Prevalence of Asthma-Related Health Conditions among Michigan Children with Current Asthma
Estimates from the Michigan Asthma Call-Back Survey
2011-2013 Combined

Standard Tables

Prepared by: *Lauren Wisnieski*
              August 2015

Table of Contents

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 landline and cellular telephone survey of Michigan adults aged 18 years and older. Both of these surveys are conducted through a collaborative effort among the Population Health Surveillance Branch (PHSB) 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 Health and Human Services. The MiBRFS participates in the national Behavioral Risk Factor Surveillance System that is coordinated by PHSB.

Landline and cell phone 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 2011-2013 Michigan Asthma Call-Back Surveys combined. The total 3-year sample size of completed child interviews was 435, with 148 from 2011, 147 from 2012, and 140 from 2013. Estimates were weighted to adjust for the probabilities of selection and a raking adjustment factor that adjusted for the distribution of Michigan adults by telephone source, detailed race/ethnicity, education level, marital status, age by gender, gender by race/ethnicity, age by race/ethnicity, and renter/owner status all at the state level. Analyses were performed in SAS-Callable SUDAAN®, a statistical computing program that was designed for complex sample surveys.

The prevalence estimates and 95% confidence intervals included within the tables that follow were restricted to children with current asthma (n=310). 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?"

	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]
Table 1. Prevalence of Asthma Symptoms, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2011-2013 Combined				
Total	309	19.4 (14.2-25.9)	23.0 (17.4-29.7)	46.3 (39.7-53.1)
Age				
0-9 years	107	17.3 (9.8-28.6)	25.5 (16.5-37.2)	46.3 (35.5-57.4)
10-17 years	194	20.5 (14.0-28.9)	20.6 (14.2-28.9)	46.5 (38.0-55.1)
Sex				
Male	170	14.9 (9.2-23.2)	24.6 (17.0-34.2)	49.7 (40.6-58.9)
Female	137	25.2 (16.7-36.1)	21.3 (13.8-31.4)	42.6 (33.0-52.8)
Race				
White	227	15.7 (10.9-22.0)	17.4 (11.9-24.7)	43.2 (35.8-50.8)
Black	43	---[†]	---[†]	---[†]
Household income				
< $50,000	125	24.1 (15.4-35.7)	29.7 (20.4-41.0)	54.3 (43.5-64.7)
$\geq$ $50,000	163	14.0 (8.7-21.8)	14.6 (9.0-22.8)	38.8 (30.6-47.6)
Education of BRFS respondent				
$\leq$ HS graduate	69	34.6 (20.9-51.6)	43.6 (29.1-59.2)	57.8 (42.5-71.7)
Some college	102	14.0 (8.1-23.1)	19.4 (11.4-31.0)	50.0 (38.3-61.7)
College graduate	138	14.6 (8.8-23.2)	13.7 (8.0-22.5)	36.3 (27.6-45.9)

[a] Sample sizes (unweighted) for demographic subpopulations. Cell sample sizes for prevalence estimates will vary because of missing values.
[b] Reported $\geq$ 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 $\geq$ 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?"
[†] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

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, 2011-2013 Combined				
	None	**1-6 Days**	**7-13 Days**	**14 Days**
Total	11.0 (7.1-16.8)	13.9 (9.3-20.3)	21.2 (16.2-27.3)	53.8 (46.8-60.7)
Age				
0-9 years	11.4 (5.4-22.5) ˜	16.8 (9.6-27.7)	19.5 (12.0-30.1)	52.3 (40.8-63.5)
10-17 years	11.2 (6.6-18.4)	12.3 (6.8-21.1)	23.5 (17.1-31.4)	53.0 (44.2-61.7)
Sex				
Male	14.6 (8.5-23.8)	14.2 (8.4-23.0)	18.0 (11.7-26.7)	53.2 (43.7-62.5)
Female	6.7 (3.1-13.9) ˜	13.8 (7.3-24.6) ˜	25.5 (18.0-34.8)	54.0 (43.7-64.0)
Race				
White	8.9 (5.2-14.8)	11.7 (7.1-18.8)	20.6 (15.1-27.3)	58.8 (50.8-66.3)
Black	---†	---†	---†	---†
Household income				
< $50,000	12.4 (6.4-22.6) ˜	23.7 (14.9-35.6)	20.4 (13.2-30.3)	43.4 (33.2-54.2)
≥ $50,000	10.0 (5.3-18.1) ˜	4.3 (2.1-8.4) ˜	23.9 (16.8-32.8)	61.8 (52.6-70.3)
Education of BRFS respondent				
≤ HS graduate	19.2 (9.4-35.2) ˜	27.3 (15.2-43.9)	10.9 (4.4-24.6) ˜	42.6 (28.9-57.6)
Some college	9.5 (4.8-18.0) ˜	13.7 (6.5-26.6) ˜	22.8 (14.4-34.1)	54.1 (41.9-65.8)
College graduate	7.2 (3.0-16.0) ˜	6.0 (3.0-11.7) ˜	26.3 (18.5-36.0)	60.5 (50.5-69.7)

[a] Response 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?"

† This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

˜ This estimate should be used with caution due to its low reliability and precision.

Table 3. Prevalence of Asthma-Related Health Care Utilization, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2011-2013 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	20.2 (15.0-26.7)	12.3 (8.0-18.6)	---[†]	51.5 (44.6-58.4)	65.3 (58.7-71.4)
Age					
0-9 years	23.9 (15.4-35.2)	14.9 (8.0-26.0)	---[†]	59.8 (48.5-70.1)	67.0 (55.4-76.8)
10-17 years	16.7 (10.8-25.0)	9.2 (4.6-17.6) [~]	---[†]	45.4 (36.9-54.2)	62.3 (54.0-69.9)
Sex					
Male	15.1 (9.3-23.5)	6.7 (2.8-15.2) [~]	---[†]	51.1 (41.7-60.4)	62.5 (53.2-71.0)
Female	27.1 (18.6-37.6)	19.7 (12.0-30.6)	---[†]	52.0 (41.8-62.0)	68.5 (58.9-76.7)
Race					
White	14.6 (10.0-20.9)	6.5 (3.6-11.7) [~]	---[†]	45.2 (37.5-53.1)	64.8 (57.0-71.9)
Black	---[†]	---[†]	---[†]	---[†]	---[†]
Household income					
< $50,000	25.5 (16.7-36.9)	18.5 (10.7-30.2)	---[†]	58.4 (47.4-68.6)	65.4 (54.5-74.9)
≥ $50,000	15.7 (10.1-23.5)	6.0 (2.7-12.8) [~]	---[†]	45.7 (36.7-54.8)	64.4 (55.5-72.4)
Education of BRFS respondent					
≤ HS graduate	25.4 (13.4-42.9)	24.3 (12.4-42.1) [~]	---[†]	64.4 (49.2-77.1)	70.3 (55.9-81.5)
Some college	20.5 (12.7-31.4)	9.6 (4.7-18.8) [~]	---[†]	48.4 (36.3-60.6)	61.8 (49.4-72.8)
College graduate	16.8 (10.6-25.6)	7.0 (3.1-14.9) [~]	---[†]	46.1 (36.6-55.8)	34.9 (26.6-44.4)

[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?"

[†] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

[~] This estimate should be used with caution due to its low reliability and precision.

Table 4. Prevalence of Any Asthma Controller Medication Use in Past 3 Months, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2011-2013 Combined	
	Used ≥ 1 Asthma Controller Medication in Past 3 Months[a]
Total	53.3 (46.4-60.0)
Age 0-9 years 10-17 years	 61.4 (49.7-71.9) 49.0 (40.6-57.4)
Sex Male Female	 52.3 (43.2-61.3) 53.9 (43.6-63.9)
Race White Black	 51.1 (43.2-58.9) ---[†]
Household income < $50,000 ≥ $50,000	 55.1 (43.9-65.7) 52.8 (43.9-61.4)
Education of BRFS respondent ≤ HS graduate Some college College graduate	 54.4 (39.1-68.8) 50.2 (38.4-61.9) 55.0 (45.5-64.2)
[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. [†] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.	

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, 2011-2013 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	4.1 (1.9-9.0) ˜	3.6 (1.4-8.7) ˜	7.9 (4.5-13.6)	11.1 (6.8-17.4)
Age				
0-9 years	---†	---†	---†	8.3 (3.3-19.4) ˜
10-17 years	6.1 (2.3-14.9) ˜	---†	8.1 (4.2-15.0) ˜	12.3 (6.9-20.8)
Sex				
Male	2.0 (0.7-5.3) ˜	2.0 (0.7-5.5) ˜	8.9 (4.1-18.0) ˜	10.2 (5.2-19.1) ˜
Female	7.0 (2.5-17.9) ˜	---†	6.8 (2.9-15.1) ˜	12.3 (6.1-23.0) ˜
Race				
White	2.9 (1.2-6.7) ˜	---†	7.3 (3.8-13.5) ˜	8.2 (4.5-14.3)
Black	---†	---†	---†	---†
Household income				
< $50,000	8.6 (3.7-18.8) ˜	7.4 (2.8-18.3) ˜	13.7 (7.1-24.7) ˜	19.3 (11.1-31.6)
≥ $50,000	---†	---†	---†	4.7 (1.8-11.5) ˜
Education of BRFS respondent				
≤ HS graduate	---†	---†	16.4 (6.8-34.5) ˜	26.7 (14.2-44.5)
Some college	---†	---†	6.2 (2.4-15.0) ˜	7.5 (3.3-16.1) ˜
College graduate	---†	---†	4.1 (1.5-10.6) ˜	4.4 (1.7-10.7) ˜

[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.
† This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
˜ This estimate should be used with caution due to its low reliability and precision.

Table 6. Prevalence of Indicators of Knowledge Related to Asthma Management, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2011-2013 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	83.8 (77.7-88.5)	88.3 (82.0-92.5)	45.5 (38.9-52.3)
Age			
0-9 years	78.2 (67.1-86.3)	86.9 (74.8-93.6) ˜	31.5 (21.9-42.9)
10-17 years	89.4 (83.0-93.5)	90.4 (83.4-94.7)	56.7 (48.2-64.8)
Sex			
Male	82.1 (73.0-88.6)	83.3 (73.1-90.1)	41.1 (32.6-50.1)
Female	85.7 (77.3-91.4)	94.5 (88.5-97.5) ˜	51.2 (41.0-61.2)
Race			
White	85.7 (79.3-90.4)	87.4 (80.2-92.3)	41.5 (34.2-49.2)
Black	---†	---†	---†
Household income			
< $50,000	79.4 (68.3-87.4)	86.2 (74.2-93.1) ˜	52.8 (41.9-63.5)
≥ $50,000	86.3 (78.8-91.4)	89.3 (81.4-94.1)	39.6 (31.5-48.3)
Education of BRFS respondent			
≤ HS graduate	78.6 (61.8-89.2) ˜	86.5 (69.4-94.7) ˜	49.7 (35.1-64.3)
Some college	89.1 (78.6-94.7) ˜	83.8 (70.2-91.8) ˜	50.7 (38.9-62.3)
College graduate	82.9 (74.4-89.0)	93.0 (86.1-96.6) ˜	38.8 (30.0-48.5)

[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?"
† This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
˜ This estimate should be used with caution due to its low reliability and precision.

	Ever Received Asthma Action Plan[d]	Ever Taken Asthma Management Class[e]	Received ≥ 3 Types of Asthma Education[f]
Table 6 (continued). Prevalence of Receiving Education Related to Asthma Management, Among Children Aged 0-17 Years with Current Asthma **Michigan Asthma Call-Back Survey, 2011-2013 Combined**			
Total	50.4 (43.7-57.2)	13.7 (9.7-19.1)	61.8 (54.9-68.2)
Age			
0-9 years	41.8 (31.4-53.1)	12.7 (6.6-22.8) ˜	50.9 (39.8-62.0)
10-17 years	57.4 (48.9-65.4)	14.8 (9.9-21.4)	70.9 (62.6-77.9)
Sex			
Male	46.9 (37.9-56.1)	13.3 (8.0-21.2)	55.5 (46.2-64.4)
Female	55.4 (45.3-65.0)	14.4 (8.9-22.5)	70.0 (60.1-78.4)
Race			
White	49.4 (41.8-57.1)	12.5 (8.0-19.0)	60.1 (52.1-67.5)
Black	---†	---†	---†
Household income			
< $50,000	47.6 (36.9-58.4)	15.4 (9.0-25.0)	61.6 (50.4-71.7)
≥ $50,000	55.3 (46.2-64.1)	11.3 (6.9-17.9)	62.5 (53.2-70.9)
Education of BRFS respondent			
≤ HS graduate	50.6 (36.1-64.9)	14.9 (7.4-27.9) ˜	64.2 (48.9-77.1)
Some college	50.1 (38.2-62.1)	16.1 (8.8-27.4)	63.1 (50.7-74.0)
College graduate	50.6 (41.2-59.9)	11.1 (6.5-18.3)	59.3 (49.5-68.3)

[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).

† This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

˜ This estimate should be used with caution due to its low reliability and precision.

Table 7. Prevalence of Asthma Triggers in Home Environment, Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2011-2013 Combined				
	Cigarettes Smoked in Home[a]	**Mold Seen/Smelled in Home[b]**	**Saw Cockroaches in Home[c]**	**Saw Mice/Rat in Home[d]**
Total	9.9 (6.2-15.4)	10.4 (6.9-15.3)	---[†]	3.8 (2.1-6.9) ˜
Age				
0-9 years	8.5 (3.5-19.1) ˜	3.5 (1.5-8.4) ˜	---[†]	4.5 (1.8-11.0) ˜
10-17 years	8.1 (4.8-13.6)	14.5 (9.2-21.9)	---[†]	3.5 (1.6-7.6) ˜
Sex				
Male	9.1 (4.5-17.6) ˜	12.4 (7.4-19.9)	---[†]	3.9 (1.7-8.6) ˜
Female	11.0 (6.0-19.4)	8.0 (4.0-15.3) ˜	---[†]	3.8 (1.5-9.2) ˜
Race				
White	6.4 (3.5-11.6) ˜	10.9 (6.8-17.0)	---[†]	4.2 (2.1-8.3) ˜
Black	---[†]	---[†]	---[†]	---[†]
Household income				
< $50,000	17.6 (10.4-28.1)	12.3 (7.0-20.8)	---[†]	3.4 (1.2-9.0) ˜
≥ $50,000	---[†]	9.3 (5.0-16.7) ˜	---[†]	4.1 (1.8-9.2) ˜
Education of BRFS respondent				
≤ HS graduate	18.9 (8.8-35.7) ˜	16.7 (8.2-30.9) ˜	---[†]	---[†]
Some college	12.8 (6.9-22.6)	5.4 (2.5-11.5) ˜	---[†]	---[†]
College graduate	2.0 (0.8-4.9) ˜	10.4 (5.7-18.1)	---[†]	5.6 (2.6-11.7) ˜

[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.
[†] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
˜ This estimate should be used with caution due to its low reliability and precision.

Table 7 (continued). Prevalence of Asthma Triggers in Home Environment Among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Surveys, 2011-2013 Combined					
	Inside Pets[f]	Pets Allowed in Bedroom[g]	Wood Burning Stove/Fireplace Used[h]	Unvented Gas Logs, Stoves, or Fireplaces Used[i]	Gas Used for Cooking[j]
Total	65.6 (58.8-71.8)	35.7 (29.6-42.3)	11.1 (8.0-15.2)	4.8 (2.7-8.5)	47.7 (41.1-54.4)
Age					
0-9 years	62.1 (50.9-72.2)	28.9 (19.6-40.3)	6.5 (2.9-13.8) ˜	5.0 (1.9-12.5) ˜	45.8 (35.1-56.9)
10-17 years	67.1 (58.5-74.7)	39.8 (32.1-48.1)	15.0 (10.5-20.9)	4.9 (2.4-9.9) ˜	49.3 (40.9-57.7)
Sex					
Male	58.4 (49.0-67.3)	34.0 (25.8-43.3)	9.2 (5.8-14.3)	4.9 (2.1-10.8) ˜	44.3 (35.5-53.6)
Female	74.3 (64.6-82.0)	37.0 (28.2-46.7)	13.6 (8.6-20.8)	4.7 (2.1-10.5) ˜	52.0 (42.0-61.7)
Race					
White	67.6 (59.7-74.5)	39.4 (32.3-47.0)	12.6 (8.7-18.0)	5.1 (2.6-9.5) ˜	46.9 (39.4-54.6)
Black	---†	---†	---†	---†	---†
Household income					
< $50,000	67.3 (56.5-76.6)	36.0 (26.2-47.1)	9.8 (5.8-16.0)	7.6 (3.6-15.2) ˜	50.2 (39.4-61.1)
≥ $50,000	66.6 (57.2-74.8)	36.7 (28.8-45.4)	13.4 (8.7-20.1)	2.9 (1.1-7.2) ˜	43.6 (35.2-52.4)
Education of BRFS respondent					
≤ HS graduate	68.9 (54.4-80.4)	33.1 (20.7-48.3)	8.0 (3.3-18.1) ˜	---†	56.5 (41.5-70.4)
Some college	73.3 (60.7-82.9)	40.7 (29.8-52.6)	11.4 (6.7-18.8)	6.9 (2.9-15.4) ˜	43.8 (32.5-55.7)
College graduate	57.7 (47.9-66.9)	33.3 (25.2-42.6)	12.7 (8.0-19.6)	4.9 (2.0-11.3) ˜	45.4 (36.4-54.7)

[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?"
† This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
˜ This estimate should be used with caution due to its low reliability and precision.

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, 2011-2013 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	60.1 (53.2-66.6)	56.0 (49.0-62.7)	44.1 (37.3-51.1)	38.0 (31.5-45.0)
Age				
0-9 years	57.3 (45.9-67.9)	48.9 (37.9-59.9)	46.6 (35.5-58.0)	32.6 (23.0-44.0)
10-17 years	60.1 (51.7-68.0)	62.6 (53.7-70.7)	40.1 (31.9-48.9)	41.6 (33.4-50.4)
Sex				
Male	58.0 (48.6-66.9)	59.8 (50.0-68.8)	45.7 (36.5-55.2)	38.2 (29.6-47.6)
Female	62.2 (52.1-71.4)	50.7 (40.7-60.7)	42.6 (32.7-53.1)	36.9 (27.4-47.5)
Race				
White	59.7 (51.9-67.1)	63.5 (55.6-70.6)	47.0 (39.3-54.8)	36.4 (29.3-44.1)
Black	---[†]	---[†]	---[†]	---[†]
Household income				
< $50,000	61.0 (49.9-71.0)	44.0 (33.7-54.9)	35.9 (25.6-47.7)	38.8 (28.4-50.2)
≥ $50,000	58.6 (49.3-67.3)	66.4 (57.3-74.4)	50.9 (41.7-59.9)	38.4 (30.0-47.6)
Education of BRFS respondent				
≤ HS graduate	67.2 (52.9-78.9)	41.6 (28.2-56.4)	36.1 (22.5-52.4)	44.5 (30.4-59.5)
Some college	58.6 (46.4-69.8)	61.3 (49.1-72.2)	46.5 (34.7-58.8)	36.6 (26.1-48.7)
College graduate	56.9 (46.9-66.3)	60.8 (51.1-69.8)	47.1 (37.6-56.9)	35.0 (26.5-44.5)

[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?"
[†] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

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, 2011-2013 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	40.8 (34.3-47.6)	36.3 (30.0-43.2)	43.8 (37.1-50.8)	42.8 (36.1-49.6)
Age				
0-9 years	37.6 (27.5-49.0)	35.0 (24.8-46.8)	39.6 (29.3-50.9)	40.6 (30.2-52.0)
10-17 years	44.2 (36.0-52.8)	35.3 (28.0-43.5)	48.3 (39.8-56.9)	45.2 (36.6-54.1)
Sex				
Male	42.1 (33.4-51.4)	32.9 (24.6-42.5)	47.1 (38.0-56.4)	47.2 (38.1-56.5)
Female	38.3 (29.2-48.5)	40.6 (31.1-50.8)	38.9 (29.4-49.2)	36.4 (27.2-46.6)
Race				
White	40.6 (33.2-48.4)	36.2 (29.0-44.2)	43.3 (35.7-51.2)	44.8 (37.2-52.6)
Black	---†	---†	---†	---†
Household income				
< $50,000	37.4 (27.7-48.2)	43.3 (32.7-54.5)	35.8 (26.0-46.8)	35.6 (25.9-46.6)
≥ $50,000	45.3 (36.6-54.4)	29.7 (22.3-38.4)	53.9 (44.7-62.9)	51.8 (42.7-60.8)
Education of BRFS respondent				
≤ HS graduate	36.1 (23.4-51.1)	36.8 (23.8-52.0)	34.8 (22.2-50.0)	36.5 (23.7-51.7)
Some college	38.0 (27.3-50.1)	45.5 (34.0-57.6)	47.2 (35.5-59.2)	42.3 (30.9-54.5)
College graduate	45.9 (36.3-55.7)	28.9 (21.0-38.3)	46.8 (37.3-56.5)	47.0 (37.5-56.8)

[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?"

† This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

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, 2011-2013 Combined	
	Ever Advised to Modify Environment to Improve Asthma[a]
Total	43.6 (37.1-50.3)
Age	
0-9 years	37.3 (27.0-49.0)
10-17 years	49.0 (40.7-57.4)
Sex	
Male	48.0 (38.9-57.3)
Female	37.9 (29.1-47.5)
Race	
White	40.5 (33.1-48.2)
Black	---[†]
Household income	
< $50,000	40.5 (30.3-51.6)
≥ $50,000	47.3 (38.5-56.2)
Education of BRFS respondent	
≤ HS graduate	44.3 (30.5-59.2)
Some college	49.6 (37.8-61.4)
College graduate	38.5 (29.7-48.1)
[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?" [†] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.	

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, 2011-2013 Combined				
	n[b]	None	1-5 Days	≥6 Days
Total	291	57.3 (50.2-64.2)	25.3 (19.8-31.9)	17.3 (12.4-23.8)
Age				
0-9 years	90	45.9 (34.3-57.9)	29.5 (20.2-40.9)	24.6 (15.2-37.4)
10-17 years	193	63.3 (54.6-71.2)	23.1 (16.3-31.7)	13.6 (8.7-20.6)
Sex				
Male	160	53.6 (44.0-62.9)	25.7 (18.9-34.0)	20.7 (13.5-30.5)
Female	129	62.6 (51.8-72.3)	23.9 (15.5-34.9)	13.5 (7.8-22.5)
Race				
White	216	60.6 (52.4-68.3)	22.6 (16.8-29.8)	16.8 (11.1-24.5)
Black	---[†]	---[†]	---[†]	---[†]
Household income				
< $50,000	113	52.8 (41.4-64.0)	27.9 (18.8-39.4)	19.2 (11.5-30.3)
≥ $50,000	159	60.1 (50.7-68.9)	23.7 (17.1-31.9)	16.2 (10.1-24.9)
Education of BRFS respondent				
≤ HS graduate	60	44.7 (30.2-60.2)	31.2 (18.2-48.1)	24.1 (13.0-40.3)
Some college	94	54.0 (41.4-66.1)	23.6 (15.1-34.9)	22.4 (13.0-35.9)
College graduate	137	66.5 (57.1-74.7)	23.5 (16.4-32.4)	10.0 (5.6-17.4)

[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.
[†] This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.

	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]
Table 11. Prevalence of School-Related Asthma Indicators, Among Children in Grades K-12 with Current Asthma Michigan Asthma Call-Back Survey, 2011-2013 Combined				
Total	41.2 (34.3-48.5)	57.7 (50.6-64.5)	3.4 (1.7-6.5) ˜	---†
Age				
0-9 years	38.8 (27.8-51.0)	35.3 (24.3-48.1)	7.0 (3.3-14.6) ˜	---†
10-17 years	44.0 (35.4-52.9)	73.1 (64.7-80.1)	---†	---†
Sex				
Male	41.2 (32.2-50.8)	54.2 (44.4-63.8)	---†	---†
Female	41.2 (31.0-52.2)	62.6 (52.1-72.1)	5.2 (2.2-11.5) ˜	---†
Race				
White	35.7 (28.3-43.9)	52.1 (44.0-60.1)	2.5 (1.1-5.7) ˜	---†
Black	---†	---†	---†	---†
Household income				
< $50,000	46.5 (35.0-58.4)	59.4 (47.5-70.2)	---†	---†
≥ $50,000	38.1 (29.4-47.6)	57.2 (47.5-66.4)	4.3 (1.9-9.3) ˜	---†
Education of BRFS respondent				
≤ HS graduate	48.3 (33.0-64.0)	55.0 (38.8-70.2)	---†	---†
Some college	50.2 (37.5-63.0)	50.1 (37.4-62.8)	---†	---†
College graduate	31.4 (23.2-40.9)	65.0 (55.1-73.8)	3.3 (1.2-8.4) ˜	---†

[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] No positive responses in this cell.
† This estimate was suppressed due to it having a denominator of less than 50 and/or a relative standard error of greater than 50%.
˜ This estimate should be used with caution due to its low reliability and precision.