

**Prevalence of Asthma-Related Health Conditions Among Michigan Children with Current Asthma
Estimates from the Michigan Asthma Call-Back Survey
2005-2009 Combined**

Standard Tables

*Prepared by: Ann Rafferty
August 2011*

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 Any Asthma Control Medication Use in Past 3 Months7
Table 5: Prevalence of Experiencing Cost Barriers to Asthma Care in Past 12 Months.....8
Table 6: Prevalence of Knowledge Indicators Related to Asthma Management9
Table 7: Prevalence of Asthma Triggers in Home Environment.....11
Table 8: Prevalence of Asthma Trigger Avoidance Behaviors in Home Environment.....13
Table 9: Prevalence of Ever Being Advised to Modify Child’s Environment to Improve Asthma15
Table 10: Percent Distribution of Number of School Days Missed Due to Asthma16
Table 11: Prevalence of School-Related Asthma Indicators17

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 (CDC), the Office for Survey Research 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 children aged less than 18 years from the 2005-2009 Michigan Asthma Call-Back Surveys combined. The total 5-year sample size of completed child interviews was 747, with 213 from 2005, 89 from 2006, 129 from 2007, 185 from 2008, and 131 from 2009. Estimates were weighted to adjust for the probabilities of selection and a post-stratification weighting factor that adjusted for the distribution of Michigan children 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 children with current asthma (n=545). Current asthma was defined as a “yes” response to both of the following questions: “Have you ever been told by a doctor or other health professional that {child’s name} has asthma?” and “Does {child’s name} still have asthma?”

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 1. Prevalence of Asthma Symptoms, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined				
	n^a	Had Asthma Symptoms on ≥ 9 Days in Past Month^b	Difficulty Sleeping Due to Asthma Symptoms on ≥ 2 Days in Past Month^c	Usual Activities Limited at Least a Little During Past 12 Months^d
Total	545	18.1 (14.4-22.5)	19.1 (15.2-23.8)	60.6 (54.9-66.1)
Age				
0-4 years	83	26.9 (15.5-42.6)	35.6 (22.0-52.0)	60.6 (41.3-77.1)
5-17 years	452	16.4 (12.7-20.9)	16.1 (12.3-20.9)	60.8 (55.0-66.3)
Sex				
Male	307	19.9 (15.1-25.9)	20.7 (15.3-27.3)	64.3 (57.0-71.0)
Female	238	15.9 (10.6-23.0)	17.2 (12.0-24.1)	56.1 (47.1-64.6)
Race				
White	393	18.9 (14.5-24.2)	18.0 (13.7-23.3)	61.6 (55.5-67.4)
Black	105	13.2 (7.2-22.9)	22.0 (13.0-34.9)	56.2 (42.4-69.1)
Household income				
< \$20,000	83	19.9 (11.6-31.8)	19.6 (11.5-31.3)	55.9 (42.7-68.4)
\$20,000-49,999	147	17.4 (11.3-25.8)	26.8 (18.3-37.4)	65.4 (55.6-74.0)
≥ \$50,000	272	18.3 (13.3-24.7)	16.8 (11.7-23.3)	61.3 (53.7-68.3)
Education of BRFS respondent				
≤ HS graduate	149	17.7 (11.0-27.3)	16.5 (9.8-26.5)	61.7 (48.2-73.7)
Some college	174	19.5 (13.6-27.0)	20.6 (14.4-28.5)	60.0 (50.5-68.8)
College graduate	222	17.3 (11.7-24.8)	19.7 (13.6-27.6)	60.4 (52.3-68.0)
^a Sample sizes (unweighted) for demographic subpopulations. Cell sample sizes for prevalence estimates will vary because of missing values. ^b Reported ≥ 9 days to the following question, "During the past 30 days, on how many days did {child's name} have any symptoms of asthma?" ^c Reported ≥ 2 days to the following question, "During the past 30 days, on how many days did symptoms of asthma make it difficult for {child's name} to stay asleep?" ^d Reported "a little," "a moderate amount," or "a lot" to the following question, "During the past 12 months, would you say {child's name} limited {his/her} usual activities due to asthma not at all, a little, a moderate amount, or a lot?"				

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 2. Percent Distribution of Number of Asthma Symptom-Free Days^a in Past 2 Weeks, Among Children Aged 0-17 Years with Current Asthma				
Michigan Asthma Call-Back Survey, 2005-2009 Combined				
	None	1-6 Days	7-13 Days	14 Days
Total	8.7 (6.0-12.4)	12.0 (8.8-16.2)	22.3 (18.2-27.0)	57.0 (51.3-62.6)
Age				
0-4 years	12.8 (5.0-29.0)	8.3 (4.1-16.0)	29.8 (17.6-45.8)	49.2 (32.2-66.3)
5-17 years	7.8 (5.2-11.5)	12.9 (9.2-17.7)	20.7 (16.5-25.6)	58.7 (52.7-64.5)
Sex				
Male	6.8 (4.2-10.9)	13.9 (9.6-19.7)	22.5 (17.0-29.2)	56.9 (49.3-64.2)
Female	11.1 (6.5-18.3)	9.7 (5.6-16.3)	22.0 (16.3-28.9)	57.2 (48.5-65.6)
Race				
White	8.5 (5.3-13.4)	12.8 (9.1-17.8)	21.2 (16.8-26.3)	57.5 (51.1-63.6)
Black	7.7 (3.8-14.9)	12.3 (5.5-25.2)	19.7 (11.2-32.4)	60.4 (46.3-72.9)
Household income				
< \$20,000	7.1 (2.9-16.1)	10.3 (4.7-21.2)	28.2 (18.1-41.2)	54.4 (41.0-67.1)
\$20,000-49,999	11.7 (6.6-19.8)	11.9 (6.8-20.0)	24.3 (16.7-34.1)	52.1 (42.1-61.9)
≥ \$50,000	8.9 (5.1-15.1)	12.8 (8.3-19.2)	21.0 (15.5-27.8)	57.3 (49.4-64.9)
Education of BRFS respondent				
≤ HS graduate	8.2 (4.0-15.9)	12.7 (6.7-22.6)	18.9 (12.3-28.0)	60.2 (48.0-71.3)
Some college	10.5 (6.5-16.4)	12.2 (7.3-19.8)	22.8 (15.9-31.6)	54.5 (44.8-63.8)
College graduate	7.5 (3.5-15.5)	11.4 (7.0-18.0)	24.1 (17.7-31.9)	56.9 (48.4-65.0)

^aResponse to the following question, “During the past two weeks, on how many days was {child’s name} completely symptom-free, that is no coughing, wheezing, or other symptoms of asthma?”

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 3. Prevalence of Asthma-Related Health Care Utilization, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined					
	ER/Urgent Care Visits for Asthma^a		≥ 1 Hospital Stays for Asthma in Past 12 Months^b	≥ 2 Routine Asthma Care Visits in Past 12 Months^c	Received Flu Vaccine in Past 12 Months^d
	≥ 1 Visit	≥ 2 Visits			
Total	17.5 (13.4-22.4)	8.5 (5.5-12.9)	3.8 (2.4-5.9)	43.1 (37.4-49.0)	40.8 (35.4-46.5)
Age					
0-4 years	33.8 (21.1-49.4)	19.7 (11.5-31.7)	12.2 (6.6-21.6)	54.0 (35.8-71.1)	50.1 (33.0-67.1)
5-17 years	14.1 (10.0-19.5)	6.2 (3.2-11.7)	2.0 (0.9-4.4)	41.0 (35.0-47.3)	39.2 (33.5-45.3)
Sex					
Male	18.9 (13.1-26.5)	10.9 (6.2-18.5)	3.3 (1.9-5.9)	50.1 (42.4-57.9)	42.1 (34.7-49.8)
Female	15.6 (10.9-21.7)	5.4 (3.2-9.0)	4.3 (2.1-8.7)	34.3 (26.9-42.5)	39.3 (31.3-47.9)
Race					
White	14.4 (10.9-18.8)	5.9 (3.8-8.9)	4.0 (2.2-7.1)	40.9 (34.7-47.4)	42.5 (36.3-49.0)
Black	27.0 (14.8-43.9)	19.4 (8.5-38.3)	4.3 (1.9-9.4)	55.0 (41.2-68.1)	34.5 (23.2-47.7)
Household income					
< \$20,000	20.5 (12.1-32.7)	7.8 (3.9-15.3)	1.8 (0.5-5.9)	51.9 (38.3-65.2)	29.2 (18.9-42.3)
\$20,000-49,999	24.0 (16.3-33.8)	12.0 (7.2-19.3)	5.3 (2.6-10.6)	42.2 (32.5-52.5)	35.5 (26.9-45.1)
≥ \$50,000	14.7 (9.2-22.7)	7.8 (3.5-16.7)	4.3 (2.2-8.1)	41.2 (33.5-49.2)	45.1 (37.6-52.9)
Education of BRFS respondent					
≤ HS graduate	12.5 (7.5-20.1)	5.5 (2.7-10.8)	0.9 (0.3-2.7)	41.2 (29.5-54.0)	39.0 (27.3-52.1)
Some college	27.5 (18.5-38.8)	14.2 (7.1-26.5)	6.2 (3.1-12.2)	51.7 (41.9-61.4)	31.1 (23.4-39.9)
College graduate	12.6 (8.7-17.9)	5.8 (3.3-10.0)	3.7 (1.9-7.0)	37.4 (30.0-45.5)	50.0 (41.9-58.1)
^a Response to the question, "During the past 12 months, how many times did {child's name} visit an emergency room or urgent care center because of {his/her} asthma?" ^b Responded one or more times to the question, "During the past 12 months, how many different times did {he/she} stay in any hospital overnight or longer because of {his/her} asthma?" ^c Reported ≥ 2 times to the question, "During the past 12 months, how many times did {child's name} see a doctor or other health professional for a routine checkup for {his/her} asthma?" ^d Responded "yes" to either of the following questions, "A flu shot is an influenza vaccine injected in your arm. During the past 12 months, did {child's name} have a flu shot?" or "A flu vaccine that is sprayed in the nose is called FluMist. During the past 12 months, did {child's name} have a flu vaccine that was sprayed in {his/her} nose?" ^e No positive responses in this cell.					

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 4. Prevalence of Any Asthma Control Medication Use in Past 3 Months, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined	
	Used \geq 1 Asthma Control Medication in Past 3 Months,^a % (95% confidence interval)
Total	46.1 (40.5-51.9)
Age	
0-4 years	54.0 (36.3-70.7)
5-17 years	45.0 (39.1-51.0)
Sex	
Male	48.5 (40.8-56.2)
Female	43.2 (35.0-51.8)
Race	
White	50.3 (43.9-56.6)
Black	32.3 (21.3-45.7)
Household income	
< \$20,000	31.2 (20.1-45.0)
\$20,000-49,999	46.3 (36.5-56.4)
\geq \$50,000	53.9 (46.0-61.6)
Education of BRFS respondent	
\leq HS graduate	33.9 (23.8-45.7)
Some college	47.6 (38.1-57.2)
College graduate	53.5 (45.3-61.4)
^a Respondent reported they had taken at least one asthma control medication in the past 3 months, as defined by the CDC national Asthma Call-Back Survey Analysis Workgroup on Medications.	

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 5. Prevalence of Experiencing Cost Barriers to Asthma Care in Past 12 Months, Among Children Aged 0-17 Years with Current Asthma				
Michigan Asthma Call-Back Survey, 2005-2009 Combined				
	Cost Barrier to Primary Care Doctor^a	Cost Barrier to Asthma Specialist^b	Cost Barrier to Obtaining Medication^c	Cost Barrier to Primary Care, Specialist, or Medication^d
Total	3.8 (2.4-6.1)	1.6 (0.8-3.1)	6.7 (4.3-10.2)	9.4 (6.7-13.1)
Age				
0-4 years	4.7 (1.4-14.5)	1.4 (0.3-5.9)	3.4 (1.3-8.7)	7.8 (3.4-17.0)
5-17 years	3.7 (2.2-6.1)	1.5 (0.7-3.4)	7.2 (4.5-11.3)	9.6 (6.6-13.8)
Sex				
Male	4.4 (2.4-7.9)	2.4 (1.1-5.2)	7.6 (4.3-13.0)	10.9 (7.0-16.4)
Female	3.1 (1.4-6.7)	0.6 (0.2-1.8)	5.6 (2.8-10.6)	7.6 (4.4-12.8)
Race				
White	1.9 (0.9-4.3)	1.2 (0.4-3.6)	5.4 (3.2-9.2)	6.8 (4.3-10.6)
Black	9.0 (4.6-16.9)	3.4 (1.4-8.1)	12.7 (5.6-26.1)	17.9 (9.7-30.6)
Household income				
< \$20,000	7.8 (3.1-18.1)	5.8 (2.0-15.8)	14.4 (7.1-27.0)	17.2 (9.2-29.9)
\$20,000-49,999	4.9 (2.0-11.4)	1.4 (0.4-4.9)	7.1 (3.5-13.8)	11.2 (6.4-19.0)
≥ \$50,000	1.9 (0.9-4.1)	0.6 (0.2-2.1)	4.5 (1.9-10.3)	6.8 (3.7-12.2)
Education of BRFS respondent				
≤ HS graduate	3.4 (1.3-8.8)	2.3 (0.6-8.4)	8.9 (4.3-17.4)	10.5 (5.6-18.9)
Some college	2.2 (0.6-7.5)	0.9 (0.3-2.8)	8.2 (4.5-14.5)	9.3 (5.3-15.7)
College graduate	5.4 (3.0-9.4)	1.7 (0.7-4.0)	4.0 (1.4-11.0)	8.8 (5.0-15.2)
^a Responded “yes” to the question, “Was there a time in the past 12 months when {child’s name} needed to see {his/her} primary care doctor for asthma but could not because of the cost?”				
^b Responded “yes” to the question, “Was there a time in the past 12 months when you were referred to a specialist for {his/her} asthma care but could not go because of the cost?”				
^c Responded “yes” to the question, “Was there a time in the past 12 months when {he/she} needed medication for {his/her} asthma but you could not buy it because of the cost?”				
^d Responded “yes” to at least one of the above 3 questions.				
^e No positive responses in this cell.				

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 6. Prevalence of Knowledge Indicators Related to Asthma Management, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined			
	Ever Taught to Recognize Early Signs of Asthma Episode^a	Ever Taught What To Do During Asthma Episode^b	Ever Taught How to Use a Peak Flow Meter^c
Total	85.5 (81.6-88.8)	88.5 (84.1-91.8)	41.4 (35.6-47.3)
Age			
0-4 years	88.7 (78.6-94.4)	91.5 (81.9-96.3)	28.3 (12.7-51.8)
5-17 years	85.5 (80.5-88.6)	88.0 (82.9-91.8)	43.6 (37.7-49.7)
Sex			
Male	84.7 (78.8-89.2)	89.6 (82.2-94.2)	40.4 (33.0-48.2)
Female	86.6 (81.1-90.7)	87.1 (81.7-91.1)	42.6 (34.0-51.6)
Race			
White	85.9 (81.3-89.5)	87.9 (81.8-92.1)	38.6 (32.5-45.0)
Black	82.5 (70.1-90.5)	88.5 (79.5-93.8)	47.4 (33.6-61.6)
Household income			
< \$20,000	81.7 (70.5-89.3)	83.8 (72.4-91.0)	51.1 (37.4-64.7)
\$20,000-49,999	80.7 (72.7-86.7)	87.2 (80.4-91.8)	42.1 (32.5-52.3)
≥ \$50,000	88.4 (82.2-92.6)	93.9 (89.9-96.3)	35.3 (28.5-42.8)
Education of BRFS respondent			
≤ HS graduate	86.7 (77.9-92.4)	84.1 (70.2-92.2)	47.2 (34.3-60.6)
Some college	85.1 (78.6-89.9)	88.9 (83.2-92.9)	42.7 (33.6-52.4)
College graduate	85.1 (78.0-90.2)	91.3 (85.9-94.7)	36.3 (28.9-44.4)
^a Responded “yes” to the question, “Has a doctor or other health professional ever taught you or {child’s name)how to recognize early signs or symptoms of an asthma episode?” ^b Responded “yes” to the question, “.....what to do during an asthma episode or attack?” ^c Responded “yes” to the question, “.....how to use a peak flow meter to adjust {his/her} daily medications?”			

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 6 (continued). Prevalence of Knowledge Indicators Related to Asthma Management, Among Children Aged 0-17 Years with Current Asthma			
Michigan Asthma Call-Back Survey, 2005-2009 Combined			
	Ever Received Asthma Action Plan^d	Ever Taken Asthma Management Class^e	Received ≥ 3 Types of Asthma Education^f
Total	42.1 (36.7-47.6)	9.5 (7.0-12.7)	52.1 (46.3-57.9)
Age			
0-4 years	42.4 (28.9-57.1)	4.8 (2.1-10.8)	52.2 (35.3-68.6)
5-17 years	41.9 (36.1-48.0)	10.4 (7.6-14.2)	51.8 (45.7-57.9)
Sex			
Male	43.9 (36.4-51.8)	8.5 (5.8-12.4)	50.3 (42.6-58.0)
Female	39.6 (32.2-47.5)	10.7 (6.8-16.5)	54.3 (45.8-62.6)
Race			
White	40.7 (34.6-47.1)	9.4 (6.7-13.1)	51.8 (45.5-58.1)
Black	43.6 (30.8-57.2)	12.2 (6.3-22.6)	43.9 (31.1-57.6)
Household income			
< \$20,000	40.1 (27.9-53.7)	10.7 (5.1-21.0)	52.5 (39.0-65.7)
\$20,000-49,999	41.8 (32.0-52.2)	9.8 (5.2-17.5)	53.2 (43.2-63.0)
≥ \$50,000	40.2 (33.1-47.7)	8.5 (5.5-13.0)	49.0 (41.3-56.8)
Education of BRFS respondent			
≤ HS graduate	45.6 (34.3-57.3)	5.5 (2.8-10.5)	58.6 (46.4-69.9)
Some college	38.1 (29.3-47.8)	14.8 (9.4-22.4)	50.1 (40.3-59.9)
College graduate	43.0 (35.2-51.3)	8.0 (4.9-12.6)	49.2 (41.2-57.3)
^d 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 or {child’s name} an asthma action plan?”			
^e Responded “yes” to the question, “Have you or {child’s name} ever taken a course or class on how to manage {his/her} asthma?”			
^f Responded “yes” to ≥ 3 of the 5 questions above (b-f).			

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 7. Prevalence of Asthma Triggers in Home Environment, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined				
	Cigarettes Smoked in Home^a	Mold Seen/Smelled in Home^b	Saw Cockroaches in Home^c	Saw Mice/Rat in Home^d
Total	14.3 (9.9-20.2)	13.5 (9.6-18.5)	1.0 (0.5-2.0)	5.6 (3.8-8.4)
Age				
0-4 years	20.1 (6.5-47.5)	16.8 (8.1-31.8)	2.7 (0.8-9.3)	5.4 (2.1-13.4)
5-17 years	13.0 (9.1-18.4)	12.9 (8.8-18.5)	0.7 (0.3-1.4)	5.7 (3.7-8.8)
Sex				
Male	12.9 (7.8-20.4)	16.0 (10.3-23.9)	0.8 (0.3-2.0)	5.6 (3.3-9.2)
Female	16.1 (9.3-26.4)	10.3 (6.3-16.4)	1.2 (0.4-3.3)	5.7 (3.0-10.6)
Race				
White	9.1 (6.5-12.7)	12.6 (8.1-19.0)	0.8 (0.3-2.3)	5.8 (3.6-9.3)
Black	27.7 (15.6-44.4)	13.6 (6.5-26.2)	1.8 (0.7-4.2)	5.7 (2.2-14.2)
Household income				
< \$20,000	24.7 (15.8-36.5)	13.6 (6.5-26.4)	1.5 (0.5-4.4)	7.1 (2.3-20.2)
\$20,000-49,999	15.5 (10.2-22.7)	16.1 (9.6-25.8)	1.7 (0.5-6.0)	4.9 (2.2-10.7)
≥ \$50,000	8.3 (3.8-17.4)	11.0 (7.0-16.9)	0.3 (0.1-1.3)	5.6 (3.3-9.5)
Education of BRFS respondent				
≤ HS graduate	24.2 (13.6-39.3)	17.2 (8.6-31.5)	0.9 (0.3-2.9)	9.5 (4.8-17.8)
Some college	20.6 (12.6-32.0)	12.2 (6.9-20.6)	1.6 (0.5-4.7)	2.4 (1.1-5.2)
College graduate	2.3 (1.1-4.5)	11.9 (7.5-18.4)	0.5 (0.2-1.7)	5.6 (3.1-9.9)
^a Responded “yes” to the question, “In the past week, has anyone smoked inside {his/her} home?” ^b Responded “yes” to the question, “In the past 30 days, has anyone seen or smelled mold or a musty odor inside {his/her} home? Do not include mold on food.” ^c Responded “yes” to the question, “In the past 30 days, has anyone seen cockroaches inside {his/her} home?” ^d Responded “yes” to the question, “In the past 30 days, has anyone seen mice or rats inside {child’s name}home? Do not include mice or rats kept as pets.” ^e No positive responses in this cell.				

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 7 (continued). Prevalence of Asthma Triggers in Home Environment, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Surveys, 2005-2009 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	59.1 (53.1-64.8)	35.5 (30.3-41.0)	13.4 (10.3-17.3)	8.3 (5.7-12.1)	48.9 (43.3-54.6)
Age					
0-4 years	29.2 (18.2-43.2)	12.6 (6.6-22.6)	6.2 (2.8-13.1)	11.0 (4.1-26.2)	42.6 (27.5-59.3)
5-17 years	64.6 (58.4-70.2)	39.4 (33.7-45.4)	14.9 (11.4-19.4)	7.8 (5.1-11.8)	50.0 (44.0-56.0)
Sex					
Male	58.3 (50.4-65.8)	31.8 (25.0-39.6)	13.7 (9.6-19.1)	8.0 (4.6-13.8)	51.2 (43.6-58.8)
Female	60.0 (50.7-68.7)	40.0 (32.4-48.2)	13.1 (8.7-19.2)	8.7 (5.1-14.5)	46.0 (37.9-54.4)
Race					
White	71.7 (65.1-77.5)	43.5 (37.4-49.8)	15.6 (11.9-20.2)	7.5 (4.8-11.5)	49.4 (43.1-55.7)
Black	31.3 (18.3-48.0)	21.9 (10.5-40.0)	9.5 (3.9-21.7)	11.0 (4.8-23.1)	49.3 (35.3-63.4)
Household income					
< \$20,000	45.7 (32.6-59.6)	32.1 (20.7-46.1)	7.1 (2.6-17.8)	8.3 (2.9-21.8)	52.8 (39.3-65.9)
\$20,000-49,999	58.8 (48.1-68.6)	32.8 (24.6-42.2)	6.2 (3.4-11.2)	8.3 (3.5-18.2)	52.1 (42.1-61.9)
≥ \$50,000	68.7 (61.2-75.4)	41.2 (33.6-49.2)	19.3 (14.3-25.5)	9.4 (5.8-15.0)	46.5 (38.7-54.3)
Education of BRFS respondent					
≤ HS graduate	53.4 (40.4-65.9)	34.7 (24.5-46.6)	7.4 (3.5-15.3)	7.4 (3.7-14.5)	56.4 (43.4-68.6)
Some college	65.0 (55.4-73.6)	42.5 (33.0-52.5)	8.5 (5.0-14.1)	7.4 (3.1-16.5)	50.5 (40.7-60.2)
College graduate	58.1 (49.7-66.0)	30.2 (23.8-37.5)	21.5 (15.7-28.8)	9.8 (5.7-16.1)	42.5 (34.8-50.6)
^f Responded “yes” to the question, “Does the {child’s name} home have pets, such as dogs, cats, hamsters, birds, or other feathered or furry pets that spend time indoors?” ^g Responded “yes” to the question, “Is the pet allowed in {his/her} bedroom?” (Among all respondents.) ^h Responded “yes” to the question, “Is a wood burning fireplace or wood burning stove used in {child’s name} home?” ⁱ Responded “yes” to the question, “Are unvented gas logs, unvented gas fireplaces, or unvented gas stoves used in {his/her}home?” ^j Responded “yes” to the question, “Is gas used for cooking in {his/her}home?”					

Table 8. Prevalence of Asthma Trigger Avoidance Behaviors in Home Environment, Among Children Aged 0-17 Years with Current Asthma				
Michigan Asthma Call-Back Survey, 2005-2009 Combined				
	Kitchen Fan Used When Cooking^a	Bathroom Exhaust Fan Used^b	Sheets Washed in Hot Water^c	Air Cleaner Used in Home^d
Total	53.4 (47.5-59.1)	52.3 (46.4-58.2)	46.7 (40.9-52.5)	33.9 (29.0-39.1)
Age				
0-4 years	51.4 (34.1-68.4)	56.8 (40.3-72.0)	34.8 (21.1-51.6)	32.9 (20.4-48.4)
5-17 years	53.3 (47.1-59.4)	51.6 (45.4-57.7)	49.0 (42.9-55.1)	34.0 (28.8-39.6)
Sex				
Male	55.0 (47.1-62.6)	50.1 (42.3-57.9)	47.9 (40.2-55.7)	34.8 (28.2-42.0)
Female	51.3 (42.6-59.9)	55.2 (46.5-63.6)	45.0 (36.6-53.7)	32.8 (25.9-40.5)
Race				
White	52.4 (46.0-58.8)	55.9 (49.3-62.3)	49.4 (43.1-55.8)	35.3 (29.8-41.2)
Black	54.7 (40.2-68.4)	29.0 (18.8-41.9)	42.9 (28.4-58.6)	29.3 (19.0-42.4)
Household income				
< \$20,000	54.0 (40.3-67.2)	39.7 (27.4-53.6)	46.4 (33.1-60.3)	22.4 (13.5-35.0)
\$20,000-49,999	55.7 (45.7-65.2)	50.9 (41.0-60.8)	40.0 (30.7-50.1)	34.9 (26.0-44.9)
≥ \$50,000	55.2 (47.3-63.0)	55.2 (47.0-63.2)	51.2 (43.3-59.0)	39.1 (32.2-46.5)
Education of BRFS respondent				
≤ HS graduate	49.0 (36.4-61.6)	49.1 (36.3-61.9)	37.8 (26.1-51.2)	26.6 (18.3-36.9)
Some college	54.2 (44.1-63.9)	54.4 (44.3-64.2)	51.4 (41.7-61.0)	32.5 (24.7-41.3)
College graduate	55.7 (47.5-63.6)	52.9 (44.6-61.0)	48.8 (40.6-57.0)	40.1 (32.4-48.4)
^a Responded “yes” to the question, “Is an exhaust fan that vents to the outside used regularly when cooking in the kitchen in {his/her} home?” ^b Responded “yes” to the question, “In {child’s name} bathroom, does {he/she} regularly use an exhaust fan that vents to the outside?” ^c Responded “hot” to the question, “Are {his/her} sheets and pillowcases washed in cold, warm, or hot water?” ^d Responded “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 {child’s name} home?”				

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 8 (continued). Prevalence of Asthma Trigger Avoidance Behaviors in Home Environment, Among Children Aged 0-17 Years with Current Asthma				
Michigan Asthma Call-Back Survey, 2005-2009 Combined				
	Dehumidifier Used Regularly in Home^e	No Carpeting in Child's Bedroom^f	Child Uses Mattress Cover^g	Child Uses Pillow Cover^h
Total	42.9 (37.4-48.6)	27.9 (23.3-32.9)	33.3 (28.5-38.5)	35.2 (30.2-40.5)
Age				
0-4 years	42.2 (27.0-59.0)	28.1 (16.4-43.9)	28.7 (17.7-43.0)	21.2 (12.2-34.3)
5-17 years	43.1 (37.3-49.1)	27.8 (23.0-33.3)	34.4 (29.1-40.0)	38.0 (32.5-43.8)
Sex				
Male	44.8 (37.4-52.4)	27.8 (21.8-34.8)	32.5 (26.4-39.3)	34.8 (28.3-41.9)
Female	40.6 (32.6-49.1)	28.0 (21.4-35.6)	34.4 (27.1-42.6)	35.6 (28.2-43.9)
Race				
White	48.3 (42.0-54.6)	27.5 (22.5-33.2)	38.2 (32.5-44.3)	39.9 (34.0-46.1)
Black	35.7 (23.8-49.8)	35.9 (24.3-49.4)	26.8 (17.2-39.3)	28.1 (18.1-40.9)
Household income				
< \$20,000	19.2 (11.1-31.1)	41.1 (28.4-55.2)	26.2 (16.7-38.5)	27.3 (17.5-40.1)
\$20,000-49,999	40.3 (31.0-50.3)	24.5 (16.9-34.0)	25.4 (18.2-34.1)	31.0 (22.6-41.0)
≥ \$50,000	51.8 (44.0-59.6)	27.4 (21.3-34.5)	41.6 (34.4-49.2)	42.9 (35.6-50.6)
Education of BRFS respondent				
≤ HS graduate	35.9 (25.6-47.6)	21.6 (13.9-32.0)	25.2 (16.9-35.7)	32.4 (22.8-43.8)
Some college	30.3 (22.8-39.1)	38.7 (29.8-48.4)	29.6 (22.3-38.1)	33.4 (25.2-42.7)
College graduate	58.2 (50.2-65.7)	23.4 (17.5-30.5)	42.1 (34.4-50.1)	38.5 (31.2-46.5)
^e Responded "yes" to the question, "Is a dehumidifier regularly used to reduce moisture inside {his/her} home?" ^f Responded "no" to the question, "Does {child's name} have carpeting or rugs in {his/her} bedroom? This does not include throw rugs small enough to be laundered." ^g Responded "yes" to the question, "Does {he/she} use a mattress cover that is made especially for controlling dust mites?" ^h Responded "yes" to the question, "Does {child's name} use a pillow cover that is made especially for controlling dust mites?"				

Table 9. Prevalence of Ever Being Advised to Modify Child’s Environment to Improve Asthma, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined	
	Ever Advised to Modify Environment to Improve Asthma^a
Total	48.1 (42.4-53.9)
Age	
0-4 years	47.1 (30.9-63.9)
5-17 years	48.0 (42.1-54.1)
Sex	
Male	49.3 (41.5-57.0)
Female	46.7 (38.3-55.3)
Race	
White	48.2 (42.0-54.4)
Black	47.4 (33.6-61.5)
Household income	
< \$20,000	42.5 (30.4-55.6)
\$20,000-49,999	56.4 (46.6-65.8)
≥ \$50,000	49.9 (42.2-57.6)
Education of BRFS respondent	
≤ HS graduate	34.1 (24.2-45.7)
Some college	54.9 (45.3-64.1)
College graduate	52.2 (44.1-60.3)
^a Reported “yes” to the question, “Has a health professional ever advised you to change things in {his/her} home, school, or work to improve his/her asthma?”	

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 10. Percent Distribution of Number School Days Missed Due to Asthma,^a Among Children in Grades K-12 with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined				
	n^b	None	1-5 Days	≥ 6 Days
Total	437	57.0 (50.6-63.2)	27.2 (21.8-33.3)	15.8 (11.2-21.8)
Age				
0-4 years	2	-- ^c	-- ^c	-- ^c
5-17 years	428	56.8 (50.4-63.1)	27.3 (21.9-33.5)	15.9 (11.2-21.9)
Sex				
Male	235	52.1 (43.0-61.0)	33.5 (25.3-42.8)	14.5 (8.3-24.0)
Female	202	63.2 (54.8-70.8)	19.3 (13.8-26.4)	17.5 (11.8-25.2)
Race				
White	322	58.8 (51.5-65.7)	30.4 (23.9-37.7)	10.9 (7.4-15.6)
Black	80	53.9 (36.9-70.0)	18.6 (9.2-34.1)	27.5 (13.3-48.3)
Household income				
< \$20,000	66	60.9 (44.9-74.8)	16.7 (7.1-34.5)	22.5 (12.6-36.8)
\$20,000-49,999	113	51.9 (41.0-62.6)	34.6 (25.4-45.1)	13.5 (7.8-22.6)
≥ \$50,000	226	59.4 (50.4-67.7)	25.1 (18.7-32.9)	15.5 (9.0-25.4)
Education of BRFS respondent				
≤ HS graduate	117	53.3 (39.7-66.4)	34.0 (21.5-49.2)	12.7 (7.1-21.8)
Some college	146	50.3 (39.4-61.1)	26.1 (18.4-35.6)	23.6 (13.9-37.2)
College graduate	174	65.3 (56.2-73.4)	23.7 (16.8-32.4)	11.0 (6.5-18.1)
^a Response to the following question, “During the past 12 months, about how many days of school did {child’s name} miss because of {his/her} asthma?”				
^b Sample size (unweighted) for demographic subgroups.				
^c Inadequate sample size (n=2).				

Michigan Asthma Call-Back Survey, 2005-2009 (combined) Child Estimates

Table 11. Prevalence of School-Related Asthma Indicators, Among Children in Grades K-12 with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined				
	Asthma Action Plan on File at School^a	School Allows Asthma Medications^b	Pets in Child's Classroom^c	Mold Problems in Child's School^d
Total	33.3 (27.8-39.4)	52.6 (46.5-58.7)	5.2 (3.3-8.1)	2.5 (1.3-4.9)
Age				
0-4 years	-- ^e	-- ^e	-- ^e	-- ^e
5-17 years	33.3 (27.6-39.4)	53.1 (46.8-59.2)	5.2 (3.3-8.2)	2.5 (1.3-4.9)
Sex				
Male	38.3 (30.1-47.3)	50.4 (42.0-58.9)	4.3 (2.3-7.8)	1.4 (0.6-3.5)
Female	27.2 (20.3-35.5)	55.1 (46.4-63.4)	6.2 (3.2-11.7)	3.8 (1.6-9.1)
Race				
White	33.3 (27.1-40.3)	49.9 (42.9-56.9)	5.9 (3.5-9.8)	3.5 (1.7-6.9)
Black	37.4 (23.3-53.9)	63.7 (47.7-77.1)	4.8 (1.6-13.1)	0 ^f
Household income				
< \$20,000	38.4 (24.6-54.4)	55.9 (39.1-71.4)	4.3 (1.1-15.8)	0 ^f
\$20,000-49,999	31.9 (21.8-44.1)	50.4 (38.7-62.0)	7.5 (3.7-14.4)	1.8 (0.4-6.9)
≥ \$50,000	34.0 (26.4-42.5)	53.5 (45.2-61.7)	4.2 (2.0-8.6)	3.7 (1.7-7.8)
Education of BRFS respondent				
≤ HS graduate	38.5 (26.7-51.9)	50.5 (37.9-63.0)	2.9 (1.1-7.6)	0.9 (0.1-6.0)
Some college	31.7 (22.8-42.2)	54.2 (43.8-64.2)	8.0 (4.3-14.3)	0.7 (0.2-3.0)
College graduate	31.4 (23.4-40.7)	52.6 (43.2-61.9)	4.0 (1.6-9.9)	5.1 (2.3-10.9)
^a Responded "yes" to the question, "Does {child's name} have a written asthma action plan or asthma management plan on file at school?" ^b Responded "yes" to the question, "Does the school {he/she} goes to allow children with asthma to carry their medication with them while at school?" ^c Responded "yes" to the question, "Are there any pets such as dogs, cats, hamsters, birds or other feathered or furry pets in {his/her} classroom?" ^d Responded "yes" to the question, "Are you aware of any mold problems in {child's name} school?" ^e Inadequate sample size (n=2). ^f No positive responses in this cell.				