



# MICHIGAN BRFSS SURVEILLANCE BRIEF

A NEWSLETTER FROM THE LIFECOURSE EPIDEMIOLOGY & GENOMICS DIVISION, MDHHS

## Highlights from the 2011-2013 Michigan Asthma Call-Back Survey

**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. Whether or not a person develops asthma depends on a complex interaction of genetics and environmental factors that are not fully understood. However, allergies, a family history of allergy, and perinatal exposure to tobacco smoke have been implicated as risk factors for developing asthma.<sup>1</sup>

Asthma cannot be cured, but it can be controlled. With appropriate disease management, people with asthma can prevent asthma symptoms, during the day and night, and maintain normal activity levels. People whose asthma is adequately managed should not experience sleep disruption or miss 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.<sup>1</sup>

**Methods.** The Michigan Asthma Call-Back Survey (MI ACBS) is an in-depth asthma survey funded by the National Center for Environmental Health since 2005. This survey is conducted on an annual basis among landline and cell phone respondents from the Michigan Behavioral Risk Factor Surveillance System (MiBRFSS) who reported an asthma diagnosis. The MI ACBS allows for collection of more detailed information on asthma-related symptoms, health care, medication use, disease management, and the overall impact of this disease on people's lives.

These results summarize the symptoms, management and productivity loss data collected through the 2011-2013 MI ACBS and focus only on Michigan adults with current asthma. Demographic subpopulations were also compared to determine if significant differences existed among these asthma-related indicators.

**Results.** Based on 2011-2013 MiBRFSS data, an estimated 10.6% of Michigan adults have current asthma. Females (13.1%) reported a higher prevalence than males (8.0%), and Blacks (13.9%) reported a higher prevalence than Whites (9.9%). The prevalence also decreased with increasing education and household income level (data not shown).

Among Michigan adults with current asthma, an estimated 45.0% reported asthma symptoms on 9 or more days in the past month, and 8.4% reported having 2 or more asthma-related ED/Urgent Care visits in the past 12 months (Table 1). Blacks (19.9%) reported a higher

**Table 1. Asthma-Related Symptoms and Productivity Losses among Michigan Adults With Current Asthma, 2011-2013 Michigan ACBS**

	Asthma Symptoms on ≥ 9 Days in Past Month		≥ 2 ED/Urgent Care Visits for Asthma in Past 12 Months		Usual Activities Limited Due to Asthma in Past 12 Months		≥ 6 Days of Missed Work/Activities in Past 12 Months Due to Asthma	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>Total</b>	<b>45.0</b>	<b>(41.4-48.7)</b>	<b>8.4</b>	<b>(6.3-11.1)</b>	<b>60.9</b>	<b>(57.4-64.3)</b>	<b>16.9</b>	<b>(14.2-20.0)</b>
<b>Age</b>								
18-34 years	40.6	(32.5-49.3)	12.9	(7.7-20.6)	57.6	(49.3-65.5)	13.8	(8.5-21.7)
35-64 years	44.9	(40.6-49.3)	6.9	(5.1-9.5)	62.7	(58.5-66.6)	18.5	(15.2-22.5)
65+ years	54.0	(48.3-59.5)	4.7	(2.8-7.7)	61.7	(56.2-66.9)	17.0	(13.2-21.5)
<b>Gender</b>								
Male	41.4	(35.4-47.7)	5.7 <sup>a</sup>	(3.0-10.8) <sup>a</sup>	57.5	(51.4-63.4)	14.4	(10.6-19.3)
Female	47.2	(42.7-51.6)	10.0	(7.3-13.4)	62.8	(58.6-66.9)	18.4	(14.9-22.5)
<b>Race</b>								
White	46.3	(42.2-50.4)	5.6	(3.6-8.6)	60.0	(56.0-63.8)	13.7	(11.1-16.9)
Black	39.1	(30.5-48.4)	19.9	(13.4-28.5)	61.8	(52.6-70.3)	32.7	(23.8-42.9)
<b>Education</b>								
Less than high school	58.9	(46.0-70.7)	18.9	(10.5-31.5)	75.0	(63.1-84.0)	33.9	(22.9-47.0)
High school graduate	48.7	(42.0-55.4)	9.0	(5.9-13.3)	61.5	(54.8-67.9)	18.4	(14.0-23.8)
Some college	43.4	(37.5-49.4)	6.3	(3.7-10.5)	63.6	(57.8-69.0)	14.0	(10.1-19.1)
College graduate	34.0	(28.9-39.5)	3.8	(2.2-6.6)	45.7	(40.2-51.2)	8.8	(6.3-12.0)

<sup>a</sup> This estimate should be used with caution due to its low reliability and precision.

### MiBRFSS News

- The 2014 MiBRFSS annual tables and report are currently available on the MiBRFSS website ([www.michigan.gov/brfs](http://www.michigan.gov/brfs)).
- The 2015 MiBRFSS has been completed and the resulting data has been submitted to the CDC for weighting.
- The 2016 MiBRFSS went into the field in January 2016 and data collection is proceeding as anticipated.
- Did you miss an issue of *Michigan BRFSS Surveillance Brief*? Back issues are available on the MiBRFSS website.

prevalence of 2 or more asthma-related ED/Urgent Care visits than Whites (5.6%), while adults with less than a high school diploma were more likely to report having asthma symptoms on 9 or more days in the past month and 2 or more asthma-related ED/Urgent Care visits within the past 12 months than college graduates (Table 1).

An estimated 60.9% of Michigan adults with current asthma reported that they limited their usual activities due to their asthma and 16.9% reported that they were unable to work or carry out their usual activities because of their asthma on 6 or more days in the past 12 months (Table 1). Blacks (32.7%) were more likely than Whites (13.7%) to report missing work/activities due to their asthma, while adults with a college education were less likely to report that their asthma limited their usual activities and that they missed work/activities due to their asthma than adults with less than a high school education.

**Table 2. Disease Management among Michigan Adults With Current Asthma, 2011-2013 Michigan ACBS**

	Ever Received Asthma Action Plan		Ever Taken Asthma Management Class	
	%	95% CI	%	95% CI
<b>Total</b>	<b>29.8</b>	<b>(26.6-33.3)</b>	<b>7.8</b>	<b>(6.2-9.9)</b>
<b>Age</b>				
18-34 years	27.5	(20.7-35.5)	7.8	(4.5-13.1)
35-64 years	32.8	(28.8-37.1)	7.9	(5.8-10.5)
65+ years	25.2	(20.8-30.2)	8.0	(5.4-11.6)
<b>Gender</b>				
Male	23.7	(19.0-29.2)	6.8	(4.4-10.4)
Female	33.4	(29.3-37.7)	8.4	(6.4-11.1)
<b>Race</b>				
White	27.3	(23.8-31.0)	4.7	(3.4-6.3)
Black	41.2	(32.2-50.8)	21.0	(14.4-29.7)
<b>Education</b>				
Less than high school	35.0	(24.1-47.7)	6.1 <sup>a</sup>	(2.8-13.0) <sup>a</sup>
High school graduate	25.6	(20.5-31.4)	9.3	(6.2-13.7)
Some college	30.3	(25.1-36.1)	7.9	(5.1-12.0)
College graduate	30.6	(25.8-35.9)	7.2	(4.9-10.7)

<sup>a</sup> This estimate should be used with caution due to its low reliability and precision.

Table 2 shows that 29.8% of Michigan adults with current asthma have ever received an asthma action plan from their doctor or health care provider. Furthermore, only 7.8% reported having ever taken an asthma management class. Females (33.4%) were more likely than males (23.7%) to have reported ever receiving an asthma action plan, while Blacks were more likely than Whites to have reported ever receiving an asthma action plan (41.2% vs. 27.3%) and taking an asthma management class (21.0% vs. 4.7%).

**Conclusions.** Asthma presents a significant burden and challenge in Michigan. Poor asthma control and severe asthma outcomes that could be prevented still occur among Michigan residents. It is clear that the goals of asthma therapy are not being met for many with asthma in Michigan, and that dramatic racial, socioeconomic, and geographic disparities persist. Almost half of adults with asthma reported asthma symptoms on 9 or more days in the past month. According to The National Heart, Lung, and Blood Institute’s treatment guidelines, the overarching goal of therapy is to achieve asthma control, defined, in part, by no or few asthma symptoms.<sup>1</sup> Another key clinical activity to help with asthma management is to develop an asthma action plan. Only 29.8% of Michigan adults reported they had ever received one.

From the results reported herein it is clear that asthma is not in control for many Michigan adults. Medical providers need education on asthma management tools and their implementation in practice. More adults with asthma should have asthma education and action plans in place to improve asthma control and increase the number of symptom-free days.

**References**

<sup>1</sup> 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.

**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 annual Michigan Behavioral Risk Factor Surveys (MiBRFS) 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.

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