

MICHIGAN BRFSS SURVEILLANCE BRIEF

A NEWSLETTER FROM THE LIFECOURSE EPIDEMIOLOGY & GENOMICS DIVISION, MDHHS



Asthma among Michigan Adults

Prevalence, Health Conditions, & Health Behaviors

Background

Asthma is a chronic inflammatory disorder of the airways characterized by airway hyperresponsiveness to stimuli, variable airflow limitation, and respiratory symptoms, including wheezing, shortness of breath, tightness or discomfort in the chest and/or dry cough. The development of asthma depends on a complex interaction of genetics and environmental factors that are not fully understood. However, allergies, a family history of allergy, and cigarette smoking have been implicated as risk factors for developing asthma.¹ Although asthma cannot be cured, it can be controlled. With appropriate disease management, people with asthma can prevent asthma symptoms, as well as maintain normal activity levels. People whose asthma is adequately managed should experience fewer sleep disruptions or missed days of school or work because of their asthma. Finally, people with asthma should have minimal need for emergency department (ED) visits or hospitalizations because of their asthma.¹

Methods

The 2016 Michigan Behavioral Risk Factor Survey (MiBRFS) included demographic questions as well as questions related to the prevalence of lifetime and current asthma. Lifetime asthma is defined as the proportion of adults that were ever told by a doctor, nurse, or other health care professional that they had asthma. Current asthma is defined as the proportion of adults who reported that they still had asthma. Questions on risk factors for asthma such as smoking as well as Chronic Obstructive Pulmonary Disease (COPD) are included. Additionally, respondents answered questions about their access and barriers to health care which may influence asthma severity and symptom management. These results were used to summarize the prevalence of current and lifetime asthma among the Michigan adult population in 2016.

Additionally, they were used to assess how demographic and behavioral characteristics along with health care access may impact the prevalence of asthma. Demographic sub-populations were also compared to determine if significant differences existed among these asthma-related indicators.

Results

Based on 2016 MiBRFS data, an estimated 10.9% of Michigan adults have current asthma (Table 1). The prevalence of ever being diagnosed with asthma among Michigan adults (lifetime asthma) has remained relatively steady over the past decade. Michigan's lifetime prevalence of asthma in 2016 (16.3%) is also higher than the 2016 U.S. median prevalence (14.0%),² [data not shown].

Table 1. Asthma Prevalence by Demographic Characteristics among Michigan Adults, 2016 Michigan BRFS

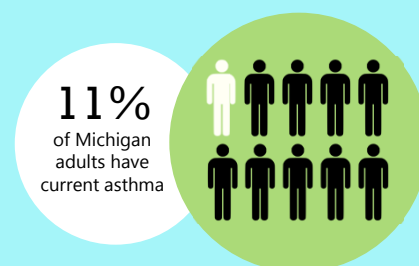
	Lifetime Asthma Prevalence ^a		Current Asthma Prevalence ^b	
	%	95% CI	%	95% CI
Total	16.3	(15.4-17.2)	10.9	(10.2-11.7)
Age				
18-34 years	20.4	(18.4-22.5)	11.8	(10.2-13.6)
35-64 years	15.6	(14.5-16.8)	11.5	(10.5-12.5)
65+ years	12.2	(11.0-13.5)	8.5	(7.5-9.7)
Gender				
Male	14.6	(13.4-15.8)	8.3	(7.4-9.4)
Female	17.9	(16.7-19.1)	13.4	(12.4-14.5)
Race and 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)
Hispanic	12.2	(8.4-17.4)	6.6	(3.8-11.4)
Education				
Less than high school	24.9	(21.0-29.2)	18.8	(15.4-22.7)
High school graduate	16.0	(14.5-17.6)	10.6	(9.4-12.0)
Some college	15.8	(14.4-17.3)	10.6	(9.4-11.9)
College graduate	13.4	(12.2-14.7)	8.3	(7.4-9.4)
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)

^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.

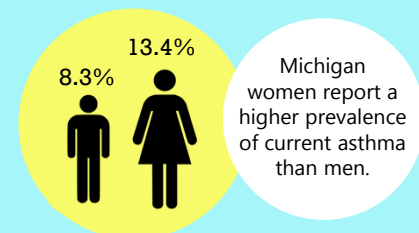
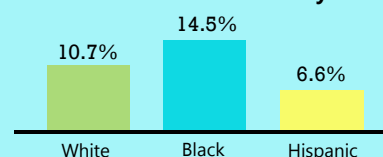
^b Among all adults, the proportion reporting that they still have asthma.

MiBRFSS News:

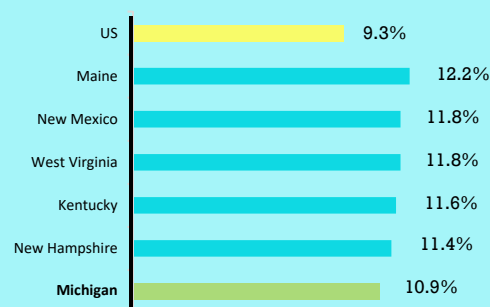
- The 2016 MiBRFSS annual tables and report are currently available at www.michigan.gov/brfs.
- The 2017 MiBRFSS has been completed and the resulting data has been submitted to the CDC for weighting.
- The 2018 MiBRFSS went into the field in January 2018 and data collection is proceeding as anticipated.
- Did you miss an issue of Michigan BRFSS Surveillance Brief? Previous issues are available on the MiBRFSS website.



Current Asthma Prevalence by Race



U.S. & States with the Highest Current Asthma Prevalence



In 2016, females (13.4%) reported a significantly higher prevalence of current asthma than males (8.3%). Black, non-Hispanic adults had a significantly higher prevalence of both lifetime and current asthma than White, non-Hispanic and Hispanic adults (Table 1). Additionally, the prevalence of both lifetime and current asthma decreases with increasing education and household income level.

The results in Table 2 demonstrate the relationships between asthma and health conditions and behaviors. For Michigan adults who reported having been diagnosed with COPD, the prevalence of current asthma is four times higher than in those without COPD. The prevalence of current asthma for both cigarette and e-cigarette smokers is significantly higher than for non-smokers. Of the individuals surveyed, those that were prevented from visiting a physician due to cost in the past 12 months, experienced a significantly higher prevalence of current asthma.

Discussion

Asthma remains a challenge throughout Michigan and management of the disease is necessary for maintaining normal activity and preventing missed days of school or work. Michigan has a significantly higher prevalence of both current and lifetime asthma (10.9% and 16.3%, respectively) compared to the national prevalence (9.3% and 14.0%, respectively). Although asthma can be managed to reduce asthma symptoms, there still remains significant differences in the burden of current asthma between racial and socioeconomic groups. Additionally, asthma is known to be exacerbated by certain health behaviors and other chronic conditions. This is supported by the results shown in Table 2. The importance of improving access to health care is also demonstrated as asthma prevalence is higher in those that were prevented from seeking care due to cost. Consistent asthma management is essential for reducing emergency department and urgent care visits as uncontrolled asthma is known to increase overall health care costs.³ Adults in the demographic groups most affected by asthma should receive greater asthma education and management tools to reduce the overall asthma burden in Michigan.

To obtain more information on asthma-related symptoms, health care, medication, and management, the Michigan Asthma Call-Back Survey is conducted each year in conjunction with the MiBRFS. It allows for a more in-depth analysis of the asthma burden throughout Michigan and provides important information for the MDHHS Asthma Program. To find out more about the Michigan Asthma Call-Back Survey, please visit our website at www.michigan.gov/brfs.

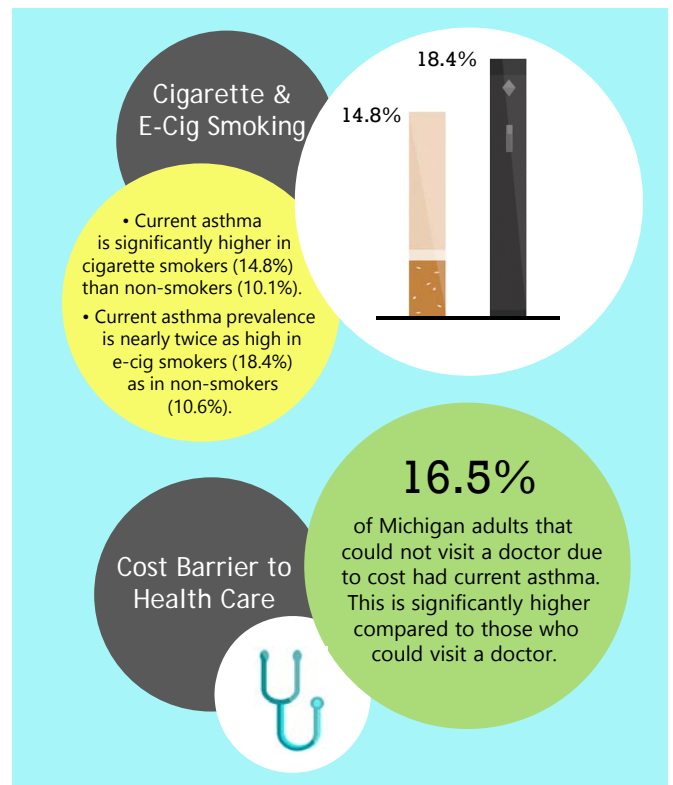
References

- ¹ National Heart, Lung, and Blood Institute. Guidelines for the Diagnosis and Management of Asthma (EPR-3). <http://www.nhlbi.nih.gov/health-pro/guidelines/current/asthma-guidelines>. July 2007.
- ² Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. BRFSS Prevalence & Trends Data [online]. 2015. <https://www.cdc.gov/brfss/brfssprevalence/>.
- ³ U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality. Asthma Care Quality Improvement: A Resource Guide for State Action. 2009. <https://archive.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/asthmaqual/asthmacare/asthmqguide.pdf>.

Table 2. Asthma Prevalence by Comorbidity, Health Behavior & Access to Care among Michigan Adults, 2016 Michigan BRFSS

	Current Asthma Prevalence ^a	
	%	95% CI
Total	10.9	(10.2-11.7)
COPD ^b		
Yes	36.1	(32.5-39.9)
No	8.5	(7.8-9.2)
Current Cigarette Use ^c		
Yes	14.8	(12.9-17.0)
No	10.1	(9.3-10.9)
Current E-Cig Use ^d		
Yes	18.4	(14.0-23.6)
No	10.6	(9.9-11.4)
Health Care Prevented by Cost ^e		
Yes	16.5	(14.1-19.3)
No	10.2	(9.4-10.9)

^a Adults who reported that they still have asthma.
^b Adults who reported that they had ever been diagnosed with chronic obstructive pulmonary disorder (COPD).
^c Adults who reported that they smoke cigarettes now, either every day or on some days.
^d Adults who reported that they smoke e-cigarettes now, either every day or on some days.
^e Adults who reported that in the past 12 months, they could not see a doctor when needed due to the cost.



What is the Michigan Behavioral Risk Factor Surveillance System (MiBRFSS)?

The MiBRFSS comprises annual, statewide telephone surveys of Michigan adults aged 18 years and older and is part of the national BRFSS coordinated by the CDC. The MiBRFSS follow the CDC BRFSS protocol and use the standardized English core questionnaire that focuses on various health behaviors, medical conditions, and preventive health care practices related to the leading causes of mortality, morbidity, and disability. Landline and cell phone interviews are conducted across each calendar year. Data are weighted to adjust for the probabilities of selection and a raking weighting factor is used to adjust for the distribution of the Michigan adult population based on eight demographic variables. All analyses are performed using SAS-callable SUDAAN[®] to account for the complex sampling design.



Suggested citation: Barth O, Anderson B. Michigan Adults with Current Asthma: Symptoms, Management, and Productivity. Michigan BRFSS Surveillance Brief. Vol. 11, No. 2. Lansing, MI: Michigan Department of Health and Human Services, Lifecourse Epidemiology and Genomics Division, December 2018.