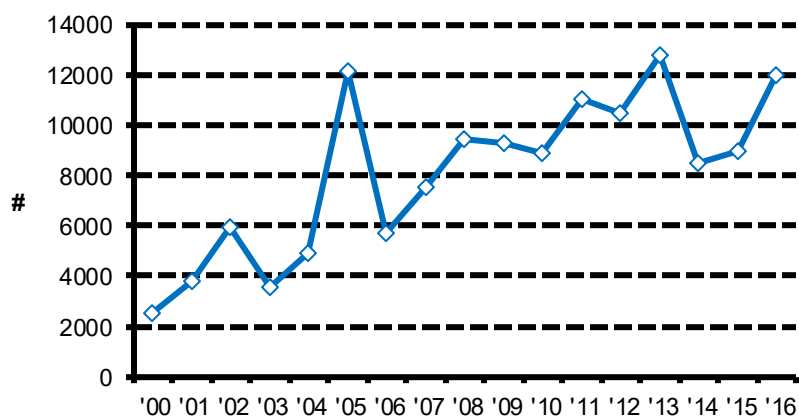
Summary

This report presents estimates from the 2016 MiBRFS, a statewide landline and cell phone survey of Michigan residents aged 18 years and older. It is the only source of state-specific, population-based estimates of the prevalence of various health behaviors, medical conditions, and preventive health care practices among Michigan adults. The survey findings are used by public health agencies, academic institutions, nonprofit organizations, and others to develop programs that promote the health of Michigan citizens.

All of the results from the 2016 MiBRFS presented within this report have been weighted as described in the methods section and can be interpreted as prevalence estimates among the Michigan adult population. Due to the BRFSS methodology changes that took place in 2011, these estimates should only be compared to MiBRFS estimates from 2011-2016 and not to MiBRFS estimates from years prior to 2011.

Selected Risk Factors - 2016 CDC BRFSS
U.S. vs. Michigan
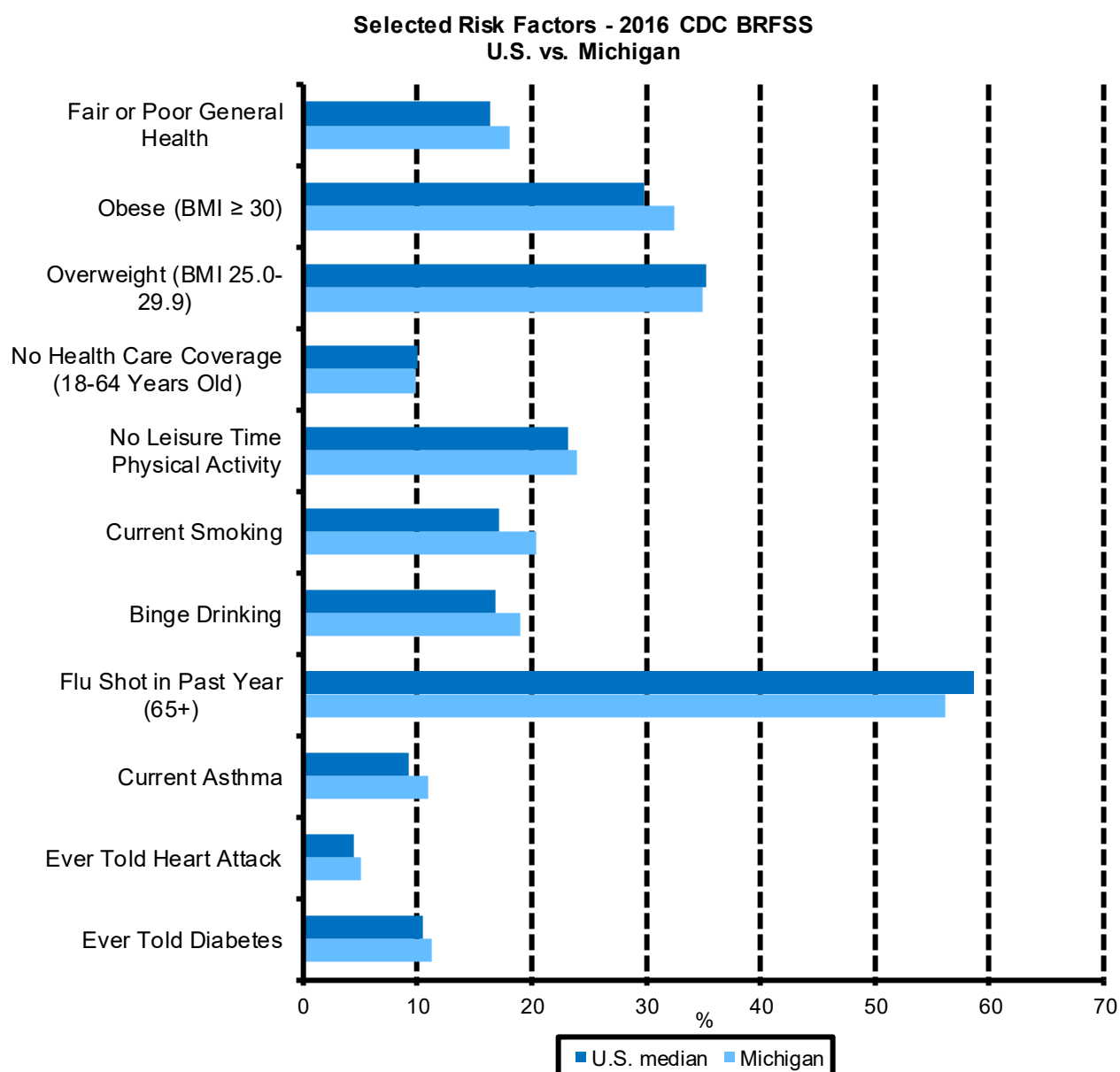
Summary, continued

Public Health Implications of Findings

A number of themes emerge from the findings of the 2016 MiBRFS that have implications for public health.

� Michigan continues to make strides in increasing access to health care coverage.

In 2016, an estimated 9.9% (95% CI: 9.0-10.8) of Michigan adults aged 18-64 years reported not having any form of health care coverage. This represents a significant decrease of 6.7 percentage points since 2012 (16.6%). From 2012 to 2016, the prevalence of no health care coverage decreased among males (2012: 18.9% vs. 2016: 11.3%) and females (2012: 14.2% vs. 2016: 8.5%), as well as White, non-Hispanic (2012: 15.1% vs. 2016: 8.2%) and Black, non-Hispanic adults (2012: 24.3% vs. 2016: 14.6%). The Healthy Michigan Plan, which was implemented on April 1, 2014, makes health care benefits available to individuals at a low cost. As the Healthy Michigan Plan continues, we hope to observe further decreases in the number of Michigan adults aged 18-64 years who report not having any form of health care coverage.

✕ Multiple chronic conditions continue to be a problem among Michigan adults.

In 2016, an estimated 23.1% of Michigan adults reported that they had ever been told by a doctor that they had two or more of the following chronic health conditions: diabetes, cardiovascular disease, current asthma, COPD, cancer, arthritis, kidney disease, and/or depression. Furthermore, an additional 27.3% reported ever having only one of these chronic health conditions. The prevalence of multiple chronic conditions increased with age, and was significantly higher among females (24.9%) than males (21.0%). The prevalence of multiple chronic conditions was significantly lower in Hispanic adults as compared to both Black, non-Hispanic and White, non-Hispanic adults. The prevalence of multiple chronic conditions was significantly higher among the less educated and lower household income groups. Through public health efforts, such as the Million Hearts Initiative, MDHHS chronic disease programs continue to work collaboratively toward reducing the burden of these chronic conditions within the Michigan adult population.

✕ Racial disparities in weight status among Michigan adults has decreased.

In 2016, an estimated 32.5% of Michigan adults were classified as being obese (BMI ≥ 30.0). In 2014, the disparity in obesity had diminished with the prevalence of obesity among Black, non-Hispanic adults (33.6%) being similar to that of White, non-Hispanic adults (30.2%). The racial disparity had reemerged in 2015 with 40.2% of Black, non-Hispanic adults reporting obesity compared to only 29.8% of White, non-Hispanic adults. However, in 2016, there is a smaller gap in prevalence of obesity between Black, non-Hispanic (38.4%) and White, non-Hispanic adults (32.0%). In addition to targeting Michigan's high burden populations, the Michigan Nutrition, Physical Activity and Obesity Program continues to develop initiatives that focus on improving nutrition and increasing physical activity among the Michigan population.

✕ Smoking and secondhand smoke exposure have stabilized, but more progress is needed.

In 2016, an estimated 20.4% of Michigan adults reported that they currently smoke cigarettes on a regular basis. Unfortunately, this means that one in every five Michigan adults currently smoke cigarettes. Even with the passage of the Michigan Smoke-Free Air Law on May 1, 2010, secondhand smoke exposure continues to be a problem in Michigan with an estimated 25.5% of adults reporting that they were exposed to secondhand smoke in their home or in a car within the past seven days. When focusing only on non-smokers, the prevalence of secondhand smoke exposure during the past seven days decreases to 15.4 (95% CI: 14.2-16.7). With a sustained emphasis on smoking cessation and smoke-free regulations, the MDHHS Tobacco Program anticipates that the prevalence of smoking and secondhand smoke exposure will start to decrease again within the coming years.

✕ Binge drinking among Michigan adults remains higher than the U.S. median.

In 2016, an estimated 19.0% of Michigan adults reported having at least one binge drinking episode within the past month. The prevalence of binge drinking among Michigan adults is significantly higher than the U.S. median binge drinking prevalence (16.9%). With exception of the 2010 survey year, the prevalence of binge drinking among Michigan adults has been higher than the U.S. median for the past decade. MDHHS' Alcohol Surveillance Program provides data and statistics to local health departments and organizations committed to reducing adverse impacts of excessive alcohol consumption through the use of environmental and policy interventions described within the Guide to Community Preventive Services (http://www.thecommunityguide.org/index.html). MDHHS programs work in concert with local coalitions and other stakeholders to address excessive alcohol consumption throughout the state.

Summary, continued

Future of the Michigan Behavioral Risk Factor Survey

The target sample size for the 2017 MiBRFS is 10,900 total completed interviews. Of these 10,900 interviews, 4,360 will be completed with landline respondents, while the remaining 6,540 will be completed with cell phone respondents. The 2017 questionnaire will include approximately 100 state-added questions on numerous topics, including arthritis management, cancer survivorship, caregiving, radon awareness, binge drinking, family planning, and cognitive decline, gambling, and reactions to race. The full 2017 MiBRFS questionnaire is available on the MiBRFSS website (www.michigan.gov/brfs).

The BRFSS continues to adapt to challenges and expand its utility. The representativeness and validity of MiBRFS estimates has been improved. For example, due to the drastic increase in the utilization of cell phone communication, the BRFSS now collects over half of the data from cell phone respondents. Furthermore, the CDC has implemented a new raking weighting methodology so that BRFSS estimates are more representative than ever before. Michigan has also expanded the utility of the MiBRFS through the following projects:

- The maintenance of a larger MiBRFS sample size will allow for more precise estimates among racial/ethnic populations, especially when multiple years of data are combined.
- Standalone BRFS-like oversample surveys of minority subpopulations are conducted on an annual basis as funding is available. The results of these minority oversample surveys are available on the MiBRFSS website.
- Since 2005, questions have been included that randomly select one child in each household and obtain demographic characteristics of that child. This information allows us to ask health-related questions about this child and then to calculate estimates for childhood conditions, such as asthma.
- An Asthma Call-Back survey that follows up on children and adults who were identified as having asthma during the MiBRFS interview has been conducted since 2005, allowing for collection of more detailed information on asthma management, clinical care, and impact of the disease on people's lives. It is anticipated that this methodology could be useful for other subpopulations in the future.
- MiBRFSS estimates are used as progress indicators for federal grants focusing on the prevention and control of diabetes, heart disease, obesity and their associated risk factors (CDC 1422/1305).
- The MiBRFSS is a main source of data for a number of the chronic disease and health promotion indicators that are routinely updated and readily available on the MDHHS website.
- The MiBRFSS is the source for seven of the 20 indicators included within the Michigan Health and Wellness Dashboard (https://midashboard.michigan.gov/health-and-wellness). This project provides a quick assessment of the health and wellness of Michigan residents.
- Several BRFSS indicators are used in the Robert Wood Johnson County Health Rankings. These rankings measure the overall health of nearly all counties within the United States and rank them within states.

In conclusion, the MiBRFS continues to serve the needs of public health officials, health care providers, researchers and local and state level policy makers, while presenting a number of opportunities for expanding our understanding of the risk factors and preventive behaviors for the major causes of disease and disability in Michigan.

General Health Status

Self-assessed health is a measure of how a person perceives their own health. Self-assessed health status has been validated as a useful indicator of health among different populations and allows for broad comparisons across a variety of health conditions.[3]

♦ In 2016, an estimated 18.0% of Michigan adults reported that their general health was either fair or poor.

♦ Fair or poor general health increased with age and decreased with increasing household income level.

♦ The prevalence of fair or poor general health was similar by gender and health insurance status.

♦ White, non-Hispanic adults (17.1%) reported a significantly lower prevalence of fair or poor general health than Black, non-Hispanic adults (24.3%).

♦ Adults with disabilities (45.7%) reported a significantly higher prevalence of fair to poor health than adults without disabilities (8.3%).

♦ The BRFSS methodology changes that were implemented in 2011 resulted in a spike in the prevalence of fair or poor general health among Michigan adults, but since these changes, the prevalence of fair to poor general health has remained within the 16%-18% range.

♦ In 2016, the prevalence of fair or poor general health among Michigan adults (18.0%) was higher that that of the U.S. median prevalence (16.4%).

Demographic Characteristics	General Health, Fair or Poor[a]	
	%	95% Confidence Interval
Total	**18.0**	**(17.2-18.9)**
Age		
18 - 24	10.9	(8.6-13.7)
25 - 34	12.1	(10.0-14.6)
35 - 44	15.1	(12.9-17.5)
45 - 54	21.0	(18.7-23.4)
55 - 64	22.8	(20.9-24.9)
65 - 74	21.1	(19.1-23.3)
75 +	25.8	(23.2-28.6)
Gender		
Male	16.9	(15.7-18.2)
Female	19.1	(17.9-20.4)
Race/Ethnicity		
White, non-Hispanic	17.1	(16.2-18.1)
Black, non-Hispanic	24.3	(21.5-27.4)
Other, non-Hispanic	15.1	(12.1-18.5)
Hispanic	17.7	(13.0-23.6)
Household Income		
< $20,000	37.4	(34.4-40.5)
$20,000 - $34,999	22.4	(20.1-24.8)
$35,000 - $49,999	15.0	(12.9-17.4)
$50,000 - $74,999	12.6	(10.7-14.7)
≥ $75,000	6.6	(5.6-7.7)
Health Insurance		
Insured	18.1	(17.2-19.0)
Uninsured	17.6	(14.3-21.5)
Disability Status		
No disabilities	8.3	(7.5-9.1)
Adults with disabilities	45.7	(43.5-47.9)

[a] Among all adults, the proportion reporting that their health, in general, was either fair or poor.
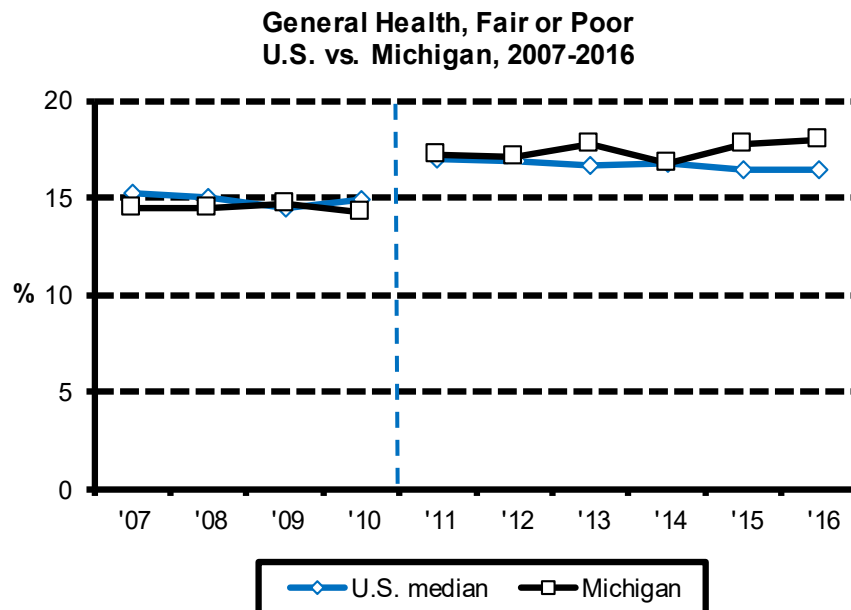
General Health, Fair or Poor
U.S. vs. Michigan, 2007-2016

Legend: U.S. median — Michigan

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

Quality of Life

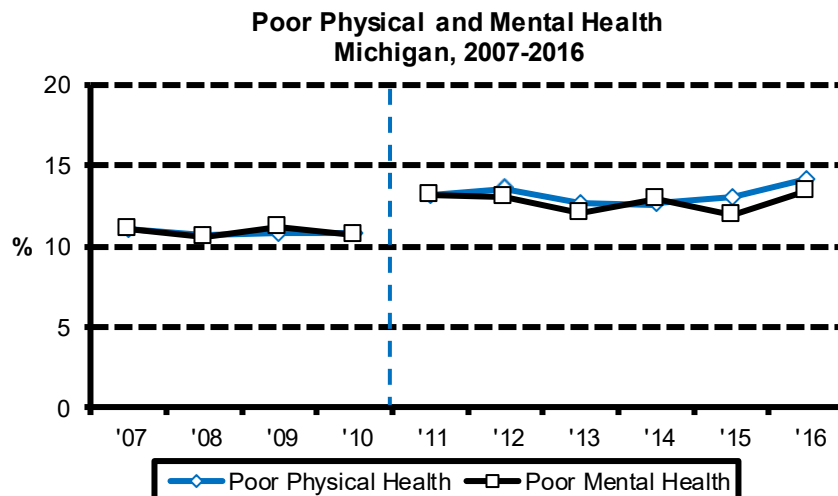Physically and mentally unhealthy days measure the number of days within the past 30 days that individuals rate their physical and mental health as not good. Poor physical and mental health was defined as 14 or more days within the past 30 days in which the adult respondents rated their physical and mental health as not good.

♦ In 2016, an estimated 14.1% of Michigan adults reported poor physical health and 13.4% reported poor mental health.

♦ Poor physical health increased with age, while poor mental health decreased with age.

♦ Both poor physical health and poor mental health decreased with increasing household income level.

♦ Females reported higher prevalences of both poor physical health and poor mental health (15.5% and 15.3%, respectively) than males (12.6% and 11.4%, respectively).

♦ The prevalence of both poor physical health and poor mental health was similar by race/ethnicity.

♦ Adults with disabilities (41.8% and 28.1%, respectively) were more likely to have reported both poor physical health and poor mental health than adults without disabilities (4.6% and 8.4%, respectively).

♦ The BRFSS methodology changes that were implemented in 2011 resulted in a spike in the prevalence of poor physical and mental health among Michigan adults, but these prevalences have plateaued since 2011.

Demographic Characteristics	Poor Physical Health[a]		Poor Mental Health[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**14.1**	**(13.3-14.9)**	**13.4**	**(12.6-14.3)**
Age				
18 - 24	7.9	(5.9-10.6)	18.0	(15.0-21.3)
25 - 34	8.1	(6.4-10.3)	16.1	(13.7-18.9)
35 - 44	11.4	(9.5-13.7)	15.6	(13.3-18.1)
45 - 54	16.4	(14.3-18.6)	13.7	(11.9-15.7)
55 - 64	20.8	(18.9-22.9)	13.2	(11.6-15.0)
65 - 74	16.0	(14.2-17.9)	7.3	(6.1-8.8)
75 +	18.5	(16.2-21.0)	6.7	(5.3-8.5)
Gender				
Male	12.6	(11.5-13.8)	11.4	(10.3-12.7)
Female	15.5	(14.4-16.7)	15.3	(14.2-16.5)
Race/Ethnicity				
White, non-Hispanic	14.4	(13.5-15.3)	12.9	(12.0-13.9)
Black, non-Hispanic	13.7	(11.5-16.3)	15.2	(12.7-18.2)
Other, non-Hispanic	11.2	(8.8-14.0)	12.3	(9.6-15.7)
Hispanic	13.3	(9.0-19.1)	17.0	(12.1-23.2)
Household Income				
< $20,000	30.0	(27.2-33.0)	25.2	(22.4-28.2)
$20,000 - $34,999	17.0	(15.0-19.2)	16.0	(13.8-18.4)
$35,000 - $49,999	12.3	(10.4-14.4)	12.4	(10.4-14.8)
$50,000 - $74,999	9.6	(7.9-11.5)	9.6	(7.8-11.6)
≥ $75,000	5.5	(4.5-6.6)	6.9	(5.8-8.3)
Health Insurance				
Insured	14.2	(13.4-15.0)	13.0	(12.1-13.8)
Uninsured	13.7	(10.6-17.4)	18.7	(15.1-23.0)
Disability Status				
No disabilities	4.6	(4.0-5.2)	8.4	(7.6-9.3)
Adults with disabilities	41.8	(39.6-44.0)	28.1	(26.0-30.3)

[a] Among all adults, the proportion reporting 14 or more days of poor physical health, which includes physical illness and injury, during the past 30 days.
[b] Among all adults, the proportion reporting 14 or more days of poor mental health, which includes stress, depression, and problems with emotions during the past 30 days.

Poor Physical and Mental Health
Michigan, 2007-2016

Legend: Poor Physical Health — Poor Mental Health

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
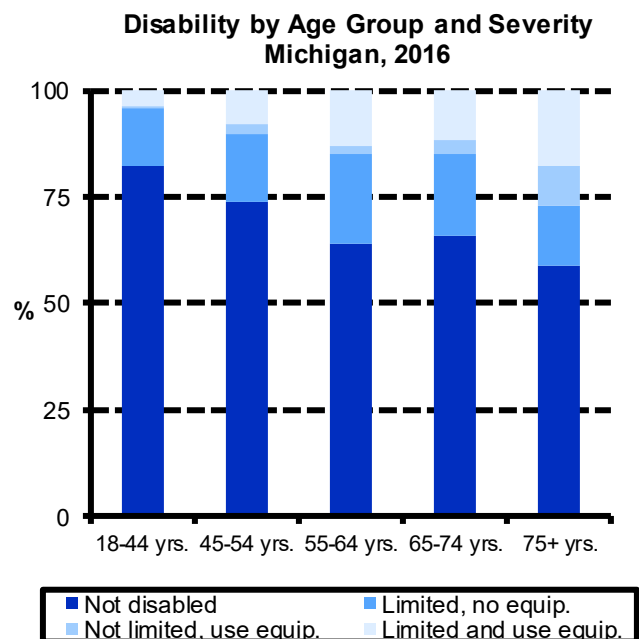
Disability

Through the Americans with Disabilities Act, an individual with a disability is defined as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history of such an impairment, or a person who is perceived by others as having such an impairment.[4]

♦ In 2016, an estimated 26.7% of Michigan adults reported being disabled, which was defined as being limited in any activities because of physical, mental, or emotional problems or requiring the use of special equipment, such as a cane, a wheelchair, a special bed, or a special telephone due to a health problem.

♦ When looking at each component of the disability indicator, an estimated 24.3% of Michigan adults reported being limited in their activities, while 10.7% reported that they required the use of special equipment due to a health problem.

♦ The prevalence of disability increased with age and decreased with increasing household income level.

♦ Hispanic adults (18.2%) reported a significantly lower prevalence of disability than White, non-Hispanic adults (27.3%).

♦ The prevalence of disability was similar by gender and race/ethnicity.

♦ The prevalence of disability is significantly higher for Michigan adults with insurance.

♦ When assessing disability by age group and severity, Michigan adults 75 years and older reported more severe disability (i.e., both activities limited and use of special equipment) when compared to all other age groups.

Demographic Characteristics	Total Disability[a]	
	%	95% Confidence Interval
Total	**26.7**	**(25.7-27.8)**
Age		
18 - 24	12.9	(10.4-15.9)
25 - 34	18.4	(15.7-21.4)
35 - 44	21.4	(18.9-24.3)
45 - 54	26.5	(24.1-29.0)
55 - 64	36.0	(33.7-38.3)
65 - 74	34.3	(31.9-36.7)
75 +	41.2	(38.2-44.3)
Gender		
Male	25.4	(24.0-27.0)
Female	28.0	(26.6-29.4)
Race/Ethnicity		
White, non-Hispanic	27.3	(26.2-28.5)
Black, non-Hispanic	27.1	(24.1-30.3)
Other, non-Hispanic	22.5	(18.7-26.8)
Hispanic	18.2	(13.3-24.3)
Household Income		
< $20,000	49.0	(45.8-52.3)
$20,000 - $34,999	29.6	(27.1-32.2)
$35,000 - $49,999	24.9	(22.3-27.6)
$50,000 - $74,999	22.5	(20.1-25.1)
≥ $75,000	14.0	(12.6-15.5)
Health Insurance		
Insured	27.3	(26.3-28.4)
Uninsured	21.3	(17.7-25.5)

[a] Among all adults, the proportion reporting being limited in any activities because of physical, mental, or emotional problems, or reporting that they required the use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem.

Disability by Age Group and Severity Michigan, 2016

Legend: Not disabled; Limited, no equip.; Not limited, use equip.; Limited and use equip.

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

Weight Status

Overweight and obesity have been proven to increase the risk of many diseases and health conditions such as high blood pressure, diabetes, coronary heart disease, stroke, gallbladder disease, high cholesterol, and some forms of cancer.[5] The medical care costs associated with adult obesity in the U.S. is projected to be in the $150 billion range.[6] Overweight is defined as having a body mass index (BMI) between 25.0 and 29.9, and obesity is defined as a BMI greater than or equal to 30.0.

- In 2016, an estimated 32.5% of Michigan adults were classified as obese, with an additional 35.0% of Michigan adults being classified as overweight. The prevalence of obesity in Michigan is slightly higher than the U.S. median prevalence (29.9%), while the prevalence of overweight is comparable to that of the U.S. median (35.3%).

- The prevalence of obesity increased through the 65-74 year age group and then dropped within the 75+ years age group.

- The prevalence of obesity was similar by gender and health insurance status.

- Black, non-Hispanic adults (38.4%) reported a significantly higher prevalence of obesity than White, non-Hispanic adults (32.0%).

- Adults with disabilities (43.1%) were more likely to be classified as obese than adults without disabilities (28.9%).

- Adults reporting no leisure time physical activity were more likely to report being obese (42.7% [40.3-45.1]) than those who were physically active (29.3% [28.1-30.6]).

- The Healthy People (HP) 2020 target for obesity among adults is set at 30.5%. In order to meet this target, the obesity prevalence among Michigan adults will need to decrease by 2 percentage points over the next four years.[7]

Demographic Characteristics	Obese[a]	
	%	95% Confidence Interval
Total	**32.5**	**(31.4-33.6)**
Age		
18 - 24	21.7	(18.4-25.4)
25 - 34	29.0	(25.8-32.3)
35 - 44	38.0	(34.9-41.3)
45 - 54	36.8	(34.1-39.5)
55 - 64	35.0	(32.8-37.3)
65 - 74	36.4	(34.0-38.9)
75 +	26.5	(23.8-29.4)
Gender		
Male	32.3	(30.8-34.0)
Female	32.6	(31.1-34.1)
Race/Ethnicity		
White, non-Hispanic	32.0	(30.8-33.3)
Black, non-Hispanic	38.4	(35.0-42.0)
Other, non-Hispanic	20.9	(17.3-25.0)
Hispanic	37.3	(30.6-44.4)
Household Income		
< $20,000	36.8	(33.7-39.9)
$20,000 - $34,999	34.4	(31.7-37.2)
$35,000 - $49,999	37.0	(33.9-40.2)
$50,000 - $74,999	32.9	(30.1-36.0)
≥ $75,000	27.7	(25.8-29.8)
Health Insurance		
Insured	32.6	(31.5-33.8)
Uninsured	31.7	(27.4-36.4)
Disability Status		
No disabilities	28.9	(27.6-30.2)
Adults with disabilities	43.1	(40.8-45.3)

Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/(height in meters)^2]. Weight and height were self-reported. Pregnant women were excluded.
[a] Among all adults, the proportion of respondents whose BMI was greater than or equal to 30.0.
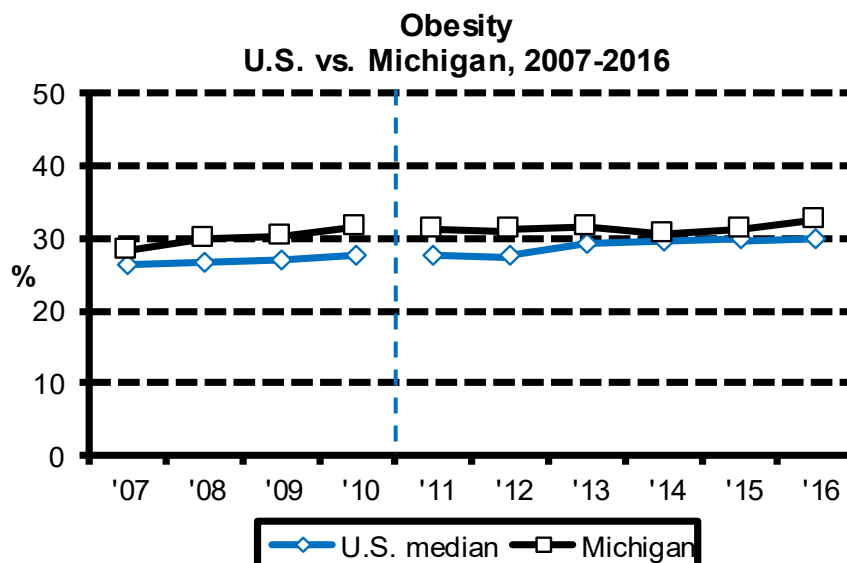
Obesity
U.S. vs. Michigan, 2007-2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

No Health Care Coverage (Among Adults 18 - 64 Years)

Adults who do not have health care coverage are less likely to access health care services and are more likely to delay getting needed medical attention.[8]

- In 2016, an estimated 9.9% of Michigan adults aged 18-64 years reported having no health care coverage. The prevalence of no health care coverage among Michigan adults 18-64 years of age is similar to the U.S. median prevalence (10.0%).

- The prevalence of no health care coverage decreased with age and increasing household income level.

- Males (11.3%) reported a significantly higher prevalence of no health care coverage than females (8.5%).

- Hispanic adults (18.2%) and Black, non-Hispanic adults (14.6%) both reported a higher prevalence of no health care coverage than White, non-Hispanic adults (8.2%).

- The prevalence of no health care coverage was significantly lower in Michigan adults with disabilities.

- The HP 2020 target for health care coverage is to have 100% of adults insured by 2020. Since the prevalence of no health care coverage among Michigan adults 18-64 years of age is currently at 9.9%, this prevalence will need to decrease by roughly 2.5 percentage points each year in order to meet the HP 2020 goal.[7]

Demographic Characteristics	No Health Care Coverage Among Adults 18-64 Years[a]	
	%	95% Confidence Interval
Total	**9.9**	**(9.0-10.8)**
Age		
18 - 24	12.1	(9.7-15.0)
25 - 34	12.7	(10.4-15.3)
35 - 44	10.8	(8.8-13.2)
45 - 54	8.0	(6.5-9.8)
55 - 64	6.7	(5.5-8.2)
Gender		
Male	11.3	(10.0-12.7)
Female	8.5	(7.3-9.7)
Race/Ethnicity		
White, non-Hispanic	8.2	(7.3-9.1)
Black, non-Hispanic	14.6	(11.8-18.0)
Other, non-Hispanic	13.5	(9.4-18.9)
Hispanic	18.2	(13.0-25.0)
Household Income		
< $20,000	14.8	(12.1-18.0)
$20,000 - $34,999	17.2	(14.5-20.4)
$35,000 - $49,999	12.1	(9.5-15.3)
$50,000 - $74,999	6.0	(4.2-8.3)
≥ $75,000	2.9	(2.2-3.9)
Disability Status		
No disabilities	8.5	(7.7-9.4)
Adults with disabilities	6.3	(5.2-7.6)

[a] Among adults aged 18-64 years, the proportion who reported having no health care coverage, including health insurance, prepaid plans such as HMOs, or government plans, such as Medicare or Indian Health Services.

No Health Care Coverage
Among Adults Aged 18 to 64 Years
U.S. vs. Michigan, 2007-2016
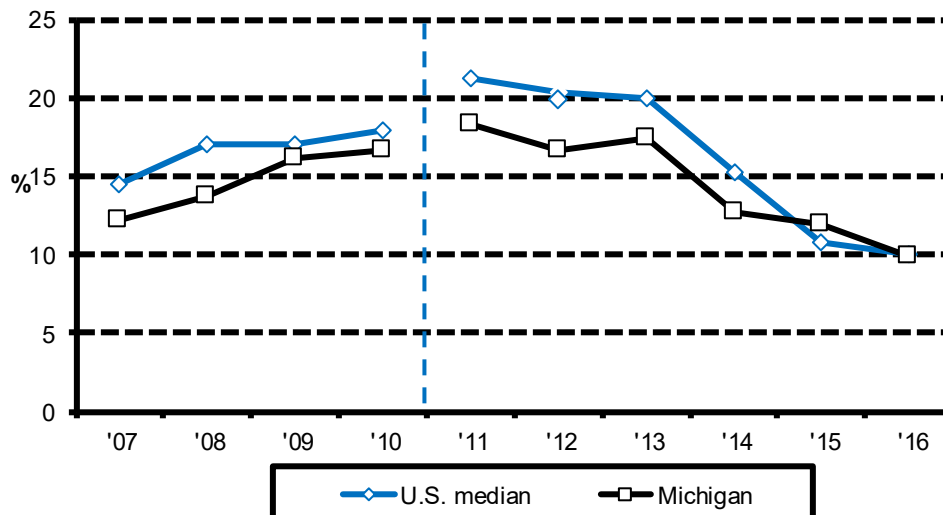
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
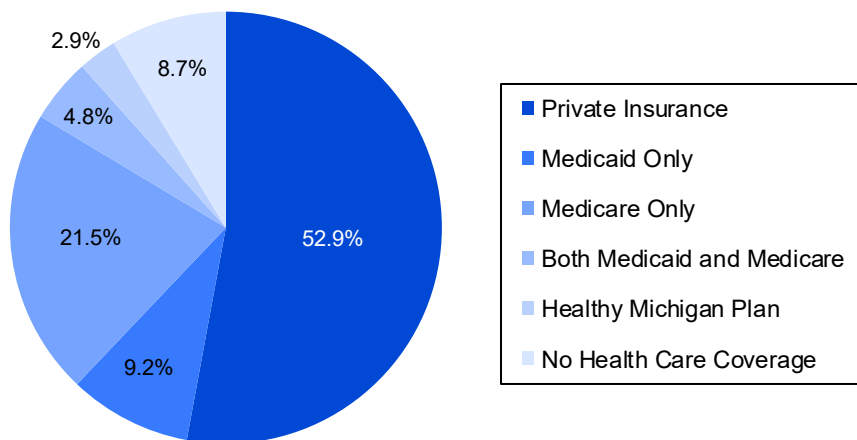
Health Insurance Type (Among Adults 18+ Years)

There are several different types of health insurance plans, all of which are designed to meet slightly different needs.[9]

- In 2016, an estimated 52.9% of Michigan adults reported having private insurance, 9.2% reported having Medicaid only, 2.9% reported having Healthy Michigan Plan, and 8.7% reported having no health care coverage.

- Females (11.4%) were more likely than males (6.7%) to have Medicaid only.

- White, non-Hispanic adults (55.7%) were more likely to have private insurance than Black, non-Hispanic adults (35.1%).

- Adults with disabilities (13.0%) were more likely to have Medicaid only than adults without disabilities (7.8%).

- An estimated 35.5% of Michigan adults had Medicaid, Medicare, or both types of health coverage.

Demographic Characteristics	Private Insurance[a] %	95% Confidence Interval	Medicaid Only[a] %	95% Confidence Interval	Healthy Michigan Plan[a] %	95% Confidence Interval	No Health Care Coverage[a] %	95% Confidence Interval
Total	52.9	(51.7-54.1)	9.2	(8.4-9.9)	2.9	(2.5-3.3)	8.7	(8.0-9.5)
Age								
18 - 24	63.1	(58.9-67.2)	12.4	(9.8-15.5)	3.1	(1.9-5.1)	14.1	(11.3-17.4)
25 - 34	58.3	(54.7-61.8)	18.5	(15.8-21.5)	4.1	(3.0-5.6)	13.8	(11.3-16.7)
35 - 44	67.3	(64.1-70.4)	10.7	(8.8-13.0)	4.5	(3.3-6.1)	11.4	(9.3-13.8)
45 - 54	71.2	(68.5-73.7)	8.5	(7.1-10.2)	2.9	(2.1-3.9)	8.2	(6.7-10.0)
55 - 64	67.8	(65.6-70.1)	6.5	(5.4-7.9)	3.5	(2.8-4.5)	7.0	(5.7-8.5)
65 - 74	6.9	(5.8-8.2)	2.7	(1.9-3.7)	--[b]	--[b]	2.1	(1.4-3.2)
75 +	4.0	(3.0-5.4)	2.6	(1.7-3.8)	--[b]	--[b]	2.2	(1.4-3.4)
Gender								
Male	55.2	(53.5-57.0)	6.7	(5.8-7.7)	2.8	(2.3-3.5)	10.2	(9.1-11.5)
Female	50.7	(49.2-52.3)	11.4	(10.3-12.6)	2.9	(2.4-3.5)	7.3	(6.4-8.4)
Race/Ethnicity								
White, non-Hispanic	55.7	(54.4-57.0)	7.5	(6.8-8.3)	2.5	(2.1-2.9)	7.0	(6.3-7.8)
Black, non-Hispanic	35.1	(31.8-38.6)	17.5	(14.9-20.5)	5.4	(4.0-7.3)	13.7	(11.2-16.7)
Other, non-Hispanic	55.4	(49.8-60.9)	10.3	(7.5-13.9)	2.0	(1.1-3.6)	13.5	(9.6-18.9)
Hispanic	53.6	(46.3-60.7)	12.3	(8.2-18.1)	--[b]	--[b]	18.4	(13.1-25.2)
Household Income								
< $20,000	16.2	(13.9-18.8)	27.3	(24.4-30.4)	8.8	(6.9-11.3)	16.0	(13.2-19.2)
$20,000 - $34,999	34.2	(31.5-37.0)	13.1	(11.1-15.4)	3.4	(2.3-4.9)	13.1	(10.8-15.8)
$35,000 - $49,999	54.0	(50.8-57.3)	5.4	(3.9-7.3)	--[b]	--[b]	9.7	(7.5-12.3)
$50,000 - $74,999	69.4	(66.6-72.1)	2.3	(1.5-3.6)	--[b]	--[b]	10.0	(7.7-12.8)
≥ $75,000	83.5	(82.0-84.9)	1.0	(0.7-1.6)	0.7	(0.4-1.4)	4.8	(3.6-6.2)
Disability Status								
No disabilities	61.2	(59.9-62.6)	7.8	(7.0-8.7)	2.5	(2.1-3.0)	8.8	(7.9-9.8)
Adults with disabilities	31.8	(29.7-33.9)	13.0	(11.5-14.8)	3.9	(3.0-4.9)	6.5	(5.4-7.9)

[a] Among all adults, the proportion who reported currently having private insurance, Medicaid only, Healthy Michigan Plan or no health care coverage. All of the insurance types included within this question can be found within the table below.
[b] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Health Insurance Type
Michigan, 2016

Pie chart legend:
- Private Insurance — 52.9%
- Medicaid Only — 9.2%
- Medicare Only — 21.5%
- Both Medicaid and Medicare — 4.8%
- Healthy Michigan Plan — 2.9%
- No Health Care Coverage — 8.7%

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
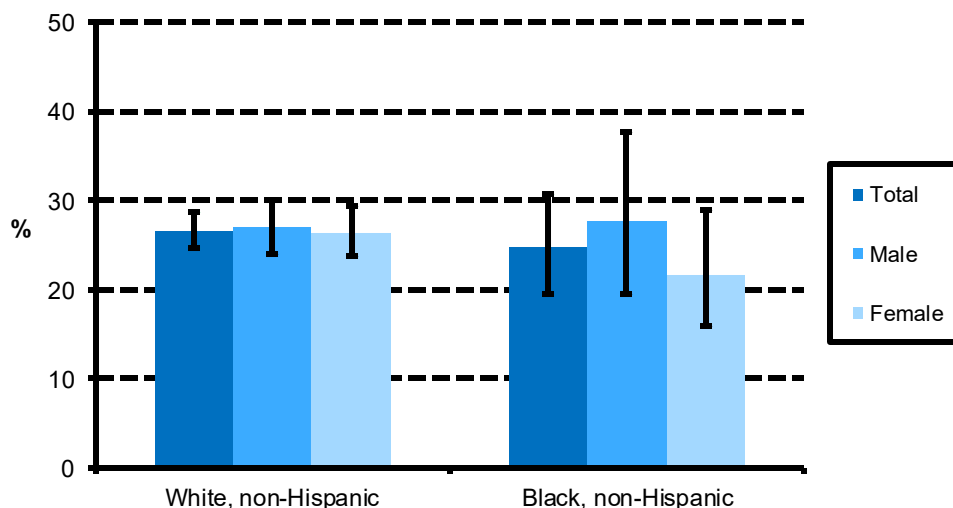
6

No Dental Care Coverage

For every person without medical insurance, there are nearly three people without dental insurance. Among those without dental coverage, only half of these individuals report having had a dental checkup within the past year.[10]

- In 2016, an estimated 26.8% of Michigan adults reported having no dental care coverage.

- The prevalence of no dental care coverage varied by age, but was lowest among adults 18-24 years of age.

- The prevalence of no dental care coverage decreased with increasing household income level.

- The prevalence of no dental care coverage was similar by gender and race/ethnicity.

- The prevalence of no dental care coverage was similar by disability status.

- The prevalence of no dental care coverage among White, non-Hispanic and Black, non-Hispanic adults was similar by gender.

Demographic Characteristics	No Dental Care Coverage[a]	
	%	95% Confidence Interval
Total	**26.8**	**(25.0-28.6)**
Age		
18 - 24	19.4	(14.0-26.3)
25 - 34	24.6	(19.5-30.5)
35 - 44	24.1	(19.1-29.8)
45 - 54	22.2	(18.3-26.7)
55 - 64	26.3	(22.7-30.2)
Gender		
Male	27.2	(24.5-30.1)
Female	26.3	(23.9-28.9)
Race/Ethnicity		
White, non-Hispanic	26.7	(24.7-28.8)
Black, non-Hispanic	24.7	(19.5-30.7)
Other, non-Hispanic	23.0	(15.7-32.3)
Hispanic	36.8	(25.4-49.9)
Household Income		
< $20,000	39.5	(34.0-45.3)
$20,000 - $34,999	37.8	(33.0-42.8)
$35,000 - $49,999	26.6	(21.8-32.0)
$50,000 - $74,999	22.5	(17.9-27.9)
≥ $75,000	12.3	(10.1-14.9)
Disability Status		
No disabilities	25.4	(23.3-27.7)
Adults with disabilities	30.4	(27.1-34.0)

[a] Among all adults, the proportion who reported having no dental care coverage at some point within the past 12 months.

No Dental Coverage by Race and Gender
Michigan, 2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

7

Limited Health Care Coverage

Two additional indicators related to health care access are: 1) not having a personal doctor or health care provider and 2) having had a time during the past 12 months when an individual needed to see a doctor but could not because of the cost. Increases in access to primary care have been shown to substantially improve health-related outcomes.[11]

♦ In 2016, an estimated 14.8% of Michigan adults reported not having a personal health care provider, while 12.8% reported not seeing the doctor within the past 12 months due to cost.

♦ The prevalences of both of these indicators decreased with age and increasing household income level.

♦ Males (19.2%) were more likely than females (10.6%) to not have a personal health care provider.

♦ Both Black, non-Hispanic (19.4%) and Hispanic adults (24.1%) were more likely than White, non-Hispanic adults (13.3%) not to have a personal health care provider.

♦ Black, non-Hispanic adults (15.2%) were more likely than White, non-Hispanic adults (11.8%) not to have seen a doctor within the past 12 months due to cost.

♦ Uninsured adults (45.3% and 33.4%, respectively) were more likely not to have a personal health care provider and not to have seen a doctor within the past 12 months due to cost when compared to insured adults (11.9% and 11.0%, respectively).

Demographic Characteristics	No Personal Health Care Provider[a]		No Health Care Access Due to Cost[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**14.8**	**(13.9-15.7)**	**12.8**	**(12.0-13.6)**
Age				
18 - 24	28.9	(25.5-32.7)	13.1	(10.6-16.1)
25 - 34	28.3	(25.3-31.5)	14.7	(12.5-17.2)
35 - 44	17.1	(14.6-19.8)	18.6	(16.2-21.3)
45 - 54	11.2	(9.6-13.1)	13.2	(11.5-15.1)
55 - 64	7.2	(6.0-8.5)	12.3	(10.8-13.9)
65 - 74	4.4	(3.4-5.7)	7.3	(6.0-8.9)
75 +	3.6	(2.7-4.9)	7.1	(5.5-9.0)
Gender				
Male	19.2	(17.8-20.7)	12.0	(10.9-13.2)
Female	10.6	(9.6-11.8)	13.5	(12.4-14.6)
Race/Ethnicity				
White, non-Hispanic	13.3	(12.4-14.3)	11.8	(10.9-12.7)
Black, non-Hispanic	19.4	(16.5-22.6)	15.2	(12.9-17.8)
Other, non-Hispanic	18.7	(15.2-22.9)	19.5	(15.6-24.2)
Hispanic	24.1	(18.5-30.7)	16.0	(11.4-22.1)
Household Income				
< $20,000	20.6	(17.9-23.6)	20.1	(17.7-22.7)
$20,000 - $34,999	17.4	(15.2-19.8)	19.4	(17.2-21.8)
$35,000 - $49,999	15.1	(12.6-17.9)	15.2	(12.8-17.9)
$50,000 - $74,999	12.4	(10.3-14.8)	10.0	(8.2-12.1)
≥ $75,000	9.7	(8.3-11.2)	4.3	(3.4-5.3)
Health Insurance				
Insured	11.9	(11.1-12.8)	11.0	(10.2-11.8)
Uninsured	45.3	(40.6-50.0)	33.4	(29.1-37.9)
Disability Status				
No disabilities	16.0	(14.9-17.1)	10.0	(9.1-10.9)
Adults with disabilities	8.7	(7.5-10.2)	20.7	(18.9-22.7)

[a] Among all adults, the proportion reporting that they did not have anyone that they thought of as their personal doctor or health care provider
[b] Among all adults, the proportion reporting that in the past 12 months, they could not see a doctor when they needed to due to the cost.

Health Care Access Indicators by Gender
Michigan, 2016
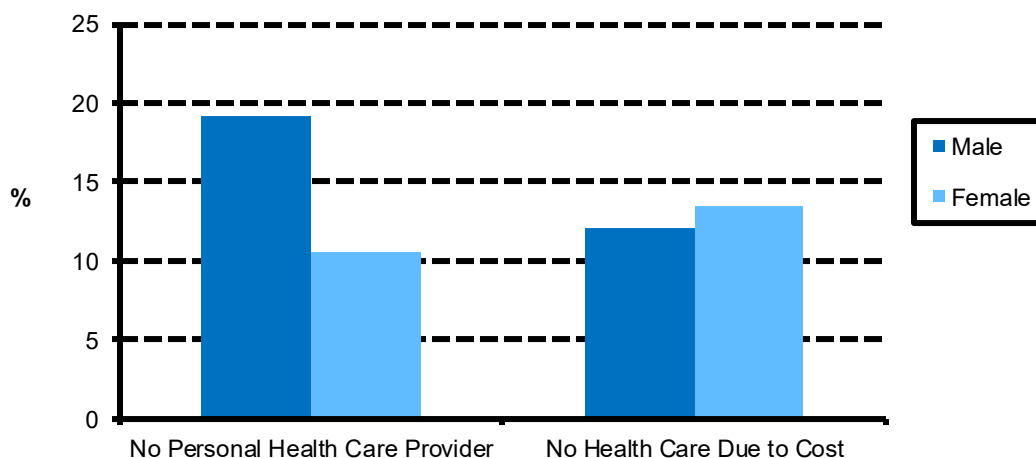
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

No Leisure Time Physical Activity

Regular physical activity among adults has been shown to reduce the risk of many diseases including cardiovascular disease, diabetes, colon and breast cancers, and osteoporosis. Keeping physically active also helps to control weight, maintain healthy bones, muscles, and joints, and relieve symptoms of depression.[12]

- In 2016, an estimated 23.9% of Michigan adults reported no leisure time physical activity within the past month. The prevalence of no leisure time physical activity among Michigan adults is comparable to the U.S. median prevalence (23.2%) for this indicator.

- The prevalence of no leisure time physical activity increased with age and decreased with increasing household income level.

- Females (25.7%) were more likely than males (22.0%) to report no leisure time physical activity within the past month.

- White, non-Hispanic adults (22.9%) reported a significantly lower prevalence of no leisure time physical activity than Black, non-Hispanic adults (28.6%).

- The HP 2020 target for no leisure time physical activity among adults is set at 32.6%. The prevalence of no leisure time physical activity among Michigan adults is currently more than eight percentage points below this goal, so if Michigan can maintain the current prevalence for this indicator the HP 2020 target will easily be met by 2020.[7]

Demographic Characteristics	No Leisure Time Physical Activity[a]	
	%	95% Confidence Interval
Total	**23.9**	**(22.9-24.9)**
Age		
18 - 24	16.6	(13.8-19.7)
25 - 34	16.7	(14.2-19.5)
35 - 44	21.8	(19.2-24.7)
45 - 54	26.5	(24.1-29.0)
55 - 64	27.2	(25.1-29.3)
65 - 74	27.8	(25.6-30.2)
75 +	33.9	(31.0-36.9)
Gender		
Male	22.0	(20.6-23.4)
Female	25.7	(24.3-27.0)
Race/Ethnicity		
White, non-Hispanic	22.9	(21.8-23.9)
Black, non-Hispanic	28.6	(25.6-31.9)
Other, non-Hispanic	20.4	(16.8-24.6)
Hispanic	29.3	(23.2-36.4)
Household Income		
< $20,000	36.0	(33.0-39.0)
$20,000 - $34,999	28.8	(26.4-31.4)
$35,000 - $49,999	25.0	(22.4-27.9)
$50,000 - $74,999	21.5	(19.0-24.3)
≥ $75,000	12.1	(10.8-13.6)
Health Insurance		
Insured	23.6	(22.6-24.6)
Uninsured	26.9	(23.0-31.3)
Disability Status		
No disabilities	18.6	(17.5-19.7)
Adults with disabilities	39.0	(36.9-41.2)

[a] Among all adults, the proportion reporting they had not participated in any leisure time physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise during the past month.

No Leisure Time Physical Activity
U.S. vs. Michigan, 2007-2016
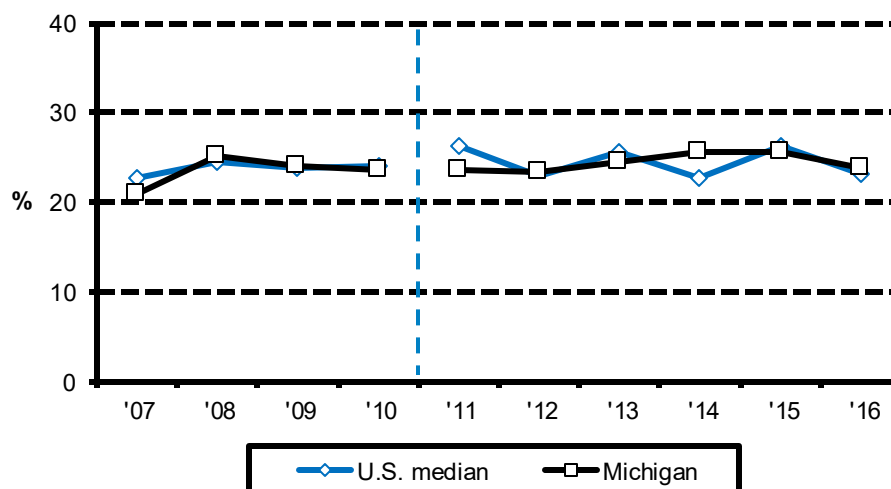
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

Cigarette Smoking

Cigarette smoking is the leading cause of preventable death in the U.S., accounting for more than 480,000 deaths each year.[13]

♦ In 2016, an estimated 20.4% of Michigan adults reported that they currently smoke cigarettes on a regular basis. The prevalence of current smoking among Michigan adults was higher than the U.S. median prevalence (17.1%).

♦ Current smoking decreased with both increasing age and household income level.

♦ Males (22.3%) reported a higher prevalence of current smoking than females (18.7%), and White, non-Hispanic adults (19.5%) reported a lower prevalence than Black, non-Hispanic adults (24.9%).

♦ Adults with disabilities (28.0%) were more likely to have reported current smoking than adults without disabilities (17.8%).

♦ Uninsured adults (32.3%) were more likely to have reported current smoking than insured adults (19.4%).

♦ The HP 2020 target for current smoking among adults is set at 12.0%. In order to meet this target, the current smoking prevalence among Michigan adults will need to decrease by 8.4 percentage points during the next four years.[7]

♦ The BRFSS methodology changes that were implemented in 2011 resulted in a spike in the prevalence of current smoking among Michigan adults, but the prevalence of current smoking has declined by nearly three percentage points since 2011.

Demographic Characteristics	Current Smoking[a]	
	%	95% Confidence Interval
Total	**20.4**	**(19.4-21.4)**
Age		
18 - 24	18.3	(15.4-21.7)
25 - 34	25.3	(22.4-28.6)
35 - 44	26.9	(24.0-30.1)
45 - 54	24.9	(22.5-27.5)
55 - 64	21.8	(19.8-23.8)
65 - 74	12.2	(10.6-14.1)
75 +	5.5	(4.1-7.2)
Gender		
Male	22.3	(20.8-23.9)
Female	18.7	(17.4-20.0)
Race/Ethnicity		
White, non-Hispanic	19.5	(18.5-20.7)
Black, non-Hispanic	24.9	(21.8-28.3)
Other, non-Hispanic	21.0	(17.2-25.4)
Hispanic	19.8	(14.7-26.1)
Household Income		
< $20,000	35.7	(32.6-38.9)
$20,000 - $34,999	26.8	(24.2-29.6)
$35,000 - $49,999	21.0	(18.3-23.9)
$50,000 - $74,999	14.7	(12.6-17.1)
≥ $75,000	11.0	(9.6-12.7)
Health Insurance		
Insured	19.4	(18.4-20.5)
Uninsured	32.3	(27.9-37.1)
Disability Status		
No disabilities	17.8	(16.7-19.0)
Adults with disabilities	28.0	(25.9-30.1)

[a] Among all adults, the proportion reporting that they had ever smoked at least 100 cigarettes (5 packs) in their life and that they smoke cigarettes now, either every day or on some days.

Current Cigarette Smoking
U.S. vs. Michigan, 2007-2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
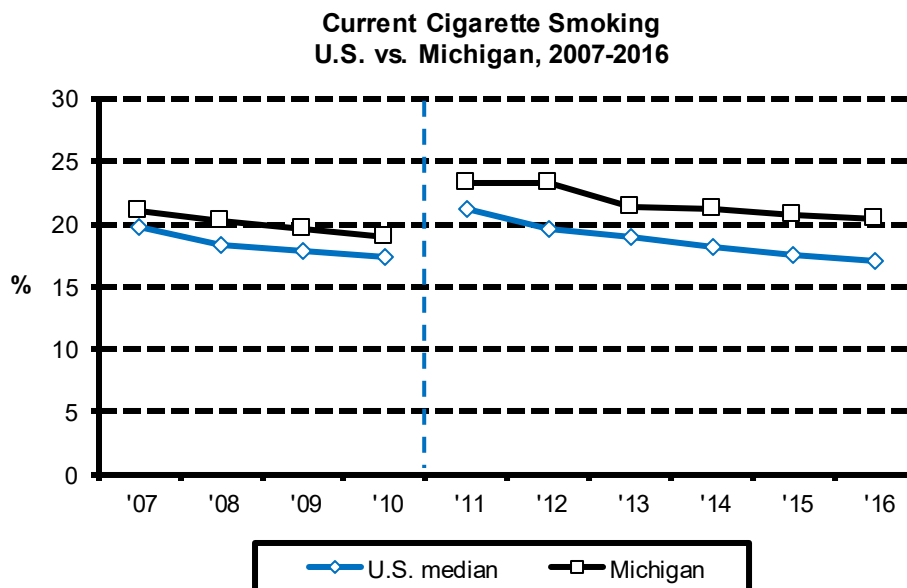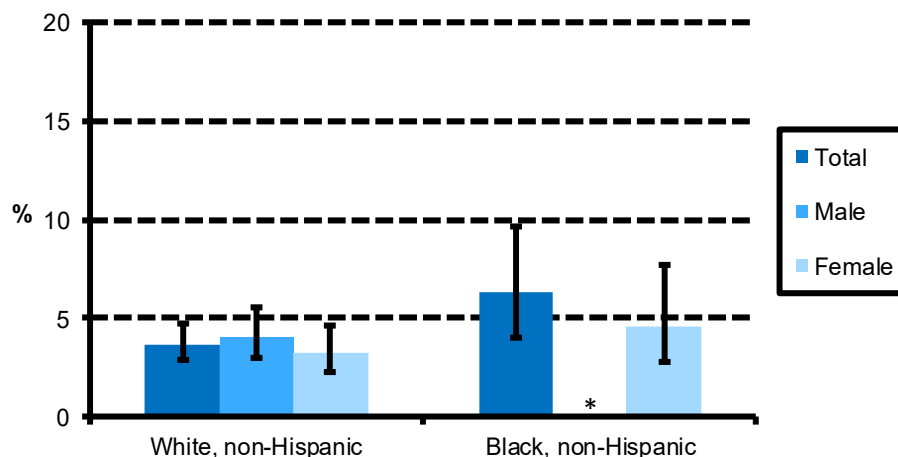
Hookah Use

Hookah (water pipe) use has become a popular tobacco smoking method within the U.S., with increasing popularity among the college student population. Hookah use should not be considered as a safe alternative to smoking cigarettes. The charcoal used to heat the tobacco and the smoke generated from hookahs contain many toxic agents that are known to cause lung, bladder, and oral cancers.[14]

- In 2016, an estimated 4.0% of Michigan adults reported that they smoked tobacco using a hookah on one or more days out of the previous month

- Current hookah use was highest among the 18-24 year old age group (8.1).

- Males (4.6%) were more likely to report current hookah use than females (3.3%).

- Current hookah use decreased with increasing household income level.

- White, non-Hispanic males were similar to White, non-Hispanic females by current hookah use.

Demographic Characteristics	Current Hookah Use[a]	
	%	95% Confidence Interval
Total	**4.0**	**(3.3-4.7)**
Age		
18 - 24	8.1	(5.6-11.6)
25 - 34	6.5	(4.5-9.4)
35 - 44	3.9	(2.4-6.2)
45 - 54	4.1	(2.8-6.0)
55 - 64	2.9	(2.0-4.2)
65 - 74	1.3	(0.8-2.2)
75 +	--[b]	--[b]
Gender		
Male	4.6	(3.7-5.8)
Female	3.3	(2.5-4.3)
Race/Ethnicity		
White, non-Hispanic	3.5	(2.9-4.3)
Black, non-Hispanic	6.4	(4.2-9.6)
Other, non-Hispanic	--[b]	--[b]
Hispanic	--[b]	--[b]
Household Income		
< $20,000	5.7	(3.8-8.4)
$20,000 - $34,999	6.1	(4.4-8.6)
$35,000 - $49,999	3.0	(1.8-5.1)
$50,000 - $74,999	3.1	(1.9-5.0)
≥ $75,000	2.0	(1.3-3.1)
Health Insurance		
Insured	3.7	(3.0-4.4)
Uninsured	--[b]	--[b]
Disability Status		
No disabilities	3.3	(2.7-4.1)
Adults with disabilities	5.6	(4.2-7.4)

[a] Among all adults, the proportion reporting smoking tobacco using a hookah, narghile, or water pipe on one or more days during the previous thirty days.
[b] Suppressed due to a denominator of < 50 and/or a relative standard error > 30%.

Current Hookah Use by Race and Gender
Michigan, 2016

*Suppressed due to a denominator of < 50 and/or a relativ e standard error > 30%.

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

Secondhand Smoke Exposure

Among adults who have never smoked, secondhand smoke exposure causes an estimated 34,000 heart disease deaths and 7,300 lung cancer deaths within the U.S. each year.[13]

- ♦ In 2016, an estimated 25.5% of Michigan adults reported that they were exposed to secondhand smoke in their home or car within the past seven days.

- ♦ Secondhand smoke exposure decreased with both increasing age and household income level.

- ♦ Males (28.4%) were more likely than females (22.6%) to report secondhand smoke exposure.

- ♦ Black, non-Hispanic adults (37.3%) reported a significantly higher prevalence of secondhand smoke exposure than White, non-Hispanic adults (24.0%) and Hispanic adults (23.9%).

- ♦ Uninsured adults and adults with disabilities (43.7% and 31.2%, respectively) were more likely to have reported recent secondhand smoke exposure than insured adults and adults without disabilities (24.0% and 23.3%, respectively).

- ♦ White, non-Hispanic females reported the lowest prevalence of recent secondhand smoke exposure at 21.4%, while Black, non-Hispanic males reported the highest prevalence (42.7%).

Demographic Characteristics	Secondhand Smoke Exposure[a]	
	%	95% Confidence Interval
Total	**25.5**	**(24.1-26.9)**
Age		
18 - 24	41.2	(36.2-46.3)
25 - 34	34.1	(29.9-38.7)
35 - 44	28.0	(24.3-32.1)
45 - 54	26.9	(23.9-30.2)
55 - 64	21.4	(19.0-24.0)
65 - 74	14.4	(12.1-16.9)
75 +	9.5	(7.2-12.3)
Gender		
Male	28.4	(26.3-30.6)
Female	22.6	(20.9-24.5)
Race/Ethnicity		
White, non-Hispanic	24.0	(22.5-25.6)
Black, non-Hispanic	37.3	(32.8-42.0)
Other, non-Hispanic	20.1	(15.5-25.7)
Hispanic	23.9	(17.6-31.7)
Household Income		
< $20,000	43.5	(39.4-47.6)
$20,000 - $34,999	33.2	(29.8-36.8)
$35,000 - $49,999	26.7	(23.0-30.8)
$50,000 - $74,999	19.5	(16.4-23.0)
≥ $75,000	12.3	(10.3-14.5)
Health Insurance		
Insured	24.0	(22.6-25.4)
Uninsured	43.7	(37.6-49.9)
Disability Status		
No disabilities	23.3	(21.8-25.0)
Adults with disabilities	31.2	(28.5-33.9)

[a] Among all adults, the proportion reporting being exposed to secondhand smoke in their home or a car within the past seven days.

Secondhand Smoke Exposure by Race and Gender Michigan, 2016
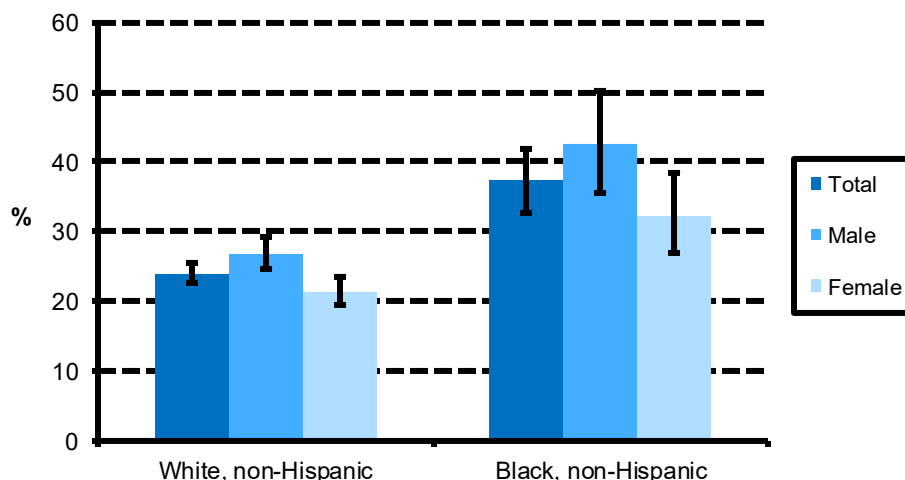
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

12

Alcohol Consumption

Excessive alcohol use contributes to approximately 88,000 deaths each year within the U.S.[15] Binge drinking is defined as consuming five or more alcoholic drinks per occasion (for men) or four or more alcoholic drinks per occasion (for women) at least once in the past month. Heavy drinking is defined as consuming an average of more than two alcoholic drinks per day for men or more than one alcoholic drink per day for women in the past month.

♦ In 2016, an estimated 57.2% (95% CI: 56.0-58.3) of Michigan adults reported some form of alcohol consumption within the past month. Furthermore, an estimated 19.0% of Michigan adults reported binge drinking on at least one occasion within the past month, and 6.9% (95% CI: 6.3-7.5) reported heavy drinking over the past month.

♦ Both binge drinking and heavy drinking are more prevalent within the younger age groups and decrease significantly within the older age groups.

♦ The prevalence of binge drinking is highest within the 18-24 year old age group (29.8%), followed by the 25-34 year old (29.1%) and 35-44 year old (22.7%) age groups.

♦ Males (24.0%) reported a significantly higher prevalence of binge drinking than females (14.4%).

♦ The prevalence of binge drinking is significantly higher in White, non-Hispanic adults (20.0%) than in Black, non-Hispanic adults (15.0%).

♦ Adults with disabilities (13.3%) reported a significantly lower prevalence of binge drinking than adults without disabilities (20.9%).

♦ The prevalence of binge drinking among Michigan adults has decreased slightly since the BRFSS methodology changes in 2011, but remains higher than the U.S. median prevalence (16.9%).

Demographic Characteristics	Binge Drinking[a]	
	%	95% Confidence Interval
Total	**19.0**	**(18.1-20.0)**
Age		
18 - 24	29.8	(26.1-33.7)
25 - 34	29.1	(26.0-32.3)
35 - 44	22.7	(20.1-25.6)
45 - 54	20.2	(18.1-22.5)
55 - 64	13.7	(12.1-15.5)
65 - 74	9.2	(7.8-10.9)
75 +	2.8	(2.0-3.9)
Gender		
Male	24.0	(22.5-25.6)
Female	14.4	(13.2-15.6)
Race/Ethnicity		
White, non-Hispanic	20.0	(18.9-21.1)
Black, non-Hispanic	15.0	(12.4-17.9)
Other, non-Hispanic	14.2	(10.9-18.2)
Hispanic	19.5	(14.7-25.3)
Household Income		
< $20,000	16.8	(14.4-19.5)
$20,000 - $34,999	17.7	(15.4-20.2)
$35,000 - $49,999	19.2	(16.6-22.1)
$50,000 - $74,999	21.7	(19.2-24.4)
≥ $75,000	24.3	(22.4-26.4)
Health Insurance		
Insured	18.6	(17.7-19.6)
Uninsured	23.0	(19.1-27.5)
Disability Status		
No disabilities	20.9	(19.8-22.2)
Adults with disabilities	13.3	(11.7-15.0)

[a] Among all adults, the proportion reporting consumption of five or more drinks per occasion (for males) or four or more drinks per occasion (for women) at least once in the previous month.
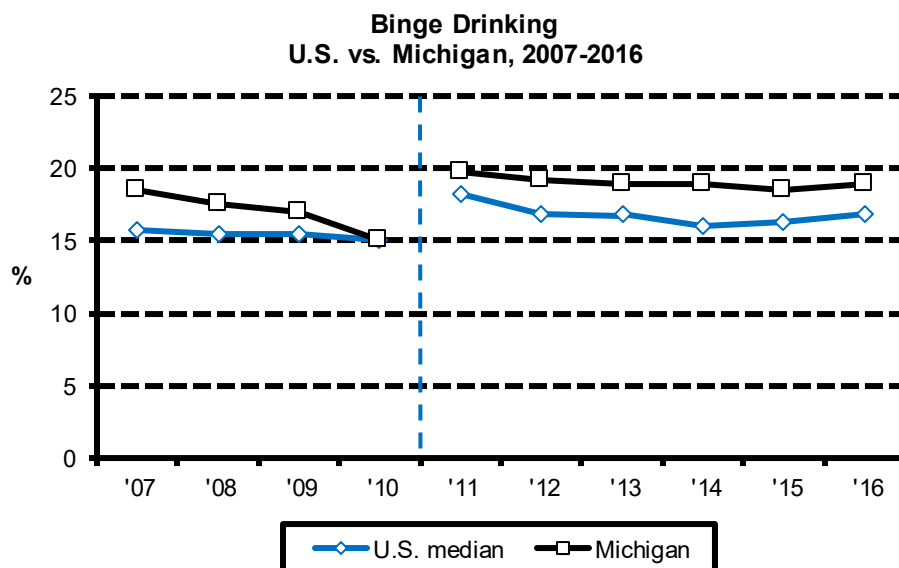
Binge Drinking
U.S. vs. Michigan, 2007-2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
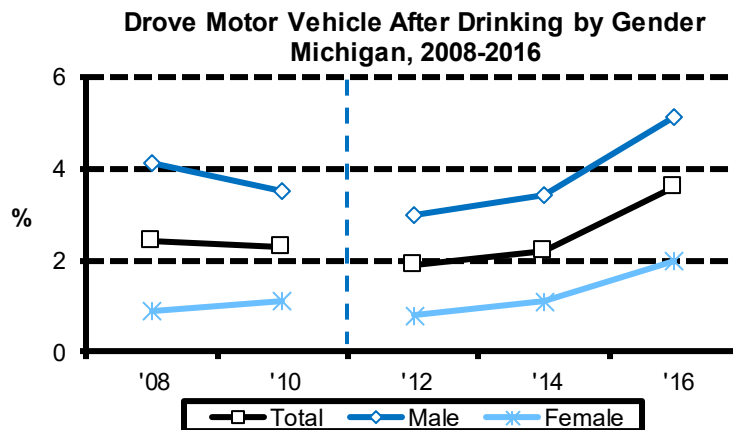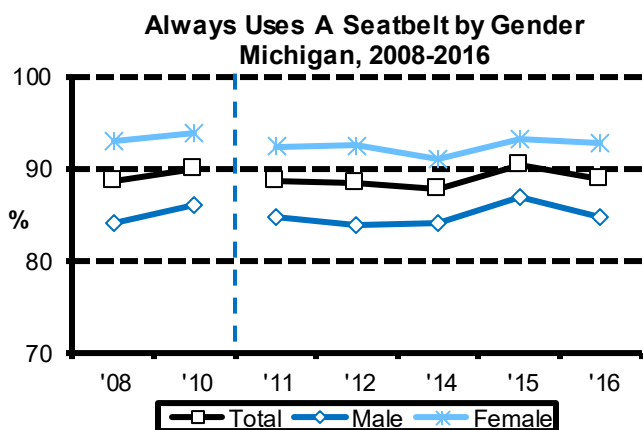
Motor Vehicle Safety

Seatbelt use has been proven to save lives and prevent injuries. In 2016, 23,714 people died in the U.S. in motor vehicle traffic crashes, of which only 48.0% were restrained. In 2016, seat belts saved an estimated 14,668 lives among motor vehicle occupants 5 years of age and older within the United States.[16, 17]

♦ In 2016, an estimated 88.9% of Michigan adults reported always using their seat belt when driving or riding in a car.

♦ Seatbelt use increased slightly with age and with increasing household income.

♦ Males reported a significantly lower prevalence of seatbelt use (84.8% vs. 92.7%) compared to females.

♦ The prevalence of seatbelt use is significantly lower in Hispanic adults (81.9%) than in White, non-Hispanic adults (89.5%).

♦ Adults with health insurance (89.8%) were more likely than uninsured adults (78.4%) to always wear their seatbelt.

♦ The prevalence of seatbelt use among Michigan adults has remained steady since the BRFSS methodology changes in 2011, and is consistently higher among females than males.

♦ Since the BRFSS methodology changes in 2011, the prevalence of driving a motor vehicle after drinking among Michigan adults has increased and is higher among males than females.

Demographic Characteristics	Always Uses a Seatbelt[a]		Drove Motor Vehicle After Drinking[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**88.9**	**(88.0-89.6)**	**3.6**	**(3.0-4.3)**
Age				
18 - 24	77.1	(73.4-80.4)	6.1	(3.7-9.8)
25 - 34	86.8	(84.2-89.0)	4.6	(3.0-7.0)
35 - 44	88.7	(86.3-90.7)	2.5	(1.5-4.3)
45 - 54	91.5	(89.8-92.9)	4.6	(3.4-6.3)
55 - 64	91.8	(90.4-93.0)	2.7	(1.9-3.9)
65 - 74	93.4	(92.0-94.6)	1.9	(1.1-3.2)
75 +	92.8	(90.9-94.3)	--[b]	--[b]
Gender				
Male	84.8	(83.4-86.0)	5.1	(4.1-6.3)
Female	92.7	(91.7-93.6)	2.0	(1.5-2.8)
Race/Ethnicity				
White, non-Hispanic	89.5	(88.6-90.4)	3.5	(2.8-4.3)
Black, non-Hispanic	88.3	(85.7-90.5)	3.7	(2.2-6.0)
Other, non-Hispanic	86.9	(82.7-90.2)	--[b]	--[b]
Hispanic	81.9	(75.3-87.0)	--[b]	--[b]
Household Income				
< $20,000	84.4	(81.6-86.8)	4.1	(2.4-6.9)
$20,000 - $34,999	87.8	(85.7-89.7)	3.6	(2.4-5.5)
$35,000 - $49,999	89.2	(86.8-91.2)	3.6	(2.3-5.6)
$50,000 - $74,999	89.0	(86.7-91.0)	4.4	(3.0-6.5)
≥ $75,000	92.0	(90.7-93.1)	3.7	(2.7-4.9)
Health Insurance				
Insured	89.8	(89.0-90.5)	3.7	(3.1-4.4)
Uninsured	78.4	(73.7-82.5)	--[b]	--[b]
Disability Status				
No disabilities	88.9	(87.9-89.8)	3.7	(3.0-4.5)
Adults with disabilities	89.1	(87.6-90.4)	3.2	(2.2-4.6)

[a] Among all adults, the proportion reporting that they always used a seatbelt within driving or riding in a car.
[b] Suppressed due to a denominator of < 50 and/or a relative standard error > 30%.

Always Uses A Seatbelt by Gender Michigan, 2008-2016

Drove Motor Vehicle After Drinking by Gender Michigan, 2008-2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

Routine Checkup in Past Year

A yearly routine checkup is a great way to remain proactive about one's health. The benefits of having an annual checkup include early diagnosis and treatment of existing conditions and prevention of future medical problems.[18]

♦ In 2016, an estimated 73.1% of Michigan adults reported having a routine medical checkup within the past year.

♦ The prevalence of having a routine checkup within the past year increased with age.

♦ Males (69.3%) reported a significantly lower prevalence of having a routine checkup within the past year than females (76.6%).

♦ White, non-Hispanic adults (72.8%) and Hispanic adults (61.8%) reported a significantly lower prevalence of having had a routine checkup within the past year than did Black, non-Hispanic adults (80.4%).

♦ Insured adults and adults with disabilities (75.6% and 80.7%, respectively) were more likely to have had a routine checkup within the past year than uninsured adults and adults without disabilities (44.7% and 70.9%, respectively).

♦ Michigan adults 65+ years who had a routine checkup within the past year were more likely to have had a flu vaccine within the past year [84.5% vs. 66.7%], and to have ever had a pneumonia vaccine [91.6% vs. 77.9%] when compared to those who had not had a routine checkup within the past year.

Demographic Characteristics	Had a Routine Checkup Within The Past Year[a]	
	%	95% Confidence Interval
Total	73.1	(72.0-74.1)
Age		
18 - 24	65.6	(61.8-69.3)
25 - 34	57.0	(53.6-60.3)
35 - 44	67.2	(64.1-70.2)
45 - 54	74.1	(71.7-76.4)
55 - 64	78.8	(76.8-80.7)
65 - 74	86.2	(84.3-87.9)
75 +	89.8	(87.8-91.5)
Gender		
Male	69.3	(67.7-70.9)
Female	76.6	(75.2-77.9)
Race/Ethnicity		
White, non-Hispanic	72.8	(71.6-73.9)
Black, non-Hispanic	80.4	(77.3-83.2)
Other, non-Hispanic	68.7	(63.6-73.4)
Hispanic	61.8	(54.7-68.5)
Household Income		
< $20,000	71.5	(68.4-74.4)
$20,000 - $34,999	70.9	(68.2-73.5)
$35,000 - $49,999	70.4	(67.2-73.4)
$50,000 - $74,999	73.5	(70.6-76.3)
≥ $75,000	75.7	(73.8-77.6)
Health Insurance		
Insured	75.6	(74.5-76.6)
Uninsured	44.7	(40.1-49.4)
Disability Status		
No disabilities	70.9	(69.6-72.2)
Adults with disabilities	80.7	(78.8-82.4)

[a] Among all adults, the proportion reporting a routine medical checkup within the past year.

Health Screenings and Immunizations by Routine Checkup Status Michigan, 2016
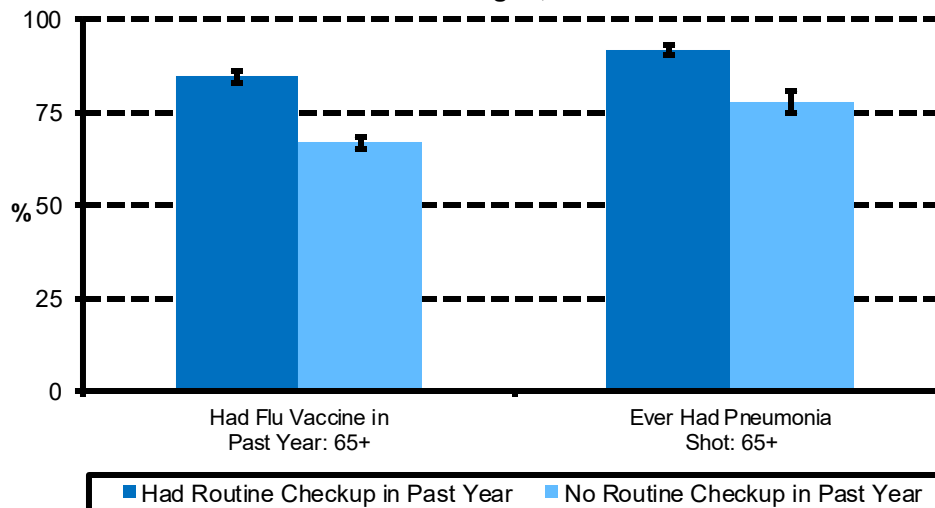
Legend: Had Routine Checkup in Past Year / No Routine Checkup in Past Year

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
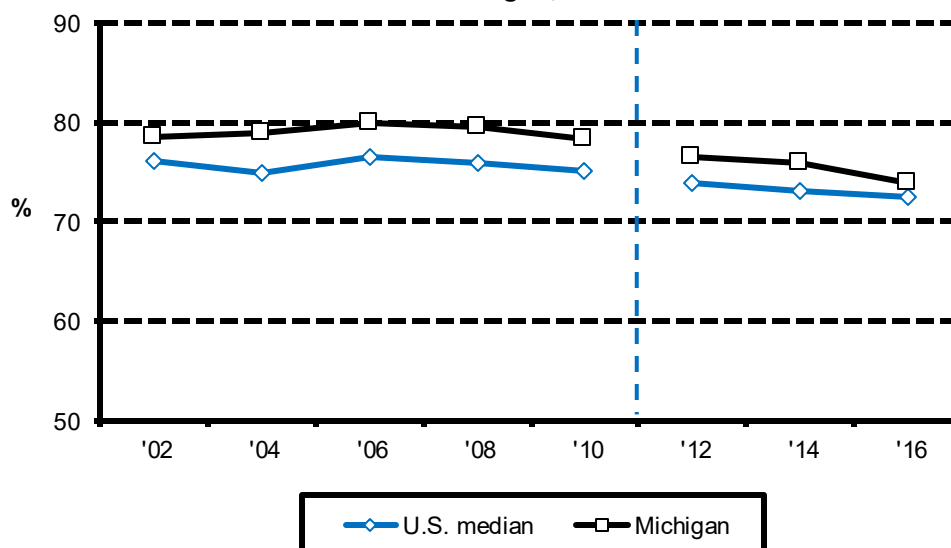
Breast Cancer Screening

Breast Cancer is currently the second leading cause of cancer deaths among women within the United States.[19] In 2012, there were 1,424 deaths among Michigan women due to breast cancer.[20] Early detection of breast cancer can occur through the use of screening tools such as mammography and clinical breast exams.

- In 2016, an estimated 74.0% of Michigan women 40 years and older reported having a mammogram within the past two years.

- Breast cancer screening measures increased with household income level, but were similar by race/ethnicity.

- Insured adults (70.5%) were more likely than uninsured adults (42.9%) to have reported receiving a mammogram within the past two years.

- The HP 2020 target for having received a mammogram within the past two years among women aged 40 years and older is set at 81.1%.[7] The prevalence for this indicator among Michigan women 40 years and older (74.0%) will need to increase by 7.1 percentage points during the next four years in order to meet HP 2020 target.

- The prevalence of having had a mammogram within the past two years among Michigan women 40 years and older is slightly higher than the U.S. median prevalence for this indicator.

Demographic Characteristics	Had Mammogram in Past Two Years[a]	
	%	95% Confidence Interval
Total	**74.0**	**(72.4-75.5)**
Age		
40 - 49	64.7	(60.6-68.5)
50 - 59	78.3	(75.3-81.0)
60 - 69	78.2	(75.3-80.8)
70 +	73.9	(71.0-76.5)
Race/Ethnicity		
White, non-Hispanic	73.8	(72.1-75.5)
Black, non-Hispanic	77.5	(72.5-81.8)
Other, non-Hispanic	72.7	(63.7-80.1)
Hispanic	70.2	(57.3-80.6)
Household Income		
< $20,000	65.7	(61.1-70.1)
$20,000 - $34,999	70.5	(66.6-74.1)
$35,000 - $49,999	70.9	(65.8-75.6)
$50,000 - $74,999	78.2	(74.0-81.9)
≥ $75,000	79.7	(76.6-82.4)
Health Insurance		
Insured	70.5	(68.9-72.0)
Uninsured	42.9	(35.2-50.9)
Disability Status		
No disabilities	71.3	(69.3-73.2)
Adults with disabilities	69.5	(66.7-72.1)

[a] Among women aged 40 years and older, the proportion who reported having a mammogram in the past two years.

Had a Mammogram in the Past Two Years Among Women Aged 40 Years and Older U.S. vs. Michigan, 2002-2016

Legend: U.S. median, Michigan

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

16

Cervical Cancer Screening

Current guidelines for cervical cancer screening recommend that women 21 to 65 years of age receive a Pap test at least every three years. Women 30 to 65 years of age can also choose to lengthen their testing interval by having a Pap test and HPV testing combined every five years.[21]

- In 2016, an estimated 88.1% of Michigan women aged 18 years and older reported ever having a Pap test, while 72.5% reported having a Pap test within the past three years.

- The prevalence of appropriate cervical cancer screening increased with age until falling off in the oldest age group.

- The prevalence of appropriate cervical cancer screening was similar by race/ethnicity, but increased with household income level.

- Insured women (68.1%) were more likely to report appropriate cervical cancer screening than uninsured women (56.7%).

- The prevalence of appropriate cervical cancer screening among women aged 21 to 65 years in Michigan is 81.4% and is slightly higher than the U.S. median prevalence of 79.8%.

- The HP 2020 target for the proportion of women 21 to 65 years of age who have received a Pap test within the past three years is set at 84.5%.[7] The prevalence of this indicator among Michigan women aged 21 to 65 years will need to increase by an average of one percentage point per year in order to meet the HP 2020 target.

Demographic Characteristics	Ever had a Pap Test[a]		Had Appropriately Timed Pap Test[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**88.1**	**(86.6-89.6)**	**72.5**	**(70.7-74.3)**
Age				
18 - 29	61.4	(56.6-66.0)	56.2	(51.5-60.9)
30 - 39	95.6	(92.6-97.5)	84.9	(80.6-88.3)
40 - 49	--[c]	--[c]	86.6	(83.4-89.3)
50 - 59	--[c]	--[c]	83.6	(80.2-86.4)
60 - 69	--[c]	--[c]	78.7	(75.1-81.8)
70 +	94.4	(91.6-96.3)	43.5	(39.2-47.9)
Race/Ethnicity				
White, non-Hispanic	90.5	(88.8-92.0)	73.5	(71.5-75.4)
Black, non-Hispanic	83.0	(77.6-87.3)	74.8	(69.1-79.7)
Other, non-Hispanic	74.9	(65.4-82.5)	61.5	(52.0-70.2)
Hispanic	78.0	(67.8-85.7)	63.3	(52.7-72.8)
Household Income				
< $20,000	82.1	(77.2-86.1)	63.1	(57.8-68.0)
$20,000 - $34,999	89.2	(85.9-91.9)	69.2	(65.1-73.1)
$35,000 - $49,999	92.6	(88.5-95.3)	74.9	(70.0-79.3)
$50,000 - $74,999	92.0	(87.3-95.0)	78.4	(73.5-82.6)
≥ $75,000	90.7	(87.2-93.3)	81.8	(78.3-84.9)
Health Insurance				
Insured	90.9	(89.7-92.0)	68.1	(66.5-69.6)
Uninsured	79.7	(71.9-85.8)	56.7	(49.1-64.0)
Disability Status				
No disabilities	89.3	(87.7-90.7)	69.4	(67.5-71.2)
Adults with disabilities	92.8	(90.9-94.3)	61.4	(58.5-64.1)

Note: Data includes diagnostic tests and excludes women who have had a hysterectomy.
[a] Among women aged 18 years and older, the proportion who reported ever having a Pap test.
[b] Among women aged 18 years and older, the proportion who reported having a Pap test within the previous three years.
[c] Suppressed due to a denominator of < 50 and/or a relative standard error > 30%.

**Had a Pap Test in the Past Three Years
Among Women Aged 18 Years and Older
Michigan, 2008-2016**
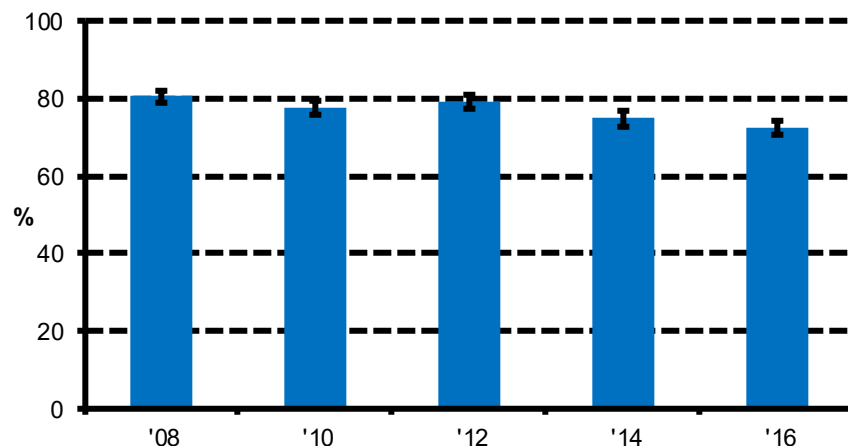
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

Prostate Cancer Screening

Prostate cancer is the second leading cause of cancer deaths among males in Michigan; there were 945 deaths in 2015 (18.6 deaths per 100,000 male population, age adjusted).[20]

♦ In 2016, an estimated 71.1% of Michigan men aged 50 years and older reported discussing the advantages of a Prostate-Specific Antigen (PSA) test with their doctor, while 41.1% reported having had a PSA test within the past year.

♦ The prevalence of having had a PSA test within the past year increased with age and household income level.

♦ The prevalence of having a PSA test within the past year was similar by race/ethnicity and disability status.

♦ Prior to the 2011 BRFSS methodology changes, the prevalence of receiving a PSA test within the past year among Michigan men 50 years and older was stable over time. The BRFSS methodology changes caused the PSA testing prevalence to take a significant decline in 2012. Since 2012, the prevalence of receiving a PSA test within the past year has remained similar to the prevalence in 2012 and 2014.

Demographic Characteristics	Ever Discussed Advantages of PSA Test With Doctor[a]		Had PSA Test in Past Year[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**71.1**	**(69.0-73.1)**	**41.1**	**(38.9-43.2)**
Age				
50 - 59	60.7	(56.9-64.4)	28.2	(24.9-31.6)
60 - 69	77.5	(74.2-80.5)	49.1	(45.4-52.7)
70 +	78.4	(75.0-81.5)	50.1	(46.1-54.0)
Race/Ethnicity				
White, non-Hispanic	72.0	(69.7-74.1)	42.7	(40.4-45.0)
Black, non-Hispanic	70.3	(62.5-77.1)	35.3	(27.8-43.6)
Other, non-Hispanic	57.0	(46.1-67.3)	29.6	(21.1-39.9)
Hispanic	--[c]	--[c]	--[c]	--[c]
Household Income				
< $20,000	50.5	(43.6-57.5)	23.5	(18.0-30.1)
$20,000 - $34,999	63.0	(57.5-68.2)	33.5	(28.4-38.9)
$35,000 - $49,999	78.0	(72.8-82.4)	44.7	(39.3-50.1)
$50,000 - $74,999	80.0	(75.1-84.1)	49.7	(44.1-55.4)
≥ $75,000	79.4	(76.0-82.4)	46.9	(43.1-50.8)
Health Insurance				
Insured	64.9	(62.8-66.9)	35.9	(34.0-37.8)
Uninsured	33.4	(25.2-42.7)	9.0	(5.0-15.8)
Disability Status				
No disabilities	62.8	(60.2-65.2)	34.6	(32.4-37.0)
Adults with disabilities	62.4	(58.7-66.0)	32.2	(29.0-35.6)

[a] Among men aged 50 years and older, the proportion ever discussing the advantages of a PSA test with a doctor , nurse, or other health professional.
[b] Among men aged 50 years and older, the proportion who reported having a PSA test within the past year.
[c] Suppressed due to a denominator of < 50 and/or a relative standard error > 30%.

Had a PSA Test in the Past Year
Among Men Aged 50 Years and Older
Michigan, 2008-2016
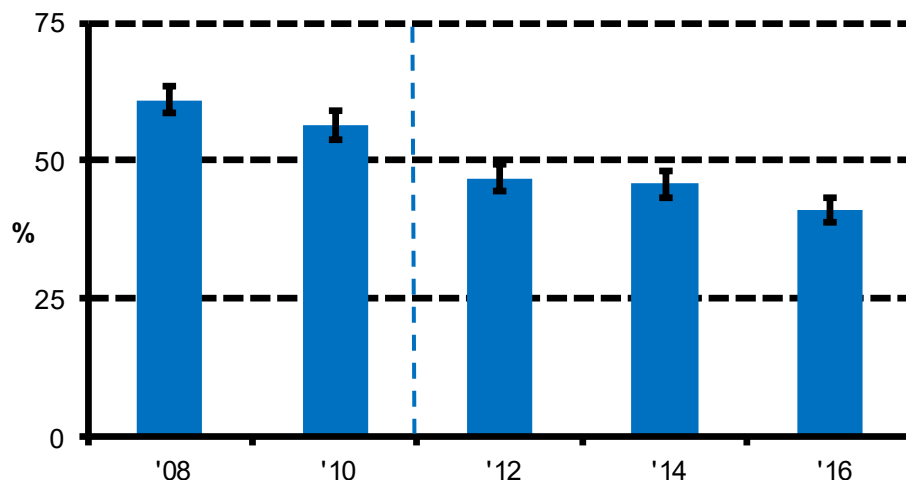
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

Colorectal Cancer Screening

In 2016, colorectal cancer was the second leading cause of cancer-related deaths in Michigan with 1,742 deaths.[22] Fecal occult blood tests, sigmoidoscopy, and colonoscopy are screening procedures that are performed to detect colorectal cancer in the early stages. Appropriate colorectal cancer screening consists of a fecal occult blood test within the past year, a sigmoidoscopy within the past five years, or a colonoscopy within the past ten years.

♦ In 2016, an estimated 54.1% of Michigan adults aged 50 years and older reported having a sigmoidoscopy or colonoscopy within the past five years, while 69.7% reported appropriate colorectal cancer screening.

♦ The prevalence of appropriate colorectal cancer screening was similar by gender and race/ethnicity, but increased with household income level.

♦ Insured adults (70.6%) were more likely than uninsured adults (45.7%) to have reported receiving appropriate colorectal cancer screening.

♦ The prevalence of appropriate colorectal cancer screening among Michigan adults 50 years and older has remained stable since the 2011 BRFSS methodology changes.

Demographic Characteristics	Had Sigmoidoscopy or Colonoscopy in Past 5 Years[a]		Had Appropriate Colorectal Cancer Screening[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**54.1**	**(52.7-55.6)**	**69.7**	**(68.3-71.0)**
Age				
50 - 59	49.1	(46.6-51.7)	61.5	(59.0-64.0)
60 - 69	57.3	(54.9-59.7)	75.4	(73.2-77.5)
70 +	57.0	(54.5-59.4)	73.7	(71.4-75.9)
Gender				
Male	54.5	(52.4-56.7)	69.4	(67.3-71.5)
Female	53.8	(51.9-55.6)	69.9	(68.1-71.6)
Race/Ethnicity				
White, non-Hispanic	54.0	(52.5-55.5)	70.7	(69.2-72.1)
Black, non-Hispanic	55.5	(50.5-60.4)	65.8	(60.8-70.4)
Other, non-Hispanic	51.6	(43.6-59.5)	63.8	(55.8-71.2)
Hispanic	60.4	(47.1-72.3)	66.0	(52.1-77.6)
Household Income				
< $20,000	47.2	(43.0-51.4)	57.9	(53.7-62.1)
$20,000 - $34,999	48.9	(45.6-52.3)	63.8	(60.4-67.1)
$35,000 - $49,999	56.4	(52.6-60.1)	72.6	(68.9-76.0)
$50,000 - $74,999	56.6	(52.8-60.3)	72.5	(68.9-75.9)
≥ $75,000	59.5	(56.7-62.2)	77.0	(74.4-79.3)
Health Insurance				
Insured	54.9	(53.5-56.3)	70.6	(69.2-72.0)
Uninsured	35.7	(28.8-43.3)	45.7	(38.2-53.4)
Disability Status				
No disabilities	53.3	(51.5-55.0)	69.1	(67.4-70.8)
Adults with disabilities	55.1	(52.6-57.5)	70.1	(67.7-72.3)

[a] Among adults aged 50 years and older, the proportion reporting having a sigmoidoscopy or colonoscopy within the past five years.
[b] Among adults aged 50 years and older, the proportion reporting having a fecal occult blood test within the past year, a sigmoidoscopy within the past five years, or a colonoscopy within the past ten years.

Appropriate Colorectal Cancer Screening
Among Adults Aged 50 Years and Older
Michigan, 2004-2016
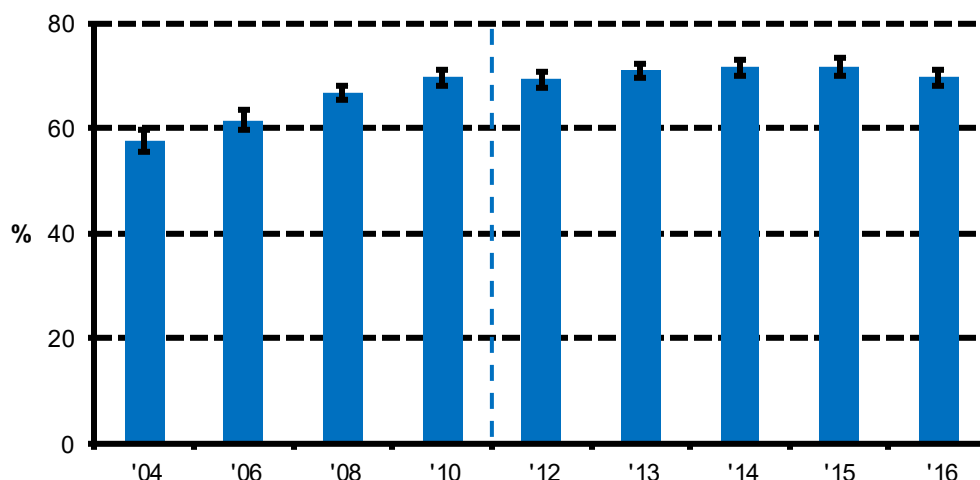
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

Oral Health

Oral health is an important part of one's general health and quality of life. Regular dental care includes preventive dental services such as teeth cleaning, and permits early diagnosis and treatment of tooth decay and periodontal diseases.[23]

- In 2016, an estimated 29.9% of Michigan adults reported not having had a dental visit within the past year.

- With exception of the 25-34 years age group, the prevalence of not having had a dental visit within the past year was similar by age.

- The prevalence of not having had a dental visit within the past year decreased with increasing household income.

- Males (33.8%) were more likely to have reported not having a dental visit within the past year compared to females (26.3%).

- Black, non-Hispanic adults (36.3%) reported a higher prevalence of no dental visit within the past year than White, non-Hispanic adults (28.2%).

- Uninsured adults and disabled adults (51.0% and 38.1%, respectively) were more likely to have not had a dental visit within the past year compared to insured adults and non-disabled adults (28.1% and 26.6%, respectively).

- The prevalence of having six or more teeth missing was greater among Black, non-Hispanic adults (20.2%) than both White, non-Hispanics (15.9%) and Hispanic adults (10.3%).

Demographic Characteristics	No Dental Visit in Past Year[a]	
	%	95% Confidence Interval
Total	**29.9**	**(28.8-31.0)**
Age		
18 - 24	30.3	(26.8-34.1)
25 - 34	38.5	(35.2-41.8)
35 - 44	28.9	(25.9-32.0)
45 - 54	29.3	(26.8-31.9)
55 - 64	27.3	(25.2-29.4)
65 - 74	25.2	(23.0-27.5)
75 +	30.1	(27.2-33.1)
Gender		
Male	33.8	(32.2-35.4)
Female	26.3	(24.9-27.7)
Race/Ethnicity		
White, non-Hispanic	28.2	(27.1-29.4)
Black, non-Hispanic	36.3	(33.0-39.8)
Other, non-Hispanic	35.3	(30.4-40.5)
Hispanic	33.8	(27.4-40.9)
Household Income		
< $20,000	49.4	(46.2-52.7)
$20,000 - $34,999	41.6	(38.8-44.4)
$35,000 - $49,999	32.6	(29.5-35.8)
$50,000 - $74,999	22.0	(19.4-24.7)
≥ $75,000	13.3	(11.8-14.9)
Health Insurance		
Insured	28.1	(27.0-29.2)
Uninsured	51.0	(46.3-55.8)
Disability Status		
No disabilities	26.6	(25.3-27.9)
Adults with disabilities	38.1	(36.0-40.3)

[a] Among all adults, the proportion who reported that they had not visited a dentist or dental clinic for any reason in the previous year.

Oral Health Risk Factors by Race/Ethnicity
Michigan, 2016
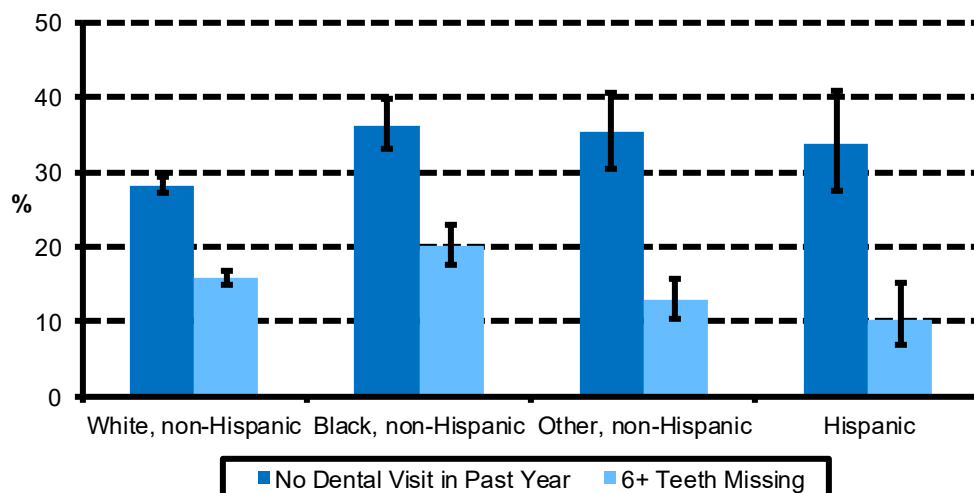
Legend: ■ No Dental Visit in Past Year ■ 6+ Teeth Missing

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

# Immunizations Among Adults 65 Years of Age and Older

Adult immunizations against influenza and pneumococcal disease are important health indicators that need to be routinely monitored since morbidity and mortality are associated with both of these diseases within different demographic groups.[24]

- In 2016, an estimated 56.1% of Michigan adults ages 65 years and older reported receiving a flu vaccine within the past year, while an estimated 71.8% of this population reported ever receiving a pneumonia vaccine.

- The prevalence of both having a flu vaccine in the past year and ever having a pneumonia vaccine were similar by gender.

- White, non-Hispanic adults (58.5% and 74.5%, respectively) were more likely than Black, non-Hispanic adults (38.9% and 53.5%, respectively) to have had a flu vaccine in the past year and to ever have received a pneumonia vaccine.

- Adults with disabilities (43.7% and 75.7%, respectively) were more likely to have had a flu vaccine the past year and to ever have received a pneumonia vaccine than adults without disabilities (33.6% and 69.8%, respectively).

Demographic Characteristics	Had Flu Vaccine in Past Year[a]		Ever Had Pneumonia Vaccine[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**56.1**	**(54.1-58.0)**	**71.8**	**(70.0-73.6)**
Age				
65 - 74	53.2	(50.7-55.7)	66.8	(64.4-69.2)
75 +	60.3	(57.2-63.3)	78.8	(76.1-81.4)
Gender				
Male	55.3	(52.3-58.3)	69.3	(66.4-72.1)
Female	56.7	(54.2-59.3)	73.8	(71.4-76.0)
Race/Ethnicity				
White, non-Hispanic	58.5	(56.4-60.5)	74.5	(72.6-76.3)
Black, non-Hispanic	38.9	(32.2-46.0)	53.5	(46.2-60.8)
Other, non-Hispanic	48.9	(35.2-62.7)	63.2	(51.2-73.8)
Hispanic	--[c]	--[c]	--[c]	--[c]
Household Income				
< $20,000	54.3	(48.4-60.1)	68.8	(62.9-74.2)
$20,000 - $34,999	52.4	(48.2-56.6)	72.0	(67.9-75.7)
$35,000 - $49,999	58.5	(53.7-63.2)	73.8	(69.3-77.9)
$50,000 - $74,999	55.7	(50.4-60.9)	73.7	(68.7-78.1)
≥ $75,000	60.6	(56.0-65.1)	69.3	(64.7-73.5)
Disability Status				
No disabilities	33.6	(32.3-34.9)	69.8	(67.4-72.1)
Adults with disabilities	43.7	(54.2-58.5)	75.7	(72.7-78.5)

[a] Among adults aged 65 years and older, the proportion reporting that they had a flu vaccine, either by injection in the arm or sprayed in the nose during the past 12 months.
[b] Among adults aged 65 years and older, the proportion reporting that they ever had a pneumococcal vaccine.
[c] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Ever Had a Pneumococcal Vaccination Among Adults Aged 65 Years and Older U.S. vs. Michigan, 2007-2016
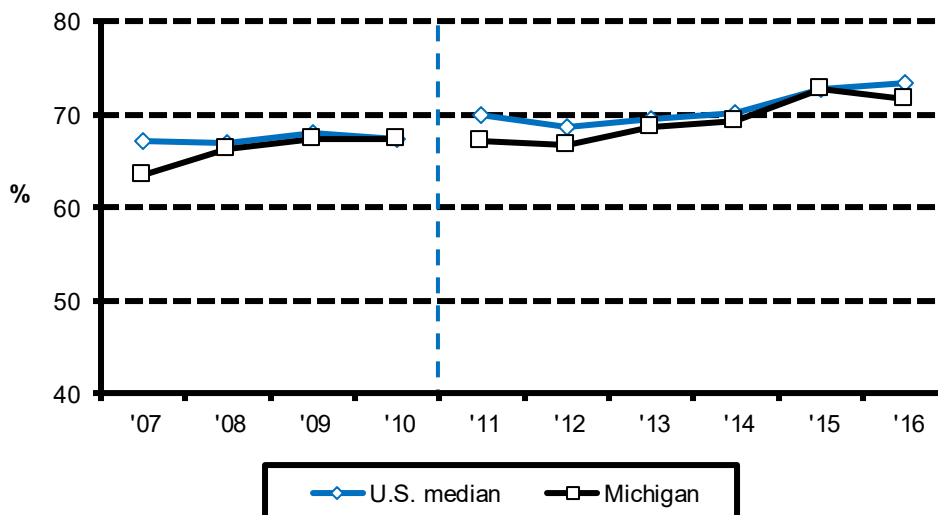
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
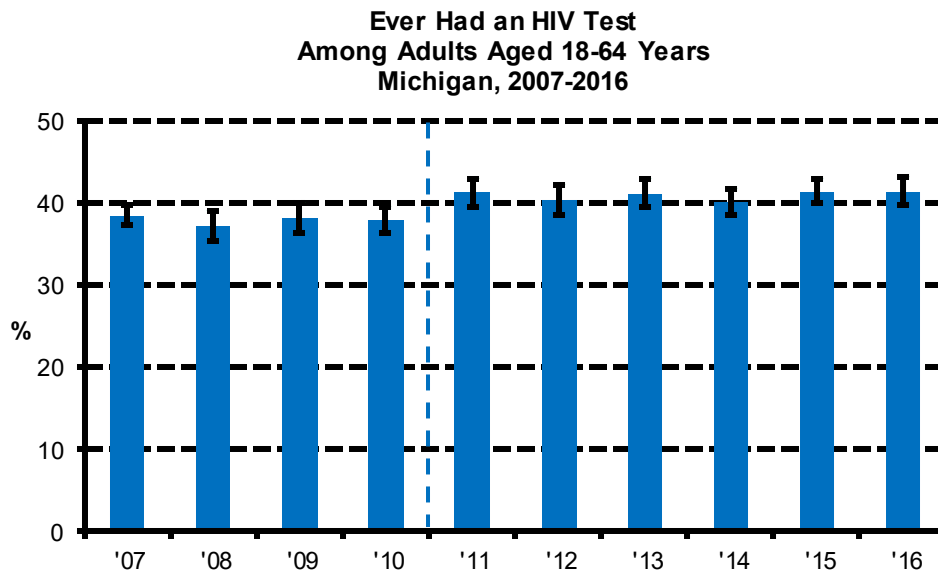
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HIV Testing

Early awareness of an HIV infection through HIV testing can prevent further spread of the disease, and an early start on antiretroviral therapy can increase the quality of life among those who are living with HIV/AIDS.[25]

- In 2016, an estimated 41.4% of Michigan adults reported ever being tested for HIV.

- Females (45.2%) reported a significantly higher prevalence of HIV testing than males (37.6%).

- Black, non-Hispanic adults (65.6%) reported a significantly higher prevalence of HIV testing than both White, non-Hispanic (37.1%) and Hispanic adults (42.8%).

- The prevalence of HIV testing decreased with increasing household income level.

- Adults with disabilities (39.1%) were more likely to have been tested for HIV than adults without disabilities (33.1%).

- Since the BRFSS methodology changes that were implemented in 2011, the prevalence of HIV testing among Michigan adult has remained stable over time.

Demographic Characteristics	Ever Had an HIV Test[a]	
	%	95% Confidence Interval
Total	41.4	(40.0-42.9)
Age		
18 - 24	29.2	(25.6-33.1)
25 - 34	51.0	(47.4-54.5)
35 - 44	57.1	(53.7-60.4)
45 - 54	44.9	(42.1-47.7)
55 - 64	26.0	(24.0-28.2)
Gender		
Male	37.6	(35.6-39.6)
Female	45.2	(43.3-47.2)
Race/Ethnicity		
White, non-Hispanic	37.1	(35.5-38.6)
Black, non-Hispanic	65.6	(61.5-69.5)
Other, non-Hispanic	38.3	(32.9-44.1)
Hispanic	42.8	(35.6-50.3)
Household Income		
< $20,000	53.6	(49.7-57.4)
$20,000 - $34,999	45.6	(42.0-49.4)
$35,000 - $49,999	40.5	(36.5-44.6)
$50,000 - $74,999	36.6	(33.1-40.3)
≥ $75,000	38.7	(36.2-41.2)
Health Insurance		
Insured	34.5	(33.3-35.7)
Uninsured	40.8	(36.0-45.9)
Disability Status		
No disabilities	33.1	(31.8-34.5)
Adults with disabilities	39.1	(36.8-41.3)

[a] Among adults aged 18-64 years, the proportion reporting that they ever had been tested for HIV, apart from tests that were part of a blood donation.

Ever Had an HIV Test
Among Adults Aged 18-64 Years
Michigan, 2007-2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

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Asthma in Adults

Asthma is a chronic inflammatory disorder of the lungs, characterized by wheezing, coughing, difficulty breathing, and chest tightness. Allergies, a family history of asthma or allergy, low birth weight, and exposure to tobacco smoke are just a few of the potential risk factors that are associated with the development of asthma.[26]

♦ In 2016, an estimated 16.3% of Michigan adults reported that they were ever diagnosed with asthma and 10.9% reported that they currently have asthma.

♦ The prevalence of both lifetime and current asthma decreased with age and increasing household income level.

♦ Females reported a significantly higher prevalence than males for both lifetime (17.9% vs. 14.6%) and current asthma (13.4% and 8.3%).

♦ Black, non-Hispanic adults reported significantly higher prevalences for both lifetime and current asthma (21.0% and 14.5%, respectively) than White, non-Hispanic adults (15.9% and 10.7%, respectively) and Hispanic adults (12.2% and 6.6%, respectively).

♦ Adults with disabilities reported a significantly higher prevalence than adults without disabilities for both lifetime (25.6% vs. 12.9%) and current asthma (20.1% vs. 7.8%).

♦ In 2016, the prevalence of ever being diagnosed with asthma among Michigan adults (16.3%) was higher than the U.S. median prevalence (14.0%).

Demographic Characteristics	Lifetime Asthma[a]		Current Asthma[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**16.3**	**(15.4-17.2)**	**10.9**	**(10.2-11.7)**
Age				
18 - 24	24.0	(20.7-27.6)	13.4	(10.8-16.5)
25 - 34	17.4	(15.0-20.1)	10.5	(8.7-12.8)
35 - 44	17.1	(14.8-19.6)	11.8	(9.9-14.1)
45 - 54	15.1	(13.3-17.2)	11.3	(9.7-13.1)
55 - 64	15.0	(13.4-16.8)	11.5	(10.1-13.1)
65 - 74	13.4	(11.8-15.2)	9.3	(7.9-10.9)
75 +	10.4	(8.7-12.4)	7.2	(5.8-8.9)
Gender				
Male	14.6	(13.4-15.8)	8.3	(7.4-9.4)
Female	17.9	(16.7-19.1)	13.4	(12.4-14.5)
Race/Ethnicity				
White, non-Hispanic	15.9	(14.9-16.9)	10.7	(9.9-11.5)
Black, non-Hispanic	21.0	(18.2-24.0)	14.5	(12.1-17.2)
Other, non-Hispanic	14.0	(11.2-17.4)	9.2	(7.0-12.1)
Hispanic	12.2	(8.4-17.4)	6.6	(3.8-11.4)
Household Income				
< $20,000	25.1	(22.4-28.0)	18.7	(16.3-21.3)
$20,000 - $34,999	17.6	(15.5-19.9)	12.3	(10.5-14.4)
$35,000 - $49,999	15.0	(12.8-17.5)	9.9	(8.1-12.0)
$50,000 - $74,999	12.3	(10.5-14.3)	7.0	(5.7-8.6)
≥ $75,000	12.8	(11.3-14.4)	7.8	(6.6-9.1)
Health Insurance				
Insured	16.2	(15.4-17.1)	10.9	(10.2-11.7)
Uninsured	15.8	(12.4-19.9)	11.1	(8.2-14.7)
Disability Status				
No disabilities	12.9	(12.0-13.9)	7.8	(7.0-8.6)
Adults with disabilities	25.6	(23.6-27.6)	20.1	(18.3-22.0)

[a] Among all adults, the proportion reporting that they were ever told by a doctor, nurse, or other health care professional that they had asthma.
[b] Among all adults, the proportion reporting that they still have asthma.

Lifetime Adult Asthma
U.S. vs. Michigan, 2007-2016
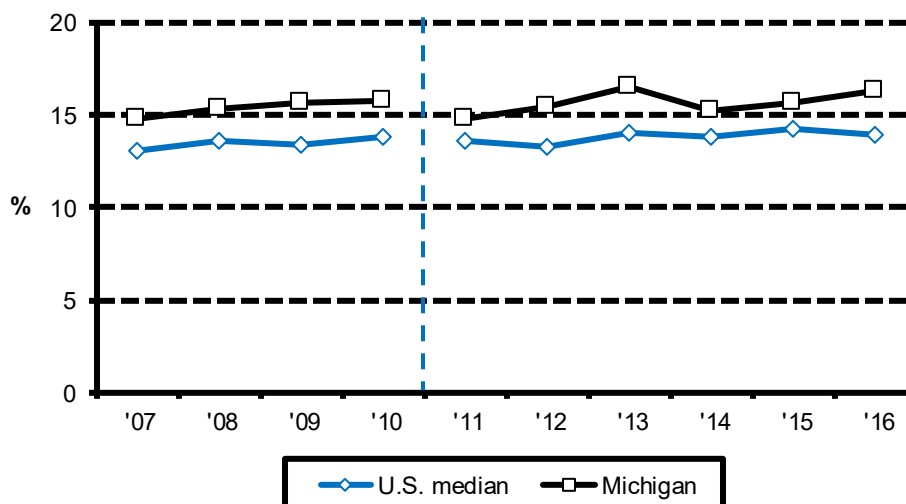
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

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Asthma in Children

Although asthma can affect people of all ages, in most cases it begins during childhood. More than 22 million people in the U.S. are known to have asthma, and about six million of these people are children. Children with a family history of asthma and allergy are at a higher risk of developing asthma during childhood.[27]

♦ Based on proxy information provided by the adult respondent, the estimated proportion of Michigan children aged 0-17 years who were ever told by a doctor that they had asthma for 2016 was 12.5%, and an estimated 8.9% currently have asthma.

♦ The prevalence of lifetime asthma increased with age, and the prevalence of current asthma increased with age until 10-14 years of age and then dropped slightly within the 15-17 year-old age group.

♦ The prevalence of both lifetime and current asthma among children decreased with increasing household income level, but increased slightly in the $50,000-$74,999 household income group.

♦ The prevalence of both lifetime and current asthma for Black, non-Hispanic children (19.9% and 15.8%, respectively) was significantly higher than for White, non-Hispanic children (10.3% and 7.3%, respectively).

♦ White, non-Hispanic girls (13.2%) were more likely to report lifetime asthma than White, non-Hispanic boys (11.3%).

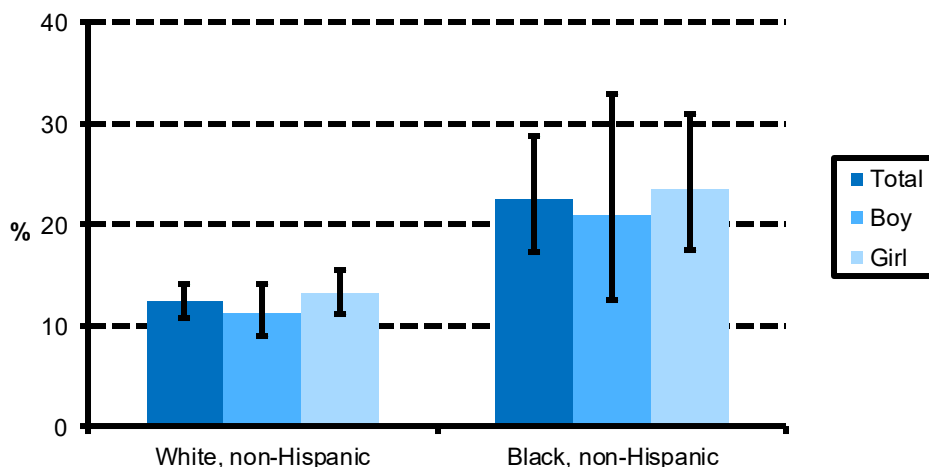♦ The prevalence of lifetime asthma was similar for Black, non-Hispanic boys and girls.

Demographic Characteristics	Lifetime Asthma[a]		Current Asthma[b]	
	%	95% Confidence Interval	%	95% Confidence Interval
Total	**12.5**	**(11.1-14.1)**	**8.9**	**(7.7-10.3)**
Age				
0 - 4	5.6	(3.7-8.6)	4.7	(3.0-7.5)
5 - 9	11.6	(8.9-14.9)	8.5	(6.3-11.4)
10 - 14	15.5	(12.8-18.7)	12.3	(9.9-15.2)
15 - 17	19.0	(15.4-23.1)	11.6	(8.8-15.0)
Gender				
Boy	15.7	(13.5-18.2)	11.4	(9.5-13.7)
Girl	9.3	(7.7-11.3)	6.4	(5.2-7.9)
Race/Ethnicity				
White, non-Hispanic	10.3	(8.9-12.0)	7.3	(6.0-8.7)
Black, non-Hispanic	19.9	(15.4-25.2)	15.8	(11.8-20.8)
Other, non-Hispanic	12.9	(8.9-18.4)	9.4	(6.0-14.6)
Hispanic	13.1	(8.0-20.7)	--[c]	--[c]
Household Income				
< $20,000	17.3	(12.8-23.0)	14.0	(9.9-19.4)
$20,000 - $34,999	16.3	(12.3-21.2)	10.2	(7.4-14.0)
$35,000 - $49,999	11.2	(7.6-16.1)	8.0	(5.2-12.1)
$50,000 - $74,999	12.8	(9.3-17.3)	8.3	(5.7-12.1)
≥ $75,000	9.9	(8.0-12.1)	7.0	(5.4-9.0)

[a] Estimated proportion of Michigan children aged 0-17 years ever told by a doctor, nurse, or other health care professional that they had asthma, using proxy information from the adult respondent.
[b] Estimated proportion of Michigan children aged 0-17 years who still have asthma, using proxy information from the adult respondent.
[c] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

**Lifetime Child Asthma by Race and Gender
Michigan, 2016**

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

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Chronic Obstructive Pulmonary Disease (COPD)

Chronic obstructive pulmonary disease (COPD) is a progressive disease that usually results in coughing, wheezing, shortness of breath, chest tightness, and other symptoms. Cigarette smoking is the leading cause of COPD.[28]
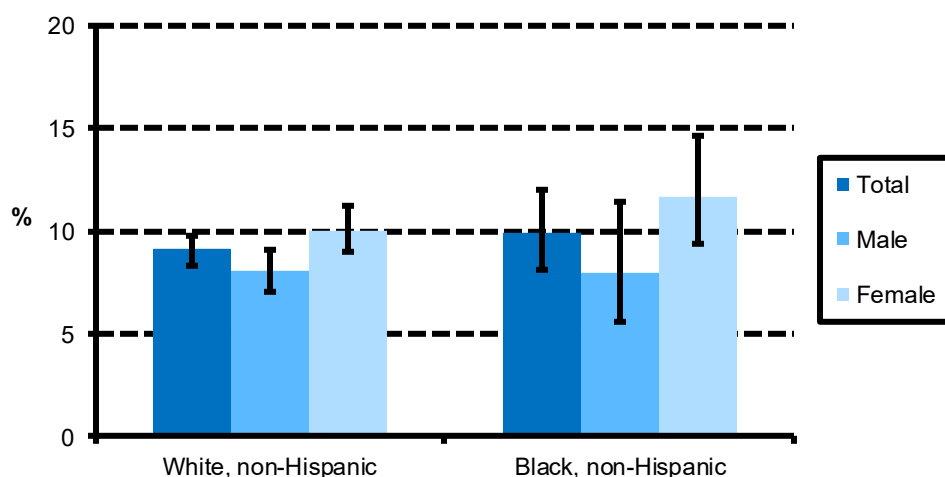
♦ In 2016, an estimated 8.9% of Michigan adults reported ever being told by a doctor that they had COPD.

♦ The prevalence of COPD increased with age and decreased with increasing household income level.

♦ The prevalence of COPD was significantly higher in females (9.9%) than in males (7.9%).

♦ The prevalence of COPD was similar by race/ethnicity.

♦ Adults with disabilities (21.0%) were more likely to have been diagnosed with COPD than adults without disabilities (4.7%).

♦ Current smokers reported a significantly higher lifetime prevalence of COPD (18.2% [16.2-20.4]) than those who have never smoked (3.5% [3.0-4.2]).

♦ The prevalence of COPD was similar by gender for both White, non-Hispanic and Black, non-Hispanic adults.

♦ In 2016, the prevalence of COPD among Michigan adults (8.9%) was higher than the U.S. median prevalence (6.3%).

Demographic Characteristics	Ever Told COPD, Emphysema, or Chronic Bronchitis[a]	
	%	95% Confidence Interval
Total	**8.9**	**(8.3-9.6)**
Age		
18 - 24	2.4	(1.4-3.8)
25 - 34	4.6	(3.1-6.7)
35 - 44	6.2	(4.8-8.0)
45 - 54	7.7	(6.4-9.3)
55 - 64	14.4	(12.7-16.3)
65 - 74	14.4	(12.7-16.4)
75 +	14.2	(12.2-16.4)
Gender		
Male	7.9	(7.0-8.8)
Female	9.9	(9.0-10.9)
Race/Ethnicity		
White, non-Hispanic	9.1	(8.3-9.8)
Black, non-Hispanic	10.0	(8.3-12.1)
Other, non-Hispanic	7.9	(6.1-10.2)
Hispanic	--[b]	--[b]
Household Income		
< $20,000	19.3	(16.9-22.0)
$20,000 - $34,999	10.6	(9.1-12.3)
$35,000 - $49,999	8.7	(7.2-10.5)
$50,000 - $74,999	5.6	(4.4-7.1)
≥ $75,000	2.9	(2.3-3.7)
Health Insurance		
Insured	9.0	(8.3-9.6)
Uninsured	9.0	(6.5-12.3)
Disability Status		
No disabilities	4.7	(4.1-5.3)
Adults with disabilities	21.0	(19.2-22.8)

[a] Among all adults, the proportion reporting ever being told by a doctor that they had chronic obstructive pulmonary disease (COPD), emphysema or chronic bronchitis.
[b] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

COPD by Race and Gender
Michigan, 2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

Arthritis

Arthritis and rheumatism are the leading causes of disability within the U.S. These conditions have been diagnosed in over 54 million U.S. adults.[29]

- In 2016, an estimated 32.0% of Michigan adults reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.

- Females (35.7%) reported a significantly higher prevalence of arthritis than males (28.0%).

- Hispanic adults (18.6%) reported a higher prevalence of arthritis than White, non-Hispanic adults (33.6%) and Black, non-Hispanic adults (30.1%).

- The prevalence of arthritis increased with age and decreased with increasing household income level.

- Uninsured adults (20.0%) were less likely to have been diagnosed with arthritis than insured adults (33.2%), while adults with disabilities (63.0%) were more likely to have been diagnosed than adults without disabilities (21.8%).

- In 2016, the prevalence of arthritis among Michigan adults (32.0%) was significantly higher than the U.S. median prevalence (25.8%).

Demographic Characteristics	Ever Told Arthritis[a]	
	%	95% Confidence Interval
Total	**32.0**	**(31.0-33.0)**
Age		
18 - 24	6.0	(4.3-8.3)
25 - 34	10.1	(8.2-12.4)
35 - 44	20.6	(18.1-23.3)
45 - 54	32.3	(29.8-34.9)
55 - 64	47.9	(45.6-50.2)
65 - 74	55.1	(52.6-57.6)
75 +	64.0	(61.0-66.9)
Gender		
Male	28.0	(26.6-29.4)
Female	35.7	(34.3-37.1)
Race/Ethnicity		
White, non-Hispanic	33.6	(32.5-34.7)
Black, non-Hispanic	30.1	(27.1-33.3)
Other, non-Hispanic	23.7	(20.1-27.7)
Hispanic	18.6	(14.2-24.0)
Household Income		
< $20,000	42.3	(39.3-45.4)
$20,000 - $34,999	34.4	(31.9-36.9)
$35,000 - $49,999	33.7	(30.8-36.7)
$50,000 - $74,999	29.3	(26.7-32.0)
≥ $75,000	23.1	(21.4-24.9)
Health Insurance		
Insured	33.2	(32.2-34.3)
Uninsured	20.0	(16.7-23.7)
Disability Status		
No disabilities	21.8	(20.8-22.9)
Adults with disabilities	63.0	(60.8-65.1)

[a] Among all adults, the proportion reporting ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.

Ever Told Arthritis
U.S. vs. Michigan, 2007-2016
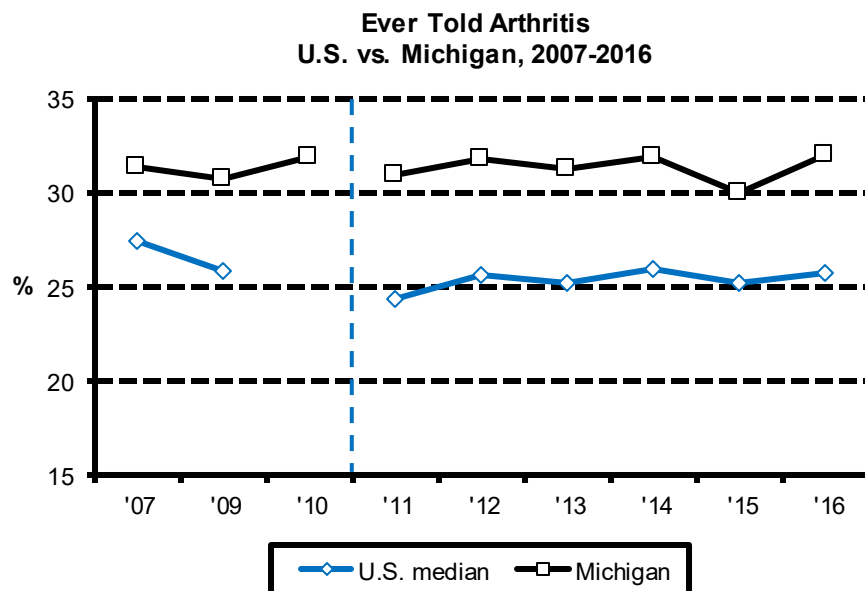
Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
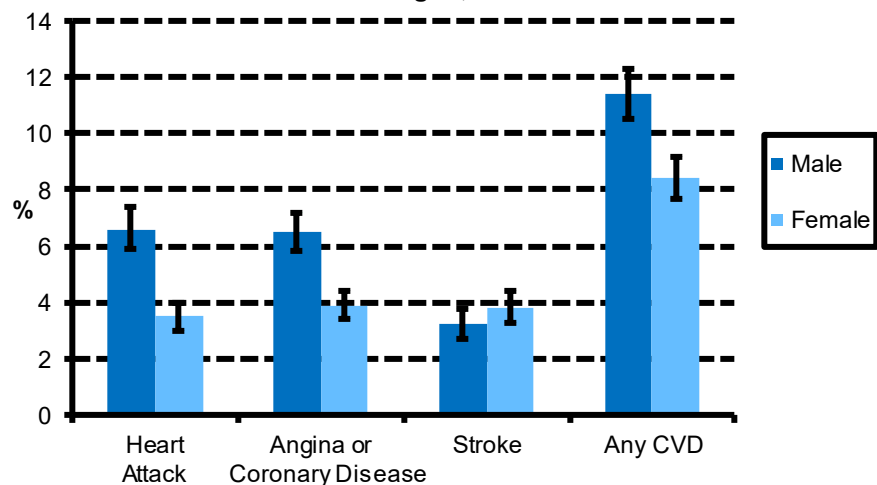
Cardiovascular Disease

Heart disease and stroke are the first and fifth leading causes of death, respectively, in both Michigan and the U.S.[30]

♦ In 2016, an estimated 5.0% of Michigan adults had ever been told by a doctor that they had a heart attack, 5.1% had ever been told they had angina or coronary heart disease, and 3.5% had ever been told they had a stroke.

♦ When combining all three measures into one indicator, an estimated 9.9% of Michigan adults have ever been told by a doctor that they had some form of cardiovascular disease.

♦ The prevalence of all three diseases increased with age and decreased with increasing household income level.

♦ Males reported higher prevalences than females for heart attack and coronary heart disease, but not stroke.

♦ The prevalences of heart attack and coronary heart disease were similar by race/ethnicity. However, Black, non-Hispanic adults (5.2%) reported a significantly higher prevalence of stroke than White, non-Hispanic adults (3.3%).

♦ Adults with disabilities were more likely to have been diagnosed with each of the three diseases when compared to adults without disabilities.

♦ In 2016, the prevalence of heart attack (5.0%), coronary heart disease (5.1%), and stroke (3.5%) among Michigan adults were all comparable to the U.S. median prevalence (heart attack: 4.4%; coronary heart disease: 4.1%; and stroke: 3.1%).

Demographic Characteristics	Ever Told Heart Attack[a]		Ever Told Angina or Coronary Heart Disease[b]		Ever Told Stroke[c]	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Total	5.0	(4.5-5.4)	5.1	(4.7-5.6)	3.5	(3.2-3.9)
Age						
18 - 34	0.7	(0.4-1.4)	--[d]	--[d]	0.4	(0.2-0.8)
35 - 44	2.4	(1.5-3.6)	1.8	(1.1-2.9)	1.8	(1.1-2.9)
45 - 54	3.0	(2.3-3.9)	2.9	(2.2-3.9)	2.8	(2.1-3.8)
55 - 64	7.0	(5.8-8.4)	8.0	(6.8-9.5)	5.0	(4.0-6.3)
65 - 74	10.5	(9.0-12.2)	11.5	(10.0-13.3)	6.3	(5.2-7.6)
75 +	15.4	(13.3-17.9)	16.1	(13.9-18.5)	10.8	(9.0-13.0)
Gender						
Male	6.6	(5.9-7.4)	6.5	(5.8-7.2)	3.2	(2.7-3.8)
Female	3.5	(3.0-4.0)	3.9	(3.4-4.4)	3.8	(3.3-4.4)
Race/Ethnicity						
White, non-Hispanic	5.4	(4.9-5.9)	5.6	(5.1-6.2)	3.3	(2.9-3.8)
Black, non-Hispanic	4.1	(3.0-5.5)	4.0	(3.0-5.4)	5.2	(4.1-6.7)
Other, non-Hispanic	3.3	(2.2-5.0)	3.4	(2.4-4.9)	3.1	(2.2-4.5)
Hispanic	--[d]	--[d]	--[d]	--[d]	--[d]	--[d]
Household Income						
< $20,000	7.9	(6.4-9.6)	7.6	(6.2-9.2)	6.8	(5.5-8.4)
$20,000 - $34,999	6.6	(5.5-7.8)	6.6	(5.6-7.9)	4.5	(3.6-5.7)
$35,000 - $49,999	5.5	(4.3-6.9)	5.9	(4.7-7.5)	3.3	(2.4-4.6)
$50,000 - $74,999	3.2	(2.4-4.3)	4.2	(3.2-5.4)	1.6	(1.1-2.4)
≥ $75,000	2.6	(2.1-3.3)	2.8	(2.3-3.4)	1.5	(1.1-2.1)
Health Insurance						
Insured	5.1	(4.7-5.6)	5.3	(4.9-5.8)	3.6	(3.2-4.0)
Uninsured	3.8	(2.4-5.9)	3.8	(2.4-5.9)	2.7	(1.6-4.6)
Disability Status						
No disabilities	3.0	(2.6-3.5)	2.8	(2.4-3.2)	1.9	(1.6-2.3)
Adults with disabilities	10.8	(9.6-12.2)	12.3	(11.1-13.7)	8.5	(7.4-9.7)

Among all adults, the proportion ever told by a doctor that: [a] they had a heart attack or myocardial infarction, [b] they had angina or coronary heart disease, or [c] they had a stroke.
[d] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Cardiovascular Disease by Gender Michigan, 2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
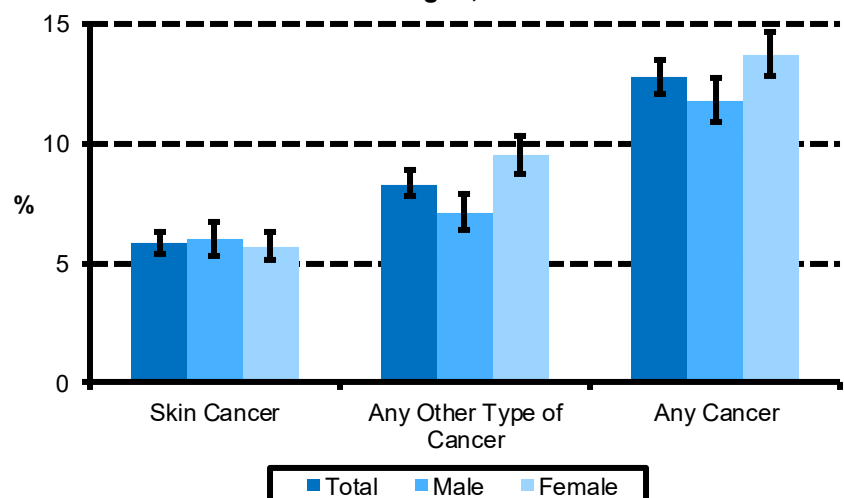
27

Cancer

Cancer is the second leading cause of death in both Michigan and the U.S.[30] There are more than 100 different types of cancer and there are nearly 1.7 million new cases of cancer expected in 2018. By 2030, the expected number of new cases per year will rise to roughly 23.6 million.[31]

♦ In 2016, an estimated 5.8% of Michigan adults had ever been told by a doctor that they had skin cancer, and 8.3% reported ever being diagnosed with a type of cancer other than skin cancer.

♦ When combining these two measures into one indicator, an estimated 12.8% of Michigan adults had ever been told by a doctor that they had some form of cancer.

♦ Females (13.7%) were more likely than males (11.8%) to report ever being diagnosed with cancer.

♦ White, non-Hispanic adults (14.7%) reported a significantly higher prevalence of cancer than Black, non-Hispanic adults (7.1%) and Hispanic adults (3.1%).

♦ Adults with disabilities reported higher cancer prevalences than adults without disabilities.

♦ In 2016, the prevalence for skin cancer among Michigan adults (5.8%) was comparable to the U.S. median prevalence (5.9%). The prevalence for other types of cancer (8.3%) was slightly higher than the U.S. median prevalence (6.7%).

Demographic Characteristics	Ever Told Skin Cancer[a]		Ever Told Any Other Types of Cancer[b]		Ever Told Cancer[c]	
	%	95% Confidence Interval	%	95% Confidence Interval	%	95% Confidence Interval
Total	5.8	(5.4-6.3)	8.3	(7.8-8.9)	12.8	(12.1-13.5)
Age						
18 - 34	--[d]	--[d]	1.5	(1.1-2.2)	2.0	(1.4-2.7)
35 - 44	--[d]	--[d]	3.1	(2.3-4.3)	4.4	(3.3-5.9)
45 - 54	3.2	(2.5-4.2)	5.9	(4.8-7.3)	8.9	(7.5-10.5)
55 - 64	7.5	(6.4-8.8)	11.0	(9.6-12.5)	17.1	(15.5-18.9)
65 - 74	14.3	(12.7-16.1)	18.6	(16.7-20.6)	29.2	(27.0-31.5)
75 +	20.5	(18.2-23.0)	24.2	(21.7-27.0)	37.8	(34.9-40.8)
Gender						
Male	6.0	(5.3-6.7)	7.1	(6.4-7.9)	11.8	(10.9-12.7)
Female	5.7	(5.1-6.3)	9.5	(8.7-10.3)	13.7	(12.8-14.7)
Race/Ethnicity						
White, non-Hispanic	7.3	(6.7-7.9)	9.1	(8.5-9.7)	14.7	(13.9-15.5)
Black, non-Hispanic	--[d]	--[d]	7.0	(5.7-8.6)	7.1	(5.8-8.8)
Other, non-Hispanic	2.5	(1.4-4.1)	4.8	(3.4-6.7)	6.8	(5.0-9.2)
Hispanic	--[d]	--[d]	--[d]	--[d]	3.1	(1.7-5.6)
Household Income						
< $20,000	4.3	(3.4-5.5)	8.9	(7.6-10.5)	11.8	(10.2-13.5)
$20,000 - $34,999	5.7	(4.7-6.9)	10.7	(9.2-12.4)	15.1	(13.4-17.0)
$35,000 - $49,999	7.0	(5.8-8.5)	8.9	(7.5-10.5)	14.1	(12.3-16.0)
$50,000 - $74,999	5.6	(4.6-6.9)	7.5	(6.2-9.0)	11.9	(10.3-13.7)
≥ $75,000	6.0	(5.2-7.0)	6.5	(5.6-7.5)	11.4	(10.3-12.7)
Health Insurance						
Insured	6.2	(5.7-6.6)	8.7	(8.2-9.3)	13.4	(12.8-14.1)
Uninsured	--[d]	--[d]	--[d]	--[d]	6.8	(4.9-9.2)
Disability Status						
No disabilities	5.1	(4.7-5.7)	6.6	(6.1-7.2)	10.6	(9.9-11.4)
Adults with disabilities	8.1	(7.2-9.2)	13.9	(12.6-15.3)	19.9	(18.3-21.5)

Among all adults, the proportion ever told by a doctor that: [a] they had skin cancer, [b] they had a form of cancer other than skin cancer, or [c] they had skin cancer or any other type of cancer.
[d] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Ever Told Cancer by Gender
Michigan, 2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

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Diabetes

In 2016, diabetes was the seventh leading cause of death in both Michigan and the U.S.[30] Obesity, poor diet, physical inactivity, and high blood pressure are just a few of the known risk factors that are associated with the development of diabetes.[32]

♦ In 2016, an estimated 11.2% of Michigan adults reported ever being told by a doctor that they had diabetes.

♦ The prevalence of diabetes increased with age and decreased with increasing household income level.

♦ The prevalence of diabetes was greater in males than in females.

♦ The prevalence of diabetes was similar by race/ethnicity.

♦ Uninsured adults (7.3%) were less likely to have been diagnosed with diabetes than insured adults (11.6%), while adults with disabilities (21.0%) were more likely to be have been diagnosed than adults without disabilities (8.0%).

♦ Obese (19.4% [17.9-21.0]) and overweight (9.8% [8.8-11.0]) adults reported significantly higher lifetime prevalences of diabetes than healthy weight adults (4.3% [3.6-5.2]).

♦ Prior to the BRFSS methodology changes that were implemented in 2011, the prevalence of diabetes among Michigan adults was increasing slightly over time. This trend seems to have stabilized a bit since 2011.

♦ In 2016, the prevalence of diabetes among Michigan adults (11.2%) was slightly higher than the U.S. median prevalence (10.5%).

Demographic Characteristics	Ever Told Diabetes[a]	
	%	95% Confidence Interval
Total	**11.2**	**(10.5-11.8)**
Age		
18 - 24	--[b]	--[b]
25 - 34	1.7	(1.0-2.7)
35 - 44	6.3	(4.8-8.2)
45 - 54	12.2	(10.6-14.1)
55 - 64	16.6	(14.9-18.5)
65 - 74	23.0	(20.9-25.2)
75 +	21.1	(18.7-23.7)
Gender		
Male	12.1	(11.2-13.2)
Female	10.3	(9.4-11.2)
Race/Ethnicity		
White, non-Hispanic	11.0	(10.3-11.8)
Black, non-Hispanic	12.8	(10.8-15.1)
Other, non-Hispanic	11.0	(8.3-14.4)
Hispanic	9.7	(6.4-14.3)
Household Income		
< $20,000	14.5	(12.6-16.7)
$20,000 - $34,999	13.8	(12.1-15.6)
$35,000 - $49,999	11.8	(10.1-13.7)
$50,000 - $74,999	10.6	(8.9-12.5)
≥ $75,000	7.1	(6.1-8.2)
Health Insurance		
Insured	11.6	(10.9-12.3)
Uninsured	7.3	(5.2-10.0)
Disability Status		
No disabilities	8.0	(7.3-8.7)
Adults with disabilities	21.0	(19.4-22.7)

[a] Among all adults, the proportion reporting that they were ever told by a doctor that they had diabetes. Adults told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed.
[b] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.
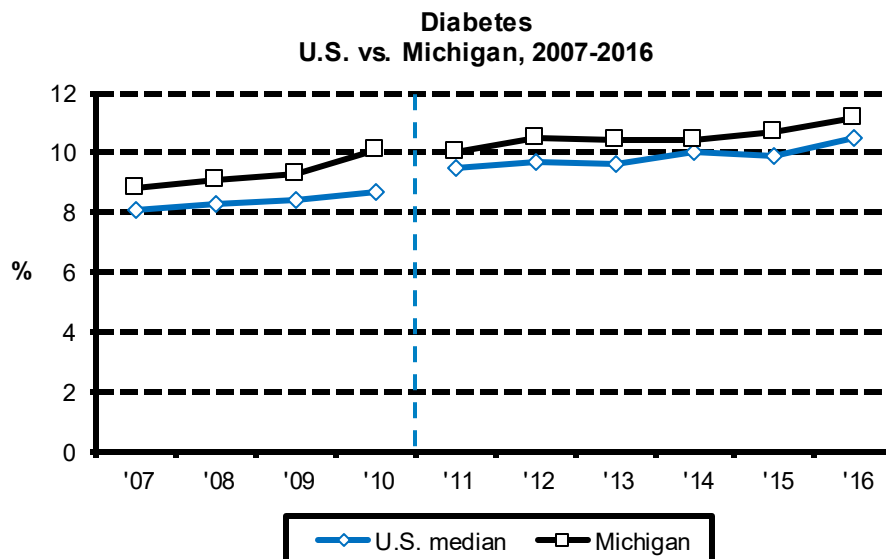
Diabetes
U.S. vs. Michigan, 2007-2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
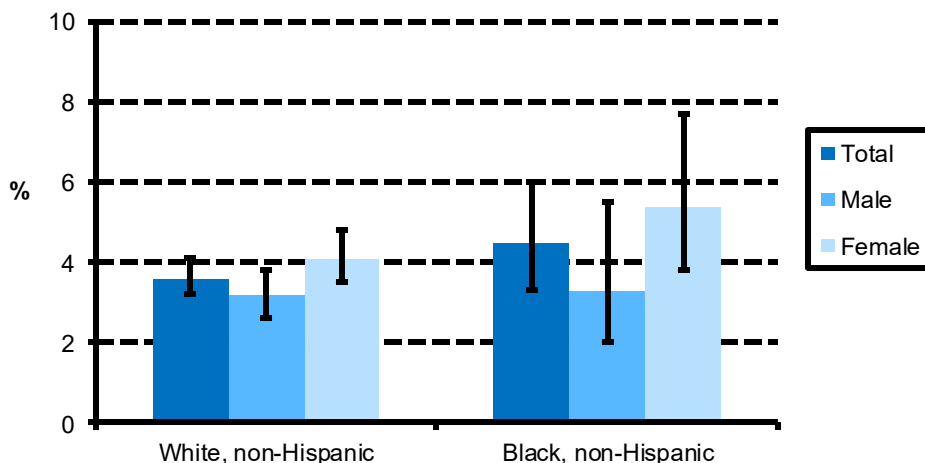
Kidney Disease

Kidney disease is a condition in which the kidneys are damaged and cannot filter blood properly. Adults with diabetes or hypertension are at increased risk of kidney disease. Kidney disease is also a risk factor for the development of cardiovascular disease.[33]

♦ In 2016, an estimated 3.7% of Michigan adults reported ever being told by a doctor that they had kidney disease.

♦ The prevalence of kidney disease increased with age and decreased with increasing household income level.

♦ The prevalence of kidney disease was greater in females than in males.

♦ The prevalence of kidney disease was similar by race/ethnicity.

♦ Adults with disabilities (7.2%) were more likely to have been diagnosed with kidney disease than adults without disabilities (2.6%).

♦ Michigan adults with diabetes (10.2% [95% CI: 8.5-12.2]) were nearly four times more likely to have being diagnosed with kidney disease than adults without diabetes (2.9% [95% CI: 2.6-3.3]).

♦ The prevalence of kidney disease was similar by gender for both White, non-Hispanic and Black, non-Hispanic adults.

♦ In 2016, the prevalence of kidney disease among Michigan adults (3.7%) was slightly higher than the U.S. median prevalence (2.8%).

	Ever Told Kidney Disease[a]	
Demographic Characteristics	**%**	**95% Confidence Interval**
Total	**3.7**	**(3.3-4.1)**
Age		
18 - 24	1.5	(0.8-2.6)
25 - 34	1.4	(0.9-2.4)
35 - 44	1.9	(1.3-2.9)
45 - 54	3.8	(2.9-5.1)
55 - 64	4.9	(4.0-6.0)
65 - 74	6.2	(5.1-7.5)
75 +	8.3	(6.7-10.2)
Gender		
Male	3.2	(2.7-3.7)
Female	4.2	(3.7-4.9)
Race/Ethnicity		
White, non-Hispanic	3.6	(3.2-4.1)
Black, non-Hispanic	4.4	(3.3-5.9)
Other, non-Hispanic	4.1	(2.7-6.2)
Hispanic	--[b]	--[b]
Household Income		
< $20,000	6.4	(5.1-7.9)
$20,000 - $34,999	4.6	(3.7-5.8)
$35,000 - $49,999	3.6	(2.7-4.8)
$50,000 - $74,999	2.6	(1.9-3.5)
≥ $75,000	2.5	(1.9-3.1)
Health Insurance		
Insured	3.8	(3.5-4.3)
Uninsured	--[b]	--[b]
Disability Status		
No disabilities	2.6	(2.2-3.0)
Adults with disabilities	7.2	(6.3-8.3)

[a] Among all adults, the proportion reporting ever being told by a doctor that they had kidney disease.
[b] Suppressed due to a denominator < 50 and/or a relative standard error > 30%.

Kidney Disease by Race and Gender
Michigan, 2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.
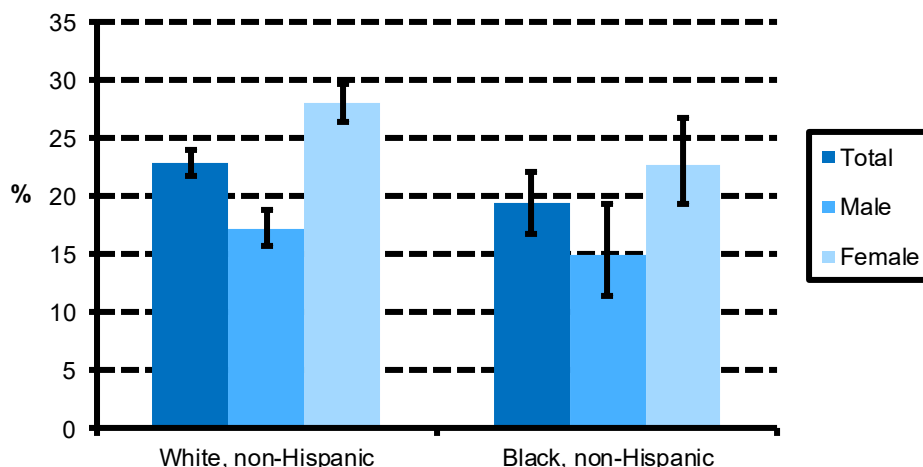
30

Depression

Depression is a common and treatable medical disorder that is more common among individuals with chronic conditions such as obesity, diabetes, and arthritis.[34]

- In 2016, an estimated 22.0% of Michigan adults reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression.

- The prevalence of depression was highest in the middle age groups and decreased with increasing household income level.

- Females (26.9%) reported a significantly higher prevalence of depression than males (16.8%).

- The prevalence of depression was similar by race/ethnicity and insurance status.

- Adults with disabilities (44.0%) were more likely to have been diagnosed with depression than adults without disabilities (14.8%).

- White, non-Hispanic females (28.1%) reported a significantly higher prevalence of depression than White, non-Hispanic males (17.2%).

- Black, non-Hispanic females (22.8%) reported a significantly higher prevalence of depression than Black, non-Hispanic males (15.0%).

- In 2016, the prevalence of depression among Michigan adults (22.0%) was higher than the U.S. median prevalence (17.4%).

Demographic Characteristics	Ever Told Depression[a]	
	%	95% Confidence Interval
Total	**22.0**	**(21.1-23.0)**
Age		
18 - 24	22.5	(19.3-26.1)
25 - 34	24.2	(21.4-27.2)
35 - 44	24.3	(21.7-27.2)
45 - 54	22.9	(20.7-25.3)
55 - 64	23.7	(21.8-25.8)
65 - 74	18.0	(16.2-19.9)
75 +	15.3	(13.1-17.7)
Gender		
Male	16.8	(15.6-18.2)
Female	26.9	(25.5-28.3)
Race/Ethnicity		
White, non-Hispanic	22.8	(21.7-23.9)
Black, non-Hispanic	19.2	(16.6-22.0)
Other, non-Hispanic	20.8	(17.0-25.2)
Hispanic	19.1	(14.1-25.3)
Household Income		
< $20,000	36.3	(33.3-39.4)
$20,000 - $34,999	24.9	(22.5-27.4)
$35,000 - $49,999	22.2	(19.6-25.1)
$50,000 - $74,999	20.2	(17.9-22.8)
≥ $75,000	14.1	(12.6-15.8)
Health Insurance		
Insured	22.1	(21.1-23.1)
Uninsured	22.1	(18.5-26.2)
Disability Status		
No disabilities	14.8	(13.9-15.9)
Adults with disabilities	44.0	(41.9-46.3)

[a] Among all adults, the proportion reporting ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression.

Depression by Race and Gender
Michigan, 2016

Due to methodology changes that took place in 2011, BRFSS estimates from 2011 and moving forward cannot be compared to BRFSS estimates from 2010 and earlier.

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Acknowledgements

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