Prevalence of Asthma-Related Health Conditions among Michigan Children with Current Asthma
Estimates from the Michigan Asthma Call-Back Survey
2012-2014 Combined

Standard Tables

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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 2012-2014 Michigan Asthma Call-Back Surveys combined. The total 3-year sample size of completed child interviews was 378, with 147 from 2012, 140 from 2013, and 91 from 2014. 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=269). 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?"

	Had Asthma Symptoms on ≥ 9 Days in Past Month[a]	Difficulty Sleeping Due to Asthma Symptoms on ≥ 2 Days in Past Month[b]	Usual Activities Limited at Least a Little During Past 12 Months[c]
Table 1. Prevalence of Asthma Symptoms, among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2012-2014 Combined			
Total	14.9 (10.2-21.3)	22.0 (16.1-29.3)	40.9 (33.2-49.1)
Age			
0-9 years	14.4 (7.2-26.6) ˜	24.1 (14.5-37.2)	40.6 (28.6-53.8)
10-17 years	14.4 (9.4-21.4)	20.0 (13.3-28.9)	41.1 (31.5-51.5)
Gender			
Male	14.2 (8.6-22.7)	24.5 (16.6-34.4)	47.6 (37.5-57.9)
Female	15.9 (8.8-27.1)	18.3 (10.7-29.6)	30.7 (20.3-43.5)
Race			
White	11.5 (7.5-17.3)	16.0 (10.6-23.3)	33.1 (25.6-41.6)
Black	---†	---†	---†
Household Income			
< $50,000	16.8 (9.2-28.7)	30.1 (19.7-43.1)	55.4 (43.0-67.2)
≥ $50,000	10.9 (6.4-18.1)	13.5 (8.3-21.3)	24.1 (17.5-32.4)
Education of BRFS respondent			
≤ HS graduate	---†	37.2 (21.8-55.7)	60.1 (42.8-75.2)
Some college	11.4 (6.5-19.1)	20.9 (12.1-33.6)	42.0 (30.1-55.0)
College graduate	11.9 (6.2-21.7) ˜	14.1 (7.7-24.4)	28.2 (18.8-40.0)

[a] Weighted percent and corresponding 95% confidence interval (CI) for individuals who 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?"

[b] Weighted percent and corresponding 95% CI for individuals who 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?"

[c] Weighted percent and corresponding 95% CI for individuals who 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 for 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 2. Percent Distribution[a] of Number of Asthma Symptom-Free Days[b] in Past 2 Weeks, among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2012-2014 Combined				
	None	**1-6 Days**	**7-13 Days**	**14 Days**
Total	13.0 (8.2-20.1)	12.7 (8.2-19.2)	20.2 (14.9-26.8)	54.1 (46.2-61.7)
Age				
0-9 years	12.6 (5.6-25.6) ˜	15.3 (8.2-26.8)	19.4 (11.3-31.4)	52.7 (40.0-65.0)
10-17 years	13.9 (7.3-24.8) ˜	11.3 (6.1-20.0)	21.6 (15.0-30.2)	53.2 (43.2-62.9)
Gender				
Male	16.9 (9.6-28.2)	11.9 (6.8-20.0)	19.0 (12.1-28.6)	52.2 (42.0-62.2)
Female	7.0 (2.8-16.2) ˜	14.2 (7.0-26.7) ˜	22.1 (14.7-32.0)	56.7 (44.5-68.2)
Race				
White	8.6 (5.0-14.5)	11.0 (6.5-17.9)	20.0 (14.3-27.2)	60.4 (51.9-68.2)
Black	---†	---†	---†	---†
Household Income				
< $50,000	15.7 (8.1-28.1) ˜	21.2 (12.5-33.7)	15.8 (8.7-26.9)	47.3 (35.3-59.7)
≥ $50,000	6.3 (3.0-12.8) ˜	4.8 (2.2-10.3) ˜	27.5 (19.6-37.0)	61.4 (51.8-70.1)
Education of BRFS respondent				
≤ HS graduate	19.4 (6.8-44.3) ˜	21.9 (11.3-38.2) ˜	18.6 (8.0-37.3) ˜	40.2 (24.9-57.6)
Some college	15.6 (8.7-26.2)	10.3 (4.6-21.5) ˜	19.6 (12.2-30.0)	54.5 (42.3-66.3)
College graduate	---†	9.4 (3.8-21.4) ˜	21.6 (14.1-31.8)	61.9 (50.0-72.6)

[a] Weighted percent and corresponding 95% CI for responses 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, 2012-2014 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	18.0 (12.6-24.9)	8.9 (5.0-15.2)	---[†]	42.3 (34.8-50.1)	62.6 (54.9-69.6)
Age					
0-9 years	24.3 (14.6-37.4)	10.3 (4.2-23.3) ~	---[†]	53.1 (40.7-65.1)	65.2 (51.9-76.4)
10-17 years	12.4 (7.4-19.9)	6.6 (3.0-13.7) ~	---[†]	34.5 (26.7-43.3)	60.1 (50.4-69.0)
Gender					
Male	18.9 (11.8-28.9)	8.9 (4.0-18.6) ~	---[†]	43.3 (33.5-53.8)	57.9 (47.7-67.4)
Female	16.6 (10.2-26.0)	9.0 (4.3-18.1) ~	---[†]	40.9 (30.0-52.8)	69.8 (59.2-78.6)
Race					
White	15.2 (9.8-22.8)	5.3 (2.4-10.9) ~	---[†]	35.9 (28.5-44.0)	62.4 (53.9-70.1)
Black	---[†]	---[†]	---[†]	---[†]	---[†]
Household Income					
< $50,000	25.1 (15.6-37.8)	13.2 (6.4-25.3) ~	---[†]	49.6 (37.2-62.1)	62.2 (49.6-73.4)
≥ $50,000	12.5 (7.2-20.6)	---[†]	---[†]	37.3 (28.6-46.8)	65.8 (56.3-74.1)
Education of BRFS respondent					
≤ HS graduate	17.5 (7.7-35.3) ~	16.1 (6.6-34.2) ~	---[†]	48.4 (31.4-65.8)	62.3 (43.5-78.0)
Some college	24.8 (15.0-38.1)	---[†]	---[†]	39.9 (28.1-53.0)	57.1 (44.2-69.1)
College graduate	12.3 (6.6-21.6)	---[†]	---[†]	40.6 (30.2-52.0)	67.5 (57.0-76.5)

[a] Weighted percent and corresponding 95% CI for the 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] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who 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, 2012-2014 Combined	
	Used ≥ 1 Asthma Controller Medication in Past 3 Months[a]
Total	48.3 (40.6-56.0)
Age	
0-9 years	61.1 (48.3-72.6)
10-17 years	40.7 (32.1-49.8)
Gender	
Male	48.4 (38.6-58.4)
Female	47.7 (35.8-59.8)
Race	
White	47.6 (39.3-56.1)
Black	---[†]
Household Income	
< $50,000	50.4 (37.9-62.8)
≥ $50,000	49.8 (40.6-59.0)
Education of BRFS respondent	
≤ HS graduate	46.5 (30.0-63.8)
Some college	45.9 (33.9-58.3)
College graduate	51.4 (40.4-62.3)

[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. Statistics presented are weighted percents and their corresponding 95% CI's.

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

	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]
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, 2012-2014 Combined				
Total	1.4 (0.5-3.8) ˜	1.8 (0.7-4.6) ˜	6.5 (3.4-12.0) ˜	7.7 (4.4-13.2)
Age				
0-9 years	---†	---†	---†	---†
10-17 years	---†	---†	5.7 (2.7-11.8) ˜	6.8 (3.5-12.8) ˜
Gender				
Male	---†	---†	7.5 (3.3-16.1) ˜	8.3 (3.9-16.7) ˜
Female	---†	---†	4.9 (1.8-12.6) ˜	6.8 (2.9-15.3) ˜
Race				
White	---†	---†	5.3 (2.5-11.1) ˜	5.9 (2.9-11.6) ˜
Black	---†	---†	---†	---†
Household Income				
< $50,000	---†	---†	12.6 (6.2-24.0) ˜	14.5 (7.6-26.0) ˜
≥ $50,000	---†	---†	---†	---†
Education of BRFS respondent				
≤ HS graduate	---†	---†	14.0 (5.0-33.5) ˜	17.9 (7.5-36.7) ˜
Some college	---†	---†	5.1 (1.9-13.0) ˜	5.6 (2.2-13.3) ˜
College graduate	---†	---†	---†	---†

[a] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who responded "yes" to at least one of the above 3 questions.

† 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, 2012-2014 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	78.5 (71.5-84.3)	87.7 (81.2-92.2)	45.9 (38.4-53.5)
Age			
0-9 years	70.6 (57.4-81.1)	88.5 (75.9-95.0) ˜	33.2 (22.3-46.4)
10-17 years	85.4 (77.8-90.8)	88.1 (80.0-93.1)	54.5 (44.7-64.0)
Gender			
Male	77.1 (66.7-85.0)	82.4 (72.6-89.3)	46.9 (37.2-56.9)
Female	80.6 (70.5-87.9)	96.0 (89.9-98.5) ˜	43.8 (33.1-55.2)
Race			
White	78.6 (70.4-85.1)	85.8 (78.1-91.1)	40.4 (32.5-48.9)
Black	---†	---†	---†
Household Income			
< $50,000	71.2 (58.0-81.5)	87.5 (75.2-94.2) ˜	49.1 (37.2-61.2)
≥ $50,000	82.6 (73.7-88.9)	86.4 (77.2-92.2)	40.2 (31.7-49.3)
Education of BRFS respondent			
≤ HS graduate	73.6 (55.0-86.4) ˜	83.9 (65.7-93.4) ˜	54.2 (37.1-70.3)
Some college	81.7 (67.4-90.6) ˜	88.3 (75.8-94.7) ˜	45.2 (33.2-57.7)
College graduate	78.7 (68.6-86.2)	89.6 (80.2-94.9) ˜	41.4 (31.6-51.9)

[a] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "......what to do during an asthma episode or attack?"

[c] Weighted percent and corresponding 95% CI for those who 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, 2012-2014 Combined**			
Total	51.9 (44.2-59.5)	12.6 (7.9-19.5)	60.3 (52.5-67.6)
Age			
0-9 years	44.4 (32.2-57.4)	11.3 (5.5-21.8) ˜	50.0 (37.6-62.4)
10-17 years	58.5 (48.7-67.7)	14.4 (7.9-24.8)	68.1 (58.1-76.7)
Gender			
Male	52.2 (42.1-62.1)	14.5 (7.9-25.0)	58.5 (48.3-68.0)
Female	51.8 (39.8-63.6)	9.8 (5.3-17.2)	62.9 (50.3-74.0)
Race			
White	49.1 (40.8-57.4)	10.3 (6.2-16.5)	57.3 (48.5-65.5)
Black	---†	---†	---†
Household Income			
< $50,000	44.1 (32.6-56.3)	10.9 (5.4-20.7) ˜	52.7 (40.4-64.6)
≥ $50,000	60.1 (50.4-69.0)	10.1 (6.1-16.3)	64.9 (55.1-73.6)
Education of BRFS respondent			
≤ HS graduate	53.9 (37.0-69.9)	18.8 (7.0-41.7) ˜	64.8 (47.3-79.0)
Some college	46.3 (34.2-58.9)	13.8 (7.3-24.6) ˜	54.3 (41.5-66.6)
College graduate	55.6 (44.1-66.4)	7.8 (4.3-13.9) ˜	62.9 (51.1-73.3)

[d] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who 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.

	Cigarettes Smoked in Home[a]	Mold Seen/Smelled in Home[b]	Saw Cockroaches in Home[c]	Saw Mice/Rat in Home[d]
Table 7. Prevalence of Asthma Triggers in Home Environment, among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Survey, 2012-2014 Combined				
Total	11.5 (7.1-18.2)	8.2 (5.2-12.6)	---†	4.0 (1.7-9.0) ˜
Age				
0-9 years	13.4 (6.0-27.3) ˜	5.5 (2.6-11.6) ˜	---†	---†
10-17 years	7.3 (4.1-12.6)	8.7 (5.0-14.8)	---†	---†
Gender				
Male	12.0 (6.1-22.5) ˜	9.6 (5.5-16.2)	---†	---†
Female	10.7 (5.8-19.0) ˜	6.1 (2.8-12.7) ˜	---†	8.1 (2.9-20.4) ˜
Race				
White	6.3 (3.4-11.5) ˜	9.3 (5.6-14.9)	---†	2.7 (1.2-5.9) ˜
Black	---†	---†	---†	---†
Household Income				
< $50,000	21.2 (12.2-34.2)	9.7 (5.0-18.0) ˜	---†	---†
≥ $50,000	---†	7.8 (4.1-14.2) ˜	---†	2.7 (1.0-6.7) ˜
Education of BRFS respondent				
≤ HS graduate	26.4 (13.3-45.8) ˜	10.1 (3.8-24.1) ˜	---†	---†
Some college	12.8 (6.2-24.4) ˜	5.5 (2.5-11.7) ˜	---†	---†
College graduate	---†	9.3 (5.0-16.8) ˜	---†	---†

[a] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "In the past week, has anyone smoked inside {his/her} home?"
[b] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "In the past 30 days, has anyone seen cockroaches inside {his/her} home?"
[d] Weighted percent and corresponding 95% CI for those who 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."
† 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.

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	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	64.4 (56.2-71.8)	44.3 (36.9-51.9)	12.3 (8.2-18.0)	3.9 (2.1-7.0) ~	53.0 (45.4-60.5)
Age					
0-9 years	57.7 (44.7-69.8)	36.8 (25.3-50.1)	9.8 (4.0-22.4) ~	---†	58.2 (45.7-69.7)
10-17 years	67.4 (56.6-76.6)	48.5 (39.2-57.8)	14.5 (9.6-21.2)	4.6 (2.2-9.1) ~	50.0 (40.3-59.7)
Gender					
Male	57.9 (47.4-67.7)	39.2 (30.0-49.1)	9.9 (5.5-17.1)	---†	49.1 (39.3-59.1)
Female	74.3 (61.7-83.9)	51.9 (40.5-63.1)	16.1 (9.1-26.8)	5.7 (2.6-11.7) ~	59.4 (48.0-69.9)
Race					
White	70.5 (62.0-77.7)	50.5 (42.4-58.5)	12.1 (7.6-18.8)	4.8 (2.5-9.1) ~	53.4 (45.0-61.7)
Black	---†	---†	---†	---†	47.2 (26.2-69.3)
Household Income					
< $50,000	62.5 (49.6-73.9)	43.2 (31.6-55.6)	11.3 (5.6-21.3) ~	4.4 (1.7-10.7) ~	62.6 (50.2-73.5)
≥ $50,000	69.4 (59.6-77.7)	47.0 (38.0-56.2)	14.8 (9.1-23.2)	3.6 (1.5-8.1) ~	45.7 (36.4-55.3)
Education of BRFS respondent					
≤ HS graduate	60.1 (41.0-76.6)	39.1 (23.9-56.7)	8.1 (3.1-19.6) ~	---†	61.1 (42.4-77.0)
Some college	71.2 (57.6-81.8)	46.7 (34.8-59.0)	12.8 (6.5-23.9) ~	5.5 (2.5-12.0) ~	51.7 (39.3-63.8)
College graduate	61.1 (49.5-71.6)	45.3 (34.5-56.5)	14.3 (8.0-24.3)	---†	49.2 (38.7-59.8)

Table 7 (continued). Prevalence of Asthma Triggers in Home Environment among Children Aged 0-17 Years with Current Asthma Michigan Asthma Call-Back Surveys, 2012-2014 Combined

[f] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "Is the pet allowed in {his/her} bedroom?" (Among all respondents.)

[h] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "Is a wood burning fireplace or wood burning stove used in {child's name} home?"

[i] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "Are unvented gas logs, unvented gas fireplaces, or unvented gas stoves used in {his/her} home?"

[j] Weighted percent and corresponding 95% CI for those who 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, 2012-2014 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	57.1 (49.3-64.5)	56.2 (48.3-63.7)	41.2 (33.7-49.2)	35.9 (29.0-43.4)
Age				
0-9 years	53.6 (40.8-66.0)	48.3 (36.0-60.8)	35.3 (24.3-48.1)	36.0 (25.0-48.8)
10-17 years	57.3 (47.8-66.2)	64.5 (55.1-72.8)	44.4 (35.0-54.3)	35.7 (27.3-45.2)
Gender				
Male	53.6 (43.6-63.4)	55.2 (44.9-65.0)	42.8 (33.2-53.0)	36.8 (27.9-46.6)
Female	62.2 (50.6-72.6)	57.4 (45.4-68.6)	39.0 (28.4-50.8)	34.1 (24.4-45.4)
Race				
White	54.0 (45.5-62.4)	62.2 (53.7-70.0)	39.9 (32.2-48.0)	33.5 (26.1-41.8)
Black	---†	---†	---†	---†
Household Income				
< $50,000	54.4 (41.6-66.5)	43.8 (32.2-56.2)	31.7 (20.9-44.9)	32.1 (21.5-44.9)
≥ $50,000	56.7 (47.1-65.9)	65.8 (55.9-74.5)	47.7 (38.4-57.2)	41.3 (32.1-51.3)
Education of BRFS respondent				
≤ HS graduate	72.6 (57.2-84.0)	39.4 (23.9-57.4)	39.5 (22.9-58.9)	27.2 (15.0-44.1)
Some college	53.5 (40.6-65.8)	64.2 (51.6-75.2)	37.4 (26.4-49.9)	32.9 (22.7-45.0)
College graduate	50.8 (40.3-61.2)	59.4 (47.8-70.0)	45.7 (34.8-57.1)	43.7 (33.3-54.8)

[a] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "In {child's name} bathroom, does {he/she} regularly use an exhaust fan that vents to the outside?"

[c] Weighted percent and corresponding 95% CI for those who responded "hot" to the question, "Are {his/her} sheets and pillowcases washed in cold, warm, or hot water?"

[d] Weighted percent and corresponding 95% CI for those who 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, 2012-2014 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	44.5 (36.9-52.4)	36.4 (29.3-44.2)	43.2 (35.8-60.9)	37.6 (30.7-45.0)
Age				
0-9 years	38.1 (27.1-50.6)	32.5 (21.7-45.6)	35.2 (24.3-47.9)	34.4 (23.8-46.8)
10-17 years	50.0 (40.4-59.6)	37.4 (28.6-47.2)	51.2 (41.5-60.7)	41.9 (32.8-51.5)
Gender				
Male	48.8 (39.0-58.8)	36.5 (27.0-47.1)	44.1 (34.5-54.1)	37.6 (28.9-47.3)
Female	37.5 (26.9-49.4)	36.0 (26.1-47.2)	41.3 (30.3-53.3)	37.1 (26.8-48.8)
Race				
White	41.7 (33.8-50.1)	35.4 (27.7-44.0)	42.4 (34.3-51.0)	42.4 (34.3-50.9)
Black	---[†]	---[†]	---[†]	---[†]
Household Income				
< $50,000	37.1 (26.0-49.8)	40.5 (29.2-53.0)	27.6 (18.4-39.2)	23.9 (15.8-34.5)
≥ $50,000	49.1 (39.7-58.5)	30.1 (22.1-39.5)	58.3 (48.4-67.6)	54.1 (44.4-63.5)
Education of BRFS respondent				
≤ HS graduate	39.6 (23.8-58.0)	45.8 (28.9-63.8)	37.4 (22.0-55.7)	27.1 (15.4-43.2)
Some college	41.7 (30.2-54.1)	37.2 (25.8-50.3)	44.1 (32.6-56.3)	41.8 (30.3-54.3)
College graduate	50.0 (38.8-61.2)	30.0 (21.3-40.4)	45.9 (35.0-57.2)	40.3 (29.9-51.7)

[e] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "Is a dehumidifier regularly used to reduce moisture inside {his/her} home?"

[f] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "Does {he/she} use a mattress cover that is made especially for controlling dust mites?"

[h] Weighted percent and corresponding 95% CI for those who 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, 2012-2014 Combined	
	Ever Advised to Modify Environment to Improve Asthma[a]
Total	43.0 (35.4-50.9)
Age	
0-9 years	35.9 (24.4-49.2)
10-17 years	49.3 (39.7-59.0)
Gender	
Male	45.7 (35.9-56.0)
Female	38.9 (28.1-50.9)
Race	
White	40.1 (32.1-48.7)
Black	---[†]
Household Income	
< $50,000	31.6 (21.4-44.1)
≥ $50,000	52.3 (42.6-61.8)
Education of BRFS respondent	
≤ HS graduate	54.0 (36.9-70.1)
Some college	41.7 (30.2-54.2)
College graduate	37.3 (27.2-48.7)
[a] Weighted percent and corresponding 95% CI for those who responded "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, 2012-2014 Combined			
	None	**1-5 Days**	**≥6 Days**
Total	57.3 (49.2-65.0)	28.0 (21.2-35.9)	14.8 (10.0-21.3)
Age			
0-9 years	47.1 (34.1-60.5)	33.2 (22.2-46.4)	19.7 (10.8-33.2)
10-17 years	61.7 (51.5-70.9)	25.8 (17.6-36.3)	12.5 (7.8-19.5)
Gender			
Male	49.4 (39.0-59.8)	31.7 (22.6-42.5)	18.9 (12.0-28.5)
Female	68.8 (56.3-79.2)	22.1 (13.4-34.4)	9.0 (4.1-18.6) ~
Race			
White	59.5 (50.5-67.9)	26.2 (19.1-34.7)	14.4 (9.2-21.8)
Black	---[†]	---[†]	---[†]
Household Income			
< $50,000	54.3 (41.0-67.0)	29.2 (19.0-42.0)	16.6 (8.8-29.1) ~
≥ $50,000	61.8 (51.6-71.0)	24.6 (17.0-34.3)	13.6 (8.2-21.7)
Education of BRFS respondent			
≤ HS graduate	43.8 (26.8-62.5)	40.4 (23.8-59.5)	15.8 (6.8-32.3) ~
Some college	56.2 (43.0-68.5)	27.1 (17.3-39.9)	16.7 (8.8-29.4) ~
College graduate	65.2 (53.5-75.3)	22.0 (13.7-33.4)	12.8 (6.9-22.4)

[a] Weighted percent and corresponding 95% CI for responses 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%.
~ This estimate should be used with caution due to its low reliability and precision.

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	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, 2012-2014 Combined**				
Total	39.4 (32.3-47.1)	57.2 (49.1-64.9)	3.0 (1.4-6.6) ˜	---†
Age				
0-9 years	42.0 (29.6-55.4)	34.6 (22.4-49.3)	4.3 (1.7-10.6) ˜	---†
10-17 years	38.6 (30.0-48.0)	71.6 (61.7-79.7)	---†	---†
Gender				
Male	39.0 (29.6-49.3)	55.2 (44.3-65.5)	---†	---†
Female	39.7 (29.2-51.1)	60.5 (48.0-71.8)	4.4 (1.8-10.4) ˜	---†
Race				
White	34.4 (27.0-42.7)	53.1 (44.3-61.8)	3.5 (1.5-8.2) ˜	---†
Black	---†	---†	---†	---†
Household Income				
< $50,000	43.1 (30.6-56.4)	55.5 (41.6-68.6)	---†	---†
≥ $50,000	41.2 (32.0-51.0)	55.1 (44.9-64.8)	4.6 (1.9-10.8) ˜	---†
Education of BRFS respondent				
≤ HS graduate	---†	---†	---†	---†
Some college	46.0 (33.5-59.1)	56.2 (42.7-68.8)	---†	---†
College graduate	34.4 (25.2-45.0)	59.5 (48.3-69.9)	---†	---†

[a] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "Does {child's name} have a written asthma action plan or asthma management plan on file at school?"
[b] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who 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] Weighted percent and corresponding 95% CI for those who responded "yes" to the question, "Are you aware of any mold problems in {child's name} school?"
† 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.