

**Estimates of Asthma-Related Health Conditions Among Michigan Adults with
Current Asthma
Michigan Asthma Call-Back Survey
2005-2007 Combined**

Standard Tables

**Division of Genomics, Perinatal Health, and Chronic Disease Epidemiology
Bureau of Epidemiology
Michigan Department of Community Health**

*Prepared by: Ann Rafferty
July 8, 2009*

Table of Contents

Introduction.....3
Table 1: Prevalence of Asthma Symptoms.....4
Table 2: Percent Distribution of Number of Asthma Symptom-Free Days in Past 2 Weeks.....5
Table 3: Prevalence of Asthma-Related Health Care Utilization.....6
Table 4: Prevalence of Long-Term Controller Medication Use in Past 3 Months.....7
Table 5: Prevalence of Comorbid Conditions.....8
Table 6: Prevalence of Experiencing Cost Barriers to Asthma Care in Past 12 Months.....9
Table 7: Prevalence of Indicators of Knowledge Related to Asthma Management.....10
Table 8: Prevalence of Asthma Triggers in Home Environment.....12
Table 9: Prevalence of Asthma Trigger Avoidance Behaviors in Home Environment.....14
Table 10: Prevalence of Ever Being Advised to Modify Environment to Improve Asthma.....16
Table 11: Percent Distribution of Number of Days Unable to Work or Carry Out Usual Activities.....17
Table 12: Prevalence of Work-Related Asthma Using 3 Definitions.....18

Introduction

The Michigan Asthma Call-Back Survey has been conducted annually since 2005 in conjunction with the Michigan Behavioral Risk Factor Survey (MiBRFS), an annual, statewide telephone survey of Michigan adults aged 18 years and older. Both of these surveys are conducted through a collaborative effort among the Behavioral Surveillance Branch (BSB) at the Centers for Disease Control and Prevention, the Office for Survey Research (OSR) at Michigan State University's Institute for Public Policy and Social Research, and the Michigan Department of Community Health. The MiBRFS participates in the national [Behavioral Risk Factor Surveillance System](#) that is coordinated by BSB.

Respondents to the MiBRFS who had ever been diagnosed with asthma or whose randomly selected child had ever been diagnosed with asthma were asked at the end of the MiBRFS interview if they would be willing to participate in an additional interview focused on asthma. Those who agreed were called back within 2 weeks of the MiBRFS interview and administered a comprehensive, standardized questionnaire on asthma-related symptoms, health care, medication, and management. Two separate, but very similar, questionnaires were used: one with questions about the adult respondent with asthma and the other with questions about the selected child with asthma.

This report presents the results for adults from the 2005-2007 Michigan Asthma Call-Back Surveys combined. The total 3-year sample size of completed interviews for adults was 1,840, with 867 from 2005, 422 from 2006, and 551 from 2007. Estimates were weighted to adjust for the probabilities of selection and a post-stratification weighting factor that adjusted for the distribution of Michigan adults by age, sex, and race/ethnicity at the state level. Analyses were performed in SAS-Callable SUDAAN®, a statistical computing program that was designed for complex sample surveys. The estimates included in the tables that follow were restricted to adults with current asthma (n=1,365).

**Table 1. Prevalence of Asthma Symptoms, Among Adults with Current Asthma^a
Michigan Asthma Call-Back Survey, 2005-2007 Combined**

	n^b	Had Asthma Symptoms on ≥ 9 Days in Past Month^c	Difficulty Sleeping Due to Asthma Symptoms on ≥ 2 Days in Past Month^d	Usual Activities Limited at Least a Little During Past 12 Months^e
Total	1,365	38.7 (35.1-42.6)	25.7 (22.6-29.1)	61.3 (57.4-65.0)
Age in years				
18-34	190	30.1 (22.5-39.0)	20.2 (14.1-28.0)	60.0 (50.8-68.5)
35-64	850	41.5 (37.3-45.8)	29.1 (25.5-33.1)	62.9 (58.7-66.9)
≥ 65	322	49.4 (42.7-56.1)	26.8 (21.2-33.2)	59.0 (52.5-65.3)
Sex				
Male	358	41.8 (34.9-49.0)	25.9 (20.2-32.6)	53.2 (46.0-60.3)
Female	1,007	36.8 (32.8-41.1)	25.5 (22.1-29.2)	66.4 (62.1-70.4)
Race				
White	1,149	39.6 (35.7-43.7)	23.2 (20.1-26.6)	59.5 (55.4-63.5)
Black	138	31.8 (21.6-44.1)	40.5 (28.6-53.6)	69.7 (58.3-79.1)
Household income				
< \$20,000	314	53.8 (45.8-61.6)	42.3 (34.7-50.2)	80.1 (73.5-85.4)
\$20,000-34,999	275	37.5 (29.9-45.8)	30.2 (22.9-38.6)	75.7 (68.5-81.7)
\$35,000-49,999	162	32.6 (24.2-42.2)	25.6 (18.6-34.3)	55.8 (45.2-65.9)
\$50,000-74,999	214	29.9 (22.1-39.1)	16.1 (9.8-25.2)	55.0 (45.4-64.1)
≥ \$75,000	248	30.1 (23.1-38.1)	17.7 (12.5-24.5)	44.1 (36.1-52.3)
Education				
< HS graduate	98	48.1 (33.0-63.6)	39.8 (26.5-54.7)	78.1 (63.0-88.2)
HS graduate	402	43.9 (36.7-51.3)	27.3 (21.8-33.7)	57.2 (49.5-64.6)
Some college	457	40.3 (33.9-47.0)	25.3 (20.1-31.4)	69.2 (63.0-74.8)
College graduate	405	28.7 (23.2-34.9)	21.1 (15.9-27.5)	51.8 (45.3-58.2)

^aRespondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?”

^bSample size (unweighted) for demographic subpopulations. Cell sample sizes for prevalence estimates will vary due to missing values.

^cReported ≥ 9 days to the following question, “During the past 30 days, on how many days did you have any symptoms of asthma?”

^dReported ≥ 2 days to the following question, “During the past 30 days, on how many days did symptoms of asthma make it difficult for you to stay asleep?”

^eReported “a little,” “a moderate amount,” or “a lot” to the following question, “During the past 12 months, would you say you limited your usual activities due to asthma not at all, a little, a moderate amount, or a lot?”

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

**Table 2. Percent Distribution of Number of Asthma Symptom-Free Days^a in Past 2 Weeks, Among Adults with Current Asthma^b
Michigan Asthma Call-Back Survey, 2005-2007 Combined**

	None	1-6 Days	7-13 Days	14 Days
Total	22.0 (19.2-25.1)	16.8 (13.9-20.1)	24.4 (21.2-28.0)	36.8 (33.1-40.6)
Age in years				
18-34	12.4 (7.6-19.8)	17.2 (11.2-25.4)	30.6 (23.0-39.4)	39.8 (31.2-49.0)
35-64	25.0 (21.7-28.7)	16.9 (13.6-20.8)	22.7 (19.5-26.4)	35.4 (31.5-39.5)
≥ 65	34.0 (28.1-40.4)	15.8 (11.4-21.5)	16.2 (12.0-21.6)	34.0 (28.0-40.6)
Sex				
Male	21.4 (16.4-27.4)	20.1 (14.9-26.6)	24.6 (18.8-31.4)	34.0 (27.5-41.1)
Female	22.4 (19.3-25.8)	14.7 (11.6-18.5)	24.4 (20.7-28.4)	38.5 (34.2-43.0)
Race				
White	23.0 (19.9-26.5)	16.5 (13.4-20.0)	23.7 (20.4-27.4)	36.8 (32.9-40.8)
Black	14.6 (8.8-23.3)	17.1 (10.0-27.5)	28.8 (18.2-42.4)	39.5 (27.5-52.9)
Household income				
< \$20,000	33.9 (27.5-41.1)	22.4 (16.2-30.0)	18.1 (12.5-25.6)	25.6 (19.3-33.0)
\$20,000-34,999	21.4 (16.2-27.8)	17.2 (11.5-24.9)	28.7 (21.1-37.8)	32.6 (24.5-41.8)
\$35,000-49,999	24.5 (17.7-32.9)	10.8 (6.5-17.5)	31.4 (21.9-42.7)	33.3 (24.1-44.0)
\$50,000-74,999	12.4 (7.9-18.9)	13.6 (8.0-22.0)	22.7 (15.6-31.7)	51.3 (41.7-60.8)
≥ \$75,000	16.7 (11.2-24.2)	12.4 (7.9-18.9)	27.0 (20.6-34.5)	44.0 (35.9-52.3)
Education				
< HS graduate	26.4 (16.9-38.8)	13.6 (6.8-25.3)	24.5 (14.3-38.7)	35.6 (20.1-54.8)
HS graduate	25.2 (19.6-31.7)	19.6 (14.1-26.7)	20.9 (15.6-27.3)	34.3 (27.6-41.7)
Some college	23.0 (18.3-28.5)	17.5 (12.6-23.7)	26.4 (20.6-33.0)	33.1 (27.0-39.9)
College graduate	16.4 (12.5-21.2)	13.7 (9.6-19.3)	25.9 (20.4-32.3)	44.0 (37.7-50.5)

^aResponse to the following question, “During the past two weeks, on how many days were you completely symptom-free, that is no coughing, wheezing, or other symptoms of asthma?”

^bRespondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?”

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

**Table 3. Prevalence of Asthma-Related Health Care Utilization, Among Adults with Current Asthma^a
Michigan Asthma Call-Back Survey, 2005-2007 Combined**

	≥ 2 ER/Urgent Care Visits for Asthma in Past 12 Months^b	≥ 1 Hospital Stays for Asthma in Past 12 Months^c	≥ 2 Routine Asthma Care Visits in Past 12 Months^d	Received Flu Vaccine in Past 12 Months^e
Total	5.9 (4.5-7.7)	3.6 (2.7-4.9)	33.8 (30.3-37.6)	42.8 (39.2-46.5)
Age in years				
18-34	5.7 (3.2-9.9)	2.3 (1.0-5.0)	27.9 (20.2-37.0)	26.6 (19.4-35.2)
35-64	5.8 (4.1-8.2)	3.8 (2.6-5.5)	34.9 (31.0-39.0)	43.6 (39.5-47.8)
≥ 65	6.8 (4.1-11.2)	6.3 (3.8-10.1)	45.1 (38.7-51.8)	77.5 (71.8-82.3)
Sex				
Male	3.8 (2.1-6.8)	2.9 (1.6-5.1)	33.4 (26.9-40.5)	44.3 (37.6-51.3)
Female	7.3 (5.4-9.7)	4.1 (2.9-5.7)	34.1 (30.1-38.4)	41.9 (37.8-46.1)
Race				
White	3.9 (2.8-5.5)	2.4 (1.7-3.4)	31.9 (28.3-35.8)	45.6 (41.6-49.6)
Black	18.8 (11.4-29.4)	11.2 (6.4-19.1)	44.9 (32.5-58.0)	27.3 (18.8-37.8)
Household income				
< \$20,000	11.5 (7.7-16.8)	9.9 (6.7-14.4)	43.3 (36.0-50.8)	46.8 (39.3-54.4)
\$20,000-34,999	8.9 (4.9-15.6)	4.5 (2.3-8.6)	42.7 (33.8-52.1)	42.7 (34.6-51.3)
\$35,000-49,999	3.1 (1.2-7.4)	2.0 (0.7-5.8)	31.8 (23.4-41.7)	41.3 (32.0-51.3)
\$50,000-74,999	3.1 (1.4-6.7)	1.1 (0.3-4.0)	31.1 (22.5-41.2)	46.5 (37.7-55.4)
≥ \$75,000	1.4 (0.4-4.7)	0.4 (0.1-1.6)	28.6 (21.4-37.1)	41.4 (33.5-49.8)
Education				
< HS graduate	12.9 (6.4-24.0)	8.4 (3.9-17.1)	52.0 (36.1-67.4)	43.8 (31.6-56.7)
HS graduate	6.1 (3.9-9.6)	3.9 (2.4-6.2)	36.1 (29.5-43.2)	45.6 (38.5-52.8)
Some college	6.4 (4.0-10.2)	4.0 (2.3-6.7)	34.6 (28.4-41.3)	36.5 (30.7-42.8)
College graduate	3.4 (1.8-6.5)	1.8 (0.9-3.7)	26.6 (21.4-32.5)	47.5 (41.1-53.9)

^aRespondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?”

^bReported ≥ 2 times to the following question, “During the past 12 months, how many times did you visit an emergency room or urgent care center because of your asthma?”

^cResponded “yes” to the question, “During the past 12 months, that is since [1 year ago today], have you had to stay overnight in a hospital because of your asthma? Do not include an overnight stay in the emergency room.”

^dReported ≥ 2 times to the following question, “During the past 12 months, how many times did you see a doctor or other health professional for a routine checkup for your asthma?”

^eResponded “yes” to either of the following questions, “A flu shot is an influenza vaccine injected in your arm. During the past 12 months, have you had a flu shot?” or “During the past 12 months, have you had a flu vaccine that was sprayed in your nose? The flu vaccine sprayed in the nose is also called FluMist.”

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

Table 4. Prevalence of Long-Term Controller Medication Use in Past 3 Months, Among Adults with Current Asthma^a	
Michigan Asthma Call-Back Survey, 2005-2007 Combined	
	Used \geq 1 Long-Term Controller Medication in Past 3 Months^b
Total	42.0 (38.3-45.8)
Age in years	
18-34	28.4 (20.8-37.3)
35-64	46.8 (42.6-51.0)
\geq 65	56.7 (50.1-63.0)
Sex	
Male	38.8 (32.3-45.8)
Female	44.0 (39.7-48.4)
Race	
White	43.7 (39.8-47.6)
Black	37.7 (25.9-51.1)
Household income	
< \$20,000	39.7 (32.9-47.0)
\$20,000-34,999	42.7 (34.1-51.7)
\$35,000-49,999	41.5 (32.1-51.6)
\$50,000-74,999	46.8 (37.4-56.4)
\geq \$75,000	42.8 (35.0-50.9)
Education	
< HS graduate	41.2 (26.1-58.2)
HS graduate	39.9 (33.5-46.7)
Some college	41.1 (34.7-47.9)
College graduate	45.3 (39.0-51.8)
<p>^aRespondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?” Includes respondents who reported having been diagnosed with COPD as well as asthma.</p> <p>^bRespondent reported they had taken at least one of the following long-term controller medications in the past 3 months: Accolate, Advair, Aerobid, Aerolate, Azmacort, Beclomethasone dipropionate, Beclovent, Budesonide, Cholearyl, Cromolyn, Elixophyllin, Flovent, Flunisolide, Fluticasone, Intal, Montelukast, Nedocromil, Pulmicort, Quibron, QVAR, Singulair, Slo-bid, Slo-phyllin, Theo-24, Theochron, Theodur, Theolair, Theophylline, Theo-X, Tilade, T-Phyl, Triamcinolone acetonide, Uni-Dur, Uniphyll, Vancericil, Zafirlukast, Zileuton, Zflo Filmtab.</p>	

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

Table 5. Prevalence of Comorbid Conditions, Among Adults with Current Asthma^a Michigan Asthma Call-Back Survey, 2005-2007 Combined		
	Ever Diagnosed with COPD, Emphysema, or Chronic Bronchitis^b	Ever Diagnosed with Depression^c
Total	34.3 (30.9-37.7)	32.2 (28.8-35.8)
Age in years		
18-34	16.2 (11.0-23.1)	29.7 (22.4-38.2)
35-64	41.0 (37.0-45.2)	36.2 (32.3-40.3)
≥ 65	52.4 (45.7-58.9)	23.8 (18.9-29.5)
Sex		
Male	27.1 (22.1-32.8)	25.6 (19.9-32.3)
Female	38.8 (34.7-43.1)	36.3 (32.3-40.5)
Race		
White	33.7 (30.2-37.4)	32.9 (29.3-36.7)
Black	38.5 (27.6-50.7)	26.3 (17.0-38.4)
Household income		
< \$20,000	56.6 (48.5-64.4)	48.1 (40.5-55.8)
\$20,000-34,999	40.0 (32.0-48.5)	33.7 (26.4-41.8)
\$35,000-49,999	38.4 (29.4-48.3)	31.6 (22.8-41.8)
\$50,000-74,999	24.1 (18.0-31.4)	26.3 (19.3-34.7)
≥ \$75,000	22.1 (15.9-29.9)	20.8 (15.1-27.9)
Education		
< HS graduate	44.7 (30.3-60.0)	42.9 (29.0-58.0)
HS graduate	41.8 (35.2-48.8)	34.5 (28.1-41.6)
Some college	36.6 (30.6-43.0)	36.1 (30.0-42.7)
College graduate	20.2 (16.1-25.2)	22.3 (17.8-27.5)
^a Replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?” ^b Replied “yes” to at least one of the following questions: “Have you ever been told by a doctor or health professional that you have chronic obstructive pulmonary disease also known as COPD?” “Have you ever been told by a doctor or other health professional that you have emphysema?” “Have you ever been told by a doctor or other health professional that you have chronic bronchitis?” ^c Replied “yes” to the following question, “Have you ever been told by a doctor or other health professional that you are depressed?”		

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

**Table 6. Prevalence of Experiencing Cost Barriers to Asthma Care in Past 12 Months, Among Adults with Current Asthma^a
Michigan Asthma Call-Back Survey, 2005-2007 Combined**

	Cost Barrier to Primary Care Doctor^b	Cost Barrier to Asthma Specialist^c	Cost Barrier to Obtaining Medication^d	Cost Barrier to Primary Care, Specialist, or Medication^e
Total	11.1 (8.9-13.8)	3.7 (2.6-5.2)	14.9 (12.3-17.9)	19.4 (16.5-22.7)
Age in years				
18-34	12.1 (7.6-18.8)	1.3 (0.5-3.3)	18.0 (12.3-25.6)	21.5 (15.2-29.6)
35-64	12.9 (10.3-16.2)	5.7 (3.8-8.3)	14.8 (12.1-18.1)	20.8 (17.5-24.5)
≥ 65	2.1 (1.0-4.5)	2.1 (1.0-4.4)	7.7 (4.9-11.9)	8.9 (5.9-13.3)
Sex				
Male	8.2 (5.0-13.2)	2.4 (1.1-5.1)	12.4 (8.2-18.3)	17.7 (12.7-24.2)
Female	13.0 (10.2-16.3)	4.5 (3.1-6.5)	16.5 (13.5-20.1)	20.4 (17.2-24.2)
Race				
White	9.4 (7.3-12.0)	2.9 (2.0-4.2)	13.4 (10.6-16.7)	17.0 (14.1-20.5)
Black	20.3 (11.5-33.3)	9.1 (4.1-18.9)	20.4 (12.8-31.1)	28.4 (18.4-41.2)
Household income				
< \$20,000	23.3 (17.0-31.0)	6.3 (3.9-10.0)	30.8 (23.9-38.8)	36.6 (29.4-44.6)
\$20,000-34,999	16.6 (11.3-23.7)	6.5 (3.3-12.2)	20.9 (14.9-28.5)	26.3 (19.7-34.3)
\$35,000-49,999	13.6 (7.3-23.8)	3.9 (1.5-9.6)	23.1 (15.1-33.6)	27.1 (18.6-37.5)
\$50,000-74,999	3.1 (1.4-7.1)	1.1 (0.3-4.1)	4.8 (2.3-9.6)	6.0 (3.3-10.9)
≥ \$75,000	1.9 (0.7-5.1)	0.8 (0.1-5.5)	1.7 (0.3-8.2)	3.2 (1.2-8.6)
Education				
< HS graduate	15.6 (7.9-28.3)	8.2 (3.4-18.3)	26.2 (15.9-40.1)	27.5 (16.9-41.4)
HS graduate	9.8 (6.6-14.3)	5.9 (3.3-10.2)	14.5 (9.6-21.1)	20.7 (15.2-27.5)
Some college	16.8 (12.1-22.7)	3.2 (1.9-5.4)	18.3 (13.7-24.0)	24.8 (19.4-31.1)
College graduate	4.0 (2.3-7.0)	1.0 (0.4-2.4)	8.3 (5.6-12.3)	8.9 (6.0-12.9)
^a Respondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?” ^b Responded “yes” to the question, “Was there a time in the past 12 months when you needed to see your primary care doctor for asthma but could not because of the cost?” ^c Responded “yes” to the question, “Was there a time in the past 12 months when you were referred to a specialist for asthma care but could not go because of the cost?” ^d Responded “yes” to the question, “Was there a time in the past 12 months when you needed to buy medication for your asthma but could not because of the cost?” ^e Responded “yes” to at least one of the above 3 questions.				

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

Table 7. Prevalence of Indicators of Knowledge Related to Asthma Management, Among Adults with Current Asthma^a Michigan Asthma Call-Back Survey, 2005-2007 Combined			
	Ever Taught to Recognize Early Signs of Asthma Episode^b	Ever Taught What to Do During Asthma Episode^c	Ever Taught How to Use Peak Flow Meter^d
Total	68.1 (64.5-71.5)	79.1 (75.7-82.0)	45.6 (41.8-49.6)
Age in years			
18-34	76.0 (67.6-82.8)	80.5 (72.1-86.8)	52.3 (43.2-61.2)
35-64	67.9 (63.8-71.7)	82.6 (79.1-85.5)	44.0 (39.8-48.2)
≥ 65	49.2 (42.6-55.8)	62.0 (55.4-68.2)	36.4 (30.1-43.2)
Sex			
Male	66.5 (59.6-72.8)	76.8 (70.0-82.4)	38.9 (32.3-46.0)
Female	69.2 (65.2-72.9)	80.5 (77.0-83.6)	49.9 (45.5-54.3)
Race			
White	67.4 (63.6-71.1)	79.2 (75.7-82.4)	44.2 (40.1-48.3)
Black	75.2 (65.0-83.3)	83.1 (73.9-89.6)	60.4 (47.7-71.8)
Household income			
< \$20,000	64.9 (57.6-71.6)	77.0 (70.2-82.6)	44.7 (37.1-52.5)
\$20,000-34,999	62.8 (54.5-70.4)	76.9 (70.2-82.5)	49.8 (41.0-58.6)
\$35,000-49,999	65.7 (55.8-74.4)	75.5 (65.5-83.3)	47.0 (36.8-57.5)
\$50,000-74,999	76.3 (67.9-83.1)	82.6 (74.4-88.5)	42.5 (33.7-51.8)
≥ \$75,000	75.5 (68.2-81.5)	89.4 (83.7-93.3)	43.9 (35.9-52.2)
Education			
< HS graduate	54.5 (39.1-69.1)	71.5 (56.9-82.6)	36.6 (23.6-51.9)
HS graduate	61.7 (54.3-68.6)	72.8 (65.3-79.2)	45.0 (38.0-52.3)
Some college	73.4 (67.7-78.4)	83.2 (78.3-87.2)	50.7 (43.9-57.5)
College graduate	71.4 (65.3-76.8)	82.0 (76.3-86.6)	42.1 (35.9-48.6)
^a Respondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?” ^b Responded “yes” to the question, “Has a doctor or other health professional ever taught youhow to recognize early signs or symptoms of an asthma episode?” ^c Responded “yes” to the question, “.....what to do during an asthma episode or attack?” ^d Responded “yes” to the question, “.....how to use a peak flow meter to adjust your daily medications?”			

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

Table 7 (continued). Prevalence of Indicators of Knowledge Related to Asthma Management, Among Adults with Current Asthma^a Michigan Asthma Call-Back Survey, 2005-2007 Combined			
	Ever Received Asthma Action Plan^c	Ever Taken Asthma Management Class^f	Received ≥ 3 Types of Asthma Education^g
Total	27.0 (23.7-30.6)	7.9 (6.1-10.0)	44.2 (40.4-48.1)
Age in years			
18-34	29.9 (22.3-38.8)	5.0 (2.3-10.6)	51.3 (42.4-60.2)
35-64	27.8 (24.3-31.7)	9.4 (7.1-12.2)	43.5 (39.4-47.7)
≥ 65	17.6 (13.4-22.9)	9.0 (6.0-13.4)	29.9 (24.2-36.3)
Sex			
Male	21.7 (16.3-28.3)	8.1 (5.0-12.9)	38.5 (31.8-45.6)
Female	30.4 (26.4-34.7)	7.7 (5.9-10.0)	47.9 (43.4-52.3)
Race			
White	25.8 (22.4-29.5)	6.3 (4.8-8.2)	42.1 (38.1-46.1)
Black	33.0 (23.0-44.9)	18.1 (10.1-30.3)	55.7 (43.0-67.7)
Household income			
< \$20,000	24.3 (18.4-31.3)	9.3 (5.6-15.1)	40.3 (33.0-48.0)
\$20,000-34,999	33.5 (25.5-42.7)	7.5 (4.5-12.4)	49.6 (40.8-58.3)
\$35,000-49,999	31.0 (22.0-41.7)	8.8 (5.2-14.6)	41.5 (31.8-51.8)
\$50,000-74,999	26.8 (18.7-36.8)	6.6 (3.6-11.6)	46.1 (36.7-55.8)
≥ \$75,000	27.8 (21.2-35.5)	7.2 (4.2-12.1)	46.2 (38.1-54.4)
Education			
< HS graduate	26.9 (12.5-48.6)	4.4 (1.4-12.9)	39.8 (24.5-57.4)
HS graduate	28.0 (22.2-34.7)	8.8 (5.9-12.8)	42.2 (35.4-49.4)
Some college	28.1 (22.3-34.7)	8.9 (5.6-13.7)	48.0 (41.2-54.8)
College graduate	24.9 (20.1-30.5)	6.5 (4.2-9.9)	42.8 (36.6-49.3)
^a Respondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?” ^c Responded “yes” to the question, “An asthma action plan, or asthma management plan, is a form with instructions about when to change the amount or type of medicine, when to call the doctor for advice, and when to go to the emergency room. Has a doctor or other health professional ever given you an asthma action plan?” ^f Responded “yes” to the question, “Have you ever taken a course or class on how to manage your asthma?” ^g Responded “yes” to ≥ 3 of the 5 questions above (b-f).			

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

**Table 8. Prevalence of Asthma Triggers in Home Environment, Among Adults with Current Asthma^a
Michigan Asthma Call-Back Survey, 2005-2007 Combined**

	Cigarettes Smoked in Home^b	Mold Seen/Smelled in Home^c	Saw Cockroaches in Home^d	Saw Mice/Rats in Home^e
Total	22.4 (19.3-25.9)	14.5 (12.1-17.2)	1.2 (0.7-1.9)	6.7 (4.9-9.0)
Age in years				
18-34	24.4 (17.5-33.0)	14.8 (9.8-21.7)	0.0	7.5 (3.7-14.5)
35-64	24.7 (21.3-28.5)	14.9 (12.2-18.0)	1.7 (1.0-2.8)	6.8 (5.0-9.2)
≥ 65	9.3 (5.9-14.4)	12.4 (8.6-17.7)	2.2 (0.9-5.4)	4.3 (2.5-7.5)
Sex				
Male	24.7 (19.0-31.5)	14.8 (10.7-20.1)	1.1 (0.4-2.6)	7.9 (4.4-13.7)
Female	21.0 (17.6-24.8)	14.3 (11.6-17.5)	1.2 (0.7-2.1)	5.9 (4.3-8.0)
Race				
White	21.0 (17.8-24.7)	15.9 (13.2-19.1)	0.7 (0.3-1.4)	6.5 (4.6-9.2)
Black	31.8 (21.1-44.9)	11.3 (6.2-19.8)	4.8 (2.5-9.0)	10.6 (5.0-21.4)
Household income				
< \$20,000	40.8 (33.4-48.7)	23.2 (16.9-30.9)	3.5 (1.9-6.4)	7.1 (4.5-11.1)
\$20,000-34,999	23.9 (17.4-31.8)	14.0 (9.1-20.9)	1.1 (0.3-3.7)	7.0 (4.0-12.0)
\$35,000-49,999	26.0 (17.7-36.5)	19.6 (11.7-31.1)	1.7 (0.5-6.1)	8.2 (4.6-14.1)
\$50,000-74,999	19.2 (12.4-28.5)	13.0 (8.6-19.4)	0.5 (0.1-2.5)	3.8 (1.7-8.1)
≥ \$75,000	10.2 (5.2-19.1)	10.7 (7.0-16.0)	0.0	5.4 (2.6-10.8)
Education				
< HS graduate	33.6 (21.4-48.6)	7.6 (3.3-16.5)	2.7 (1.0-6.7)	9.9 (4.2-21.4)
HS graduate	29.2 (23.0-36.3)	12.8 (9.0-17.8)	1.0 (0.5-2.2)	9.0 (5.1-15.2)
Some college	23.8 (18.6-30.0)	16.8 (12.4-22.4)	0.7 (0.2-1.9)	5.0 (2.8-8.9)
College graduate	10.9 (7.0-16.6)	15.0 (11.0-20.0)	1.7 (0.7-3.8)	5.5 (3.1-9.5)

^aRespondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?”

^bResponded “yes” to the question, “In the past week, has anyone smoked inside your home?”

^cResponded “yes” to the question, “In the past 30 days, has anyone seen or smelled mold or a musty odor inside your home?”

^dResponded “yes” to the question, “In the past 30 days, has anyone seen a cockroach inside your home?”

^eResponded “yes” to the question, “In the past 30 days, has anyone seen mice or rats inside your home? Do not include mice or rats kept as pets.”

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

**Table 8 (continued). Prevalence of Asthma Triggers in Home Environment, Among Adults with Current Asthma^a
Michigan Asthma Call-Back Survey, 2005-2007 Combined**

	Inside Pets^f	Pets Allowed in Bedroom^g	Wood Burning Stove/Fireplace Used^h	Unvented Gas Logs, Stoves, or Fireplaces Usedⁱ	Gas Used for Cooking^j
Total	62.4 (58.7-66.0)	45.3 (41.5-49.1)	18.4 (15.5-21.7)	13.3 (10.8-16.2)	51.1 (47.3-55.0)
Age in years					
18-34	68.3 (59.3-76.0)	49.4 (40.4-58.3)	17.9 (11.8-26.4)	14.2 (9.2-21.3)	49.2 (40.2-58.3)
35-64	66.0 (61.9-69.8)	48.4 (44.2-52.6)	18.9 (15.8-22.4)	13.8 (10.9-17.2)	55.3 (51.1-59.4)
≥ 65	35.6 (29.6-42.0)	24.3 (19.2-30.3)	16.5 (11.8-22.5)	9.3 (5.9-14.4)	40.9 (34.6-47.6)
Sex					
Male	60.3 (53.3-66.8)	41.2 (34.4-48.4)	20.8 (15.3-27.7)	18.1 (13.3-24.1)	56.4 (49.2-63.2)
Female	63.8 (59.4-67.9)	47.8 (43.4-52.3)	16.8 (13.9-20.2)	10.2 (7.9-13.2)	47.8 (43.4-52.3)
Race					
White	68.3 (64.7-71.6)	49.1 (45.0-53.2)	18.9 (15.8-22.4)	13.3 (10.7-16.3)	49.6 (45.5-53.7)
Black	22.8 (13.9-35.2)	18.4 (10.1-31.1)	16.6 (9.0-28.4)	12.6 (5.6-25.9)	57.1 (43.7-69.6)
Household income					
< \$20,000	55.9 (48.3-63.2)	41.4 (33.8-49.3)	8.5 (5.4-13.1)	12.3 (7.6-19.1)	54.4 (46.7-62.0)
\$20,000-34,999	56.2 (47.2-64.8)	40.3 (32.1-49.0)	15.4 (10.0-23.0)	10.3 (6.2-16.7)	51.5 (42.7-60.2)
\$35,000-49,999	61.4 (51.4-70.6)	44.9 (34.7-55.5)	18.9 (11.9-28.5)	11.9 (7.0-19.4)	46.3 (36.5-56.5)
\$50,000-74,999	67.4 (57.2-76.3)	50.2 (40.7-59.7)	18.1 (12.3-25.8)	17.5 (10.9-26.9)	53.5 (44.0-62.7)
≥ \$75,000	69.2 (61.2-76.2)	49.6 (41.4-57.9)	24.7 (18.1-32.9)	15.4 (10.7-21.7)	46.5 (38.4-54.8)
Education					
< HS graduate	46.6 (31.9-62.0)	34.9 (22.3-50.2)	6.3 (2.7-14.1)	14.4 (7.4-26.3)	73.3 (60.3-83.2)
HS graduate	61.9 (55.1-68.3)	42.4 (35.4-49.7)	21.8 (15.7-29.5)	12.1 (8.3-17.3)	55.3 (47.9-62.4)
Some college	64.0 (57.3-70.2)	46.0 (39.4-52.9)	16.1 (11.8-21.4)	12.1 (8.1-17.8)	49.9 (43.1-56.7)
College graduate	64.8 (58.5-70.7)	49.9 (43.4-56.3)	20.0 (15.4-25.6)	15.8 (11.4-21.5)	43.5 (37.2-50.0)

^aRespondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?”

^fResponded “yes” to the question, “Does your household have pets, such as dogs, cats, hamsters, birds, or other feathered or furry pets that spend time indoors?”

^gResponded “yes” to the question, “Are pets allowed in your bedroom?” (Among all respondents.)

^hResponded “yes” to the question, “Is a wood burning fireplace or wood burning stove used in your home?”

ⁱResponded “yes” to the question, “Are unvented gas logs, unvented gas fireplaces, or unvented gas stoves used in your home?”

^jResponded “yes” to the question, “Is gas used for cooking?”

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

**Table 9. Prevalence of Asthma Trigger Avoidance Behaviors in Home Environment, Among Adults with Current Asthma^a
Michigan Asthma Call-Back Survey, 2005-2007 Combined**

	Kitchen Fan Used When Cooking^b	Bathroom Exhaust Fan Used^c	Sheets Washed in Hot Water^d	Air Cleaner Used in Home^e
Total	50.6 (46.8-54.5)	54.7 (50.8-58.5)	37.2 (33.7-40.9)	37.2 (33.5-41.0)
Age in years				
18-34	48.3 (39.3-57.4)	52.1 (43.1-61.0)	28.0 (20.9-36.4)	32.9 (24.9-42.1)
35-64	51.3 (47.1-55.5)	56.3 (52.1-60.5)	42.4 (38.3-46.6)	37.6 (33.6-41.7)
≥ 65	53.1 (46.6-59.6)	54.3 (47.8-60.7)	40.1 (33.8-46.6)	45.4 (39.0-52.0)
Sex				
Male	50.4 (43.3-57.5)	54.1 (47.0-61.1)	31.5 (25.4-38.3)	34.8 (28.3-41.9)
Female	50.8 (46.4-55.2)	55.0 (50.5-59.4)	40.5 (36.4-44.8)	38.7 (34.6-43.1)
Race				
White	49.0 (44.9-53.1)	59.3 (55.2-63.2)	38.4 (34.6-42.3)	37.2 (33.4-41.2)
Black	50.5 (37.9-63.2)	19.3 (12.5-28.5)	35.9 (25.1-48.4)	32.6 (22.5-44.6)
Household income				
< \$20,000	53.0 (45.2-60.7)	44.9 (37.4-52.6)	35.4 (28.4-43.1)	27.5 (21.2-34.8)
\$20,000-34,999	47.0 (38.5-55.7)	51.0 (42.2-59.8)	40.1 (32.2-48.6)	36.8 (28.8-45.7)
\$35,000-49,999	46.4 (36.4-56.8)	63.8 (53.5-72.9)	36.7 (27.7-46.8)	36.2 (27.3-46.1)
\$50,000-74,999	51.7 (42.2-61.1)	57.0 (47.3-66.2)	38.9 (30.5-48.0)	43.2 (33.9-53.0)
≥ \$75,000	55.0 (46.7-63.1)	61.9 (53.6-69.5)	40.0 (32.1-48.4)	40.0 (32.3-48.2)
Education				
< HS graduate	58.9 (43.7-72.5)	47.8 (32.4-63.6)	24.7 (15.4-37.0)	41.2 (26.0-58.4)
HS graduate	53.5 (46.2-60.6)	55.5 (48.3-62.5)	32.7 (26.7-39.2)	35.7 (29.0-43.0)
Some college	47.0 (40.3-53.7)	53.1 (46.2-59.8)	42.7 (36.2-49.5)	38.2 (31.9-45.0)
College graduate	50.2 (43.7-56.7)	57.3 (50.7-63.7)	38.0 (32.0-44.5)	36.3 (30.6-42.4)

^aRespondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?”

^bResponded “yes” to the question, “Is an exhaust fan that vents to the outside used regularly when cooking in your kitchen?”

^cResponded “yes” to the question, “In your bathroom, do you regularly use an exhaust fan that vents to the outside?”

^dResponded “hot” to the question, “Are your sheets and pillowcases washed in cold, warm, or hot water?”

^eResponded “yes” to the question, “An air cleaner or air purifier can filter out pollutants like dust, pollen, mold and chemicals. It can be attached to the furnace or free standing. It is not, however, the same as a normal furnace filter. Is an air cleaner or purifier regularly used inside your home?”

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

Table 9 (continued). Prevalence of Asthma Trigger Avoidance Behaviors in Home Environment, Among Adults with Current Asthma^a Michigan Asthma Call-Back Survey, 2005-2007 Combined				
	Dehumidifier Used Regularly in Home^f	No Carpeting in Bedroom^g	Uses Mattress Cover^h	Uses Pillow Coverⁱ
Total	41.9 (38.1-45.7)	30.8 (27.1-34.7)	27.9 (24.7-31.4)	28.6 (25.3-32.2)
Age in years				
18-34	35.8 (27.5-45.1)	35.1 (26.8-44.5)	23.6 (17.1-31.6)	25.8 (18.7-34.4)
35-64	44.1 (39.9-48.4)	29.7 (25.8-33.8)	29.8 (26.1-33.8)	30.0 (26.2-34.0)
≥ 65	47.1 (40.7-53.6)	24.9 (19.5-31.2)	31.5 (25.6-38.0)	30.7 (25.0-36.9)
Sex				
Male	45.8 (38.8-53.0)	33.9 (27.1-41.4)	23.2 (17.9-29.5)	19.4 (14.6-25.4)
Female	39.3 (35.2-43.6)	28.9 (24.9-33.2)	30.8 (26.9-34.9)	34.4 (30.2-38.8)
Race				
White	43.8 (39.8-47.9)	28.3 (24.6-32.4)	28.8 (25.2-32.6)	28.9 (25.4-32.7)
Black	27.7 (18.8-38.7)	41.9 (29.8-55.2)	24.1 (15.9-34.8)	28.7 (18.0-42.5)
Household income				
< \$20,000	24.1 (18.7-30.5)	28.1 (21.1-36.4)	22.7 (17.2-29.4)	27.6 (21.1-35.3)
\$20,000-34,999	33.8 (26.1-42.6)	32.4 (24.8-41.1)	28.3 (21.2-36.7)	32.0 (23.5-41.9)
\$35,000-49,999	43.6 (33.6-54.2)	35.5 (25.6-46.9)	26.8 (18.8-36.8)	25.4 (17.7-35.0)
\$50,000-74,999	45.9 (36.5-55.7)	28.5 (20.3-38.3)	28.6 (21.2-37.3)	20.7 (15.0-27.9)
≥ \$75,000	55.1 (46.7-63.2)	31.8 (24.1-40.6)	33.0 (25.8-41.0)	32.8 (25.6-40.9)
Education				
< HS graduate	36.3 (21.3-54.5)	27.0 (16.2-41.6)	16.7 (8.9-29.2)	17.0 (9.6-28.3)
HS graduate	42.0 (34.8-49.6)	32.8 (25.7-40.7)	24.4 (19.0-30.8)	24.8 (19.4-31.2)
Some college	35.2 (29.3-41.6)	29.8 (23.7-36.7)	29.7 (24.0-36.0)	33.9 (27.6-40.8)
College graduate	51.1 (44.7-57.6)	31.0 (25.0-37.7)	32.0 (26.3-38.3)	28.7 (23.2-34.8)
^a Respondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?” ^f Responded “yes” to the question, “Is a dehumidifier regularly used to reduce moisture inside your home?” ^g Responded “no” to the question, “Do you have carpeting or rugs in your bedroom? This does not include throw rugs small enough to be laundered.” ^h Responded “yes” to the question, “Do you use a mattress cover that is made especially for controlling dust mites?” ⁱ Responded “yes” to the question, “Do you use a pillow cover that is made especially for controlling dust mites?”				

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

Table 10. Prevalence of Ever Being Advised to Modify Environment to Improve Asthma, Among Adults with Current Asthma^a Michigan Asthma Call-Back Survey, 2005-2007 Combined	
	Ever Advised to Modify Environment to Improve Asthma^b
Total	45.4 (41.6-49.3)
Age in years	
18-34	43.2 (34.6-52.2)
35-64	50.4 (46.2-54.7)
≥ 65	32.0 (26.3-38.3)
Sex	
Male	38.0 (31.4-45.1)
Female	50.0 (45.6-54.5)
Race	
White	45.7 (41.7-49.8)
Black	41.3 (29.9-53.8)
Household income	
< \$20,000	45.6 (38.0-53.4)
\$20,000-34,999	40.9 (32.6-49.8)
\$35,000-49,999	41.4 (31.9-51.7)
\$50,000-74,999	55.5 (45.9-64.8)
≥ \$75,000	45.8 (37.8-54.0)
Education	
< HS graduate	46.6 (31.1-62.9)
HS graduate	35.1 (29.1-41.7)
Some college	48.5 (41.8-55.4)
College graduate	52.3 (45.8-58.7)
^a Respondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?” ^b Responded “yes” to the question, “Has a health professional ever advised you to change things in your home, school, or work to improve your asthma?”	

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

Table 11. Percent Distribution of Number Days Unable to Work or Carry Out Usual Activities Because of Asthma,^a Among Adults with Current Asthma^b			
Michigan Asthma Call-Back Survey, 2005-2007 Combined			
	None	1-5 Days	≥6 Days
Total	65.4 (61.5-69.1)	20.0 (16.8-23.7)	14.6 (12.2-17.2)
Age in years			
18-34	61.7 (52.5-70.1)	27.7 (20.1-36.8)	10.6 (6.6-16.5)
35-64	65.9 (61.8-69.8)	16.9 (14.0-20.2)	17.2 (14.3-20.7)
≥ 65	73.0 (66.3-78.7)	12.8 (8.8-18.3)	14.2 (10.0-19.9)
Sex			
Male	73.9 (67.3-79.6)	14.2 (9.9-20.0)	11.9 (8.3-16.9)
Female	60.0 (55.3-64.4)	23.8 (19.6-28.6)	16.2 (13.5-19.4)
Race			
White	69.1 (65.2-72.7)	18.8 (15.6-22.5)	12.1 (10.0-14.5)
Black	47.8 (35.0-60.9)	25.4 (14.8-40.1)	26.7 (16.8-39.7)
Household income			
< \$20,000	46.8 (38.9-54.8)	23.7 (16.5-32.8)	29.6 (23.2-36.9)
\$20,000-34,999	55.6 (46.2-64.7)	27.6 (18.8-38.6)	16.7 (11.4-23.8)
\$35,000-49,999	68.5 (57.5-77.7)	21.6 (13.4-32.9)	10.0 (5.7-17.0)
\$50,000-74,999	76.5 (69.0-82.6)	13.5 (9.0-19.7)	10.0 (6.4-15.3)
≥ \$75,000	75.2 (67.3-81.7)	16.8 (11.2-24.4)	8.0 (4.8-13.0)
Education			
< HS graduate	64.5 (49.5-77.1)	7.1 (3.0-15.7)	28.4 (17.5-42.8)
HS graduate	66.6 (59.3-73.1)	16.8 (11.7-23.4)	16.7 (12.4-22.0)
Some college	58.2 (51.0-65.1)	25.9 (19.5-33.4)	15.9 (11.8-21.0)
College graduate	73.3 (67.6-78.4)	19.0 (14.7-24.2)	7.7 (5.0-11.5)
^a Response to the following question, “During the past 12 months, how many days were you unable to work or carry out your usual activities because of your asthma?”			
^b Respondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?”			

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*

*Michigan Asthma Call-Back Survey, 2005-2007 (combined)
Adult Estimates*

**Table 12. Prevalence of Work-Related Asthma Using 3 Definitions, Among Adults with Current Asthma^a
Michigan Asthma Call-Back Survey, 2005-2007 Combined**

	Asthma Caused or Aggravated by Current or Previous Job^b	Ever Told or Told By Doctor That Asthma Was Work-Related^c	Any Indication of Work-Related Asthma^d
Total	51.6 (47.6-55.6)	15.4 (12.8-18.4)	52.9 (48.9-56.9)
Age in years			
18-34	46.6 (37.8-55.7)	11.4 (6.6-19.1)	47.8 (38.9-56.9)
35-64	55.7 (51.5-60.0)	18.2 (15.2-21.6)	56.9 (52.6-61.0)
≥ 65	47.8 (41.1-54.7)	13.7 (9.8-18.7)	50.0 (43.2-56.8)
Sex			
Male	52.0 (44.6-59.4)	15.2 (11.0-20.6)	53.7 (46.2-61.0)
Female	51.4 (46.9-55.9)	15.5 (12.5-19.1)	52.5 (48.0-56.9)
Race			
White	49.6 (45.5-53.8)	13.5 (11.2-16.1)	51.2 (47.1-55.4)
Black	60.8 (47.7-72.4)	26.4 (15.5-41.4)	60.8 (47.7-72.4)
Household income			
< \$20,000	58.5 (50.6-66.1)	19.0 (14.2-25.0)	60.0 (52.1-67.4)
\$20,000-34,999	55.3 (46.3-64.1)	23.2 (15.9-32.6)	56.0 (47.0-64.7)
\$35,000-49,999	57.6 (47.0-67.6)	15.4 (9.1-24.9)	58.4 (47.7-68.4)
\$50,000-74,999	44.6 (35.4-54.2)	12.8 (8.4-19.1)	47.9 (38.3-57.6)
≥ \$75,000	43.0 (34.9-51.6)	7.6 (4.7-12.1)	43.9 (35.7-52.4)
Education			
< HS graduate	45.1 (30.4-60.6)	17.0 (9.3-29.0)	45.1 (30.4-60.6)
HS graduate	54.6 (47.0-61.9)	14.9 (11.1-19.8)	55.7 (48.1-63.0)
Some college	58.9 (51.9-65.5)	16.9 (12.0-23.2)	59.9 (52.9-66.4)
College graduate	40.7 (34.6-47.0)	13.2 (9.7-17.9)	42.8 (36.6-49.3)
^a Respondent replied “yes” to both of the following questions: “Have you ever been told by a doctor, nurse, or other health professional that you had asthma?” and “Do you still have asthma?” ^b Responded “yes” to one or more of the following 4 questions: “Was your asthma caused by chemicals, smoke, fumes, or dust in your current job?” “Is your asthma made worse by chemicals, smoke, fumes, or dust in your current job?” “Was your asthma caused by chemicals, smoke, fumes, or dust in any previous job you ever had?” “Was your asthma made worse by chemicals, smoke, fumes, or dust in any previous job you ever had?” ^c Responded “yes” to one or more of the following 2 questions: “Were you ever told by a doctor or other health professional that your asthma was related to any job you ever had?” “Did you ever tell a doctor or other health professional that your asthma was related to any job you ever had?” ^d Responded “yes” to at least one of the above 6 questions (b and c).			

*If you have any questions about these estimates, please contact Betsy Wasilevich, MDCH
517-335-8164 or wasileviche@michigan.gov*