

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

Standard Tables

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August 2011*

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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 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 adults from the 2005-2009 Michigan Asthma Call-Back Surveys combined. The total 5-year sample size of completed interviews for adults was 3,200, with 867 from 2005, 422 from 2006, 551 from 2007, 691 from 2008, and 669 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 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=2,363). 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 you had asthma?” and “Do you still have asthma?”

| Table 1. Prevalence of Asthma Symptoms, Among Adults 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 | 2,363 | 38.1 (35.2-41.1) | 25.3 (22.8-27.9) | 59.6 (56.4-62.8) |
| Age in years | | | | |
| 18-34 | 271 | 26.6 (20.6-33.6) | 19.8 (14.6-26.2) | 54.0 (46.3-61.6) |
| 35-64 | 1,460 | 42.9 (39.7-46.1) | 28.5 (25.6-31.5) | 63.4 (60.3-66.5) |
| ≥ 65 | 625 | 48.0 (43.2-52.9) | 26.6 (22.6-31.2) | 59.1 (54.4-63.7) |
| Sex | | | | |
| Male | 602 | 38.7 (33.2-44.5) | 23.9 (19.3-29.1) | 52.5 (46.4-58.5) |
| Female | 1,761 | 37.8 (34.6-41.1) | 26.1 (23.3-29.1) | 63.9 (60.3-67.3) |
| Race | | | | |
| White | 1,929 | 37.9 (34.8-41.1) | 23.4 (20.8-26.2) | 58.5 (55.1-61.9) |
| Black | 291 | 34.3 (26.1-43.5) | 35.2 (26.5-44.9) | 61.6 (51.7-70.6) |
| Household income | | | | |
| < \$20,000 | 544 | 52.9 (46.0-59.7) | 41.7 (35.2-48.5) | 76.8 (70.4-82.1) |
| \$20,000-34,999 | 473 | 36.2 (30.1-42.7) | 28.9 (23.2-35.3) | 69.5 (62.4-75.7) |
| \$35,000-49,999 | 282 | 34.9 (28.0-42.4) | 24.4 (18.6-31.3) | 55.3 (47.0-63.2) |
| \$50,000-74,999 | 343 | 32.0 (25.2-39.8) | 16.1 (11.3-22.5) | 55.1 (47.0-62.9) |
| ≥ \$75,000 | 436 | 30.9 (25.6-36.7) | 16.6 (12.7-21.5) | 48.0 (41.9-54.1) |
| Education | | | | |
| < HS graduate | 185 | 43.0 (31.7-55.0) | 41.3 (29.5-54.3) | 72.9 (59.8-83.0) |
| HS graduate | 671 | 44.4 (38.7-50.2) | 29.0 (24.4-34.0) | 60.0 (54.1-65.8) |
| Some college | 774 | 37.5 (32.4-42.9) | 23.5 (19.3-28.2) | 62.8 (56.9-68.4) |
| College graduate | 730 | 31.7 (27.2-36.6) | 20.0 (16.2-24.3) | 52.2 (47.1-57.3) |
| Year of survey | | | | |
| 2005 | 642 | 39.3 (34.5-44.3) | 26.7 (22.5-31.4) | 65.1 (60.1-69.7) |
| 2006 | 322 | 32.2 (26.2-38.9) | 24.6 (19.3-30.8) | 61.7 (54.6-68.3) |
| 2007 | 401 | 44.5 (37.1-52.2) | 26.0 (20.1-32.8) | 57.3 (49.6-64.7) |
| 2008 | 518 | 33.7 (27.7-40.2) | 25.6 (19.8-32.5) | 51.4 (43.6-59.0) |
| 2009 | 480 | 40.7 (34.0-47.6) | 23.5 (18.5-29.3) | 63.2 (55.8-69.9) |

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

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

^cReported ≥ 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?”

^dReported “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?”

| Table 2. Percent Distribution of Number of Asthma Symptom-Free Days^a in Past 2 Weeks, Among Adults with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined | | | | |
|---|------------------|------------------|------------------|------------------|
| | None | 1-6 Days | 7-13 Days | 14 Days |
| Total | 22.0 (19.8-24.3) | 15.5 (13.3-17.9) | 25.3 (22.5-28.3) | 37.3 (34.2-40.4) |
| Age in years | | | | |
| 18-34 | 11.3 (7.5-16.7) | 13.6 (9.2-19.6) | 31.7 (24.9-39.4) | 43.4 (35.9-51.2) |
| 35-64 | 25.1 (22.5-27.9) | 17.1 (14.5-19.9) | 23.6 (21.0-26.3) | 34.3 (31.3-37.4) |
| ≥ 65 | 35.7 (31.3-40.4) | 14.0 (11.0-17.8) | 16.5 (13.3-20.3) | 33.8 (29.3-38.5) |
| Sex | | | | |
| Male | 19.5 (15.7-23.9) | 17.9 (13.9-22.9) | 25.4 (20.1-31.4) | 37.3 (31.6-43.2) |
| Female | 23.5 (20.9-26.2) | 14.0 (11.7-16.6) | 25.2 (22.2-28.5) | 37.3 (33.8-40.9) |
| Race | | | | |
| White | 22.5 (20.0-25.1) | 14.8 (12.6-17.5) | 25.6 (22.6-28.8) | 37.1 (33.9-40.5) |
| Black | 17.2 (12.0-24.0) | 15.2 (10.1-22.3) | 24.9 (17.2-34.5) | 42.7 (32.9-53.1) |
| Household income | | | | |
| < \$20,000 | 34.4 (28.8-40.4) | 21.9 (16.4-28.6) | 15.2 (11.2-20.2) | 28.5 (22.5-35.5) |
| \$20,000-34,999 | 19.7 (15.7-24.4) | 17.2 (12.7-22.9) | 25.2 (19.6-31.8) | 38.0 (30.7-45.8) |
| \$35,000-49,999 | 23.1 (17.9-29.3) | 12.1 (7.9-18.0) | 30.8 (23.5-39.3) | 33.9 (26.6-42.2) |
| \$50,000-74,999 | 15.6 (11.5-20.8) | 12.8 (8.6-18.7) | 26.4 (19.6-34.6) | 45.1 (37.3-53.2) |
| ≥ \$75,000 | 16.3 (12.2-21.4) | 10.9 (7.6-15.2) | 28.1 (23.2-33.7) | 44.8 (38.7-50.9) |
| Education | | | | |
| < HS graduate | 25.4 (18.0-34.6) | 17.9 (9.5-31.0) | 20.1 (12.3-31.1) | 36.7 (24.1-51.3) |
| HS graduate | 27.0 (22.5-32.2) | 18.9 (14.6-24.2) | 21.1 (16.9-26.0) | 32.9 (27.7-38.6) |
| Some college | 21.7 (18.0-25.9) | 14.6 (11.2-18.8) | 27.9 (22.6-33.9) | 35.9 (30.5-41.6) |
| College graduate | 16.8 (13.8-20.3) | 12.8 (9.8-16.5) | 27.4 (22.9-32.5) | 43.0 (37.9-48.2) |
| Year of survey | | | | |
| 2005 | 20.0 (16.6-23.9) | 15.8 (12.4-19.9) | 28.5 (23.8-33.6) | 35.7 (31.0-40.7) |
| 2006 | 23.3 (18.2-29.2) | 14.8 (10.1-21.1) | 24.5 (18.8-31.2) | 37.5 (31.0-44.5) |
| 2007 | 22.9 (17.6-29.2) | 19.8 (14.2-27.0) | 20.3 (14.8-27.1) | 37.0 (29.8-44.9) |
| 2008 | 21.3 (16.9-26.6) | 16.1 (11.3-22.3) | 27.8 (20.7-36.1) | 34.8 (27.8-42.6) |
| 2009 | 22.3 (17.6-27.7) | 10.9 (7.8-15.0) | 25.7 (19.7-32.9) | 41.2 (34.1-48.7) |

^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?”

**Table 3. Prevalence of Asthma-Related Health Care Utilization in the Past 12 Months, Among Adults with Current Asthma
Michigan Asthma Call-Back Survey, 2005-2009 Combined**

| | ER/Urgent Care Visits for Asthma ^a | | ≥ 1 Hospital Stays for Asthma ^b | ≥ 2 Routine Asthma Care Visits ^c | Received Flu Vaccine ^d |
|-------------------------|---|------------------|--|---|-----------------------------------|
| | ≥ 1 Visit | ≥ 2 Visits | | | |
| Total | 12.2 (10.5-14.2) | 5.4 (4.3-6.7) | 3.5 (2.8-4.4) | 31.6 (28.9-34.4) | 44.9 (41.9-47.9) |
| Age in years | | | | | |
| 18-34 | 12.9 (9.1-18.0) | 5.0 (3.0-8.1) | 1.4 (0.6-3.0) | 21.8 (16.3-28.6) | 27.9 (21.4-35.6) |
| 35-64 | 11.9 (10.1-14.1) | 5.7 (4.4-7.4) | 4.1 (3.1-5.5) | 34.2 (31.3-37.3) | 46.4 (43.2-49.6) |
| ≥ 65 | 11.6 (8.9-14.9) | 5.2 (3.3-8.0) | 6.1 (4.3-8.5) | 45.3 (40.6-50.0) | 78.2 (74.2-81.7) |
| Sex | | | | | |
| Male | 8.0 (5.8-10.9) | 3.0 (1.8-5.0) | 2.8 (1.8-4.4) | 28.5 (23.7-33.8) | 46.7 (40.9-52.6) |
| Female | 14.7 (12.4-17.4) | 6.8 (5.3-8.6) | 3.9 (3.0-5.1) | 33.4 (30.3-36.6) | 43.8 (40.5-47.2) |
| Race | | | | | |
| White | 10.2 (8.4-12.3) | 3.9 (2.9-5.0) | 2.6 (2.0-3.5) | 29.7 (26.9-32.7) | 47.6 (44.3-50.9) |
| Black | 25.7 (18.7-34.3) | 15.9 (10.4-23.5) | 9.0 (5.7-14.1) | 41.8 (32.4-51.8) | 29.8 (22.6-38.1) |
| Household income | | | | | |
| < \$20,000 | 18.9 (14.7-23.9) | 9.6 (6.7-13.6) | 8.3 (6.0-11.4) | 39.2 (33.4-45.4) | 42.6 (36.5-48.9) |
| \$20,000-34,999 | 12.8 (9.0-17.8) | 8.2 (5.1-13.1) | 3.2 (1.8-5.7) | 35.4 (28.8-42.6) | 43.0 (36.3-50.0) |
| \$35,000-49,999 | 9.1 (5.3-15.3) | 2.7 (1.3-5.3) | 1.7 (0.7-3.9) | 31.2 (24.4-38.8) | 45.2 (37.5-53.2) |
| \$50,000-74,999 | 11.2 (7.5-16.3) | 3.2 (1.8-5.8) | 2.7 (1.4-4.9) | 29.3 (22.8-36.8) | 45.5 (38.2-53.1) |
| ≥ \$75,000 | 9.9 (6.5-15.0) | 2.6 (1.4-4.9) | 1.4 (0.5-3.7) | 28.8 (23.5-34.8) | 49.4 (43.4-55.5) |
| Education | | | | | |
| < HS graduate | 17.1 (10.0-27.6) | 9.4 (5.2-16.4) | 6.8 (3.6-12.2) | 42.2 (30.1-55.4) | 45.8 (34.3-57.8) |
| HS graduate | 13.6 (10.6-17.3) | 6.8 (4.7-9.8) | 4.2 (3.0-6.1) | 35.6 (30.5-41.0) | 45.2 (39.7-50.9) |
| Some college | 11.7 (8.7-15.5) | 4.9 (3.3-7.2) | 3.2 (2.1-4.9) | 30.8 (26.2-35.9) | 40.3 (34.9-45.9) |
| College graduate | 10.4 (7.8-13.8) | 3.6 (2.2-6.0) | 2.3 (1.3-4.0) | 26.3 (22.4-30.6) | 49.7 (44.6-54.8) |
| Year of survey | | | | | |
| 2005 | 15.9 (12.0-20.7) | 7.3 (4.7-11.2) | 4.5 (2.8-7.0) | 32.2 (27.6-37.1) | 32.4 (28.2-36.9) |
| 2006 | 12.0 (8.1-17.5) | 6.0 (3.7-9.6) | 3.0 (1.7-5.2) | 34.2 (28.1-40.9) | 47.4 (40.7-54.3) |
| 2007 | 10.0 (7.0-14.1) | 4.6 (2.9-7.3) | 3.4 (2.0-5.7) | 35.0 (27.9-42.7) | 48.2 (40.9-55.6) |
| 2008 | 10.6 (7.3-15.3) | 4.1 (2.3-7.2) | 2.2 (1.4-3.6) | 26.8 (21.6-32.7) | 50.8 (43.2-58.4) |
| 2009 | 12.9 (9.2-17.6) | 5.1 (3.0-8.3) | 4.4 (2.7-7.1) | 29.6 (24.3-35.5) | 45.0 (38.3-52.0) |

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

^bResponded at least one time to the question, “During the past 12 months, how many different times did you stay in any hospital overnight or longer because of your asthma?”

^cReported ≥ 2 times to the 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?”

^dResponded “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.”

| Table 4. Prevalence of Any Asthma Control Medication Use in Past 3 Months, Among Adults with Current Asthma | |
|--|--|
| Michigan Asthma Call-Back Survey, 2005-2009 Combined | |
| | Used \geq 1 Asthma Control Medication in Past 3 Months^a |
| Total | 44.4 (41.4-47.5) |
| Age in years | |
| 18-34 | 30.8 (24.0-38.5) |
| 35-64 | 48.8 (45.6-52.0) |
| \geq 65 | 60.3 (55.6-64.8) |
| Sex | |
| Male | 42.2 (36.5-48.2) |
| Female | 45.7 (42.3-49.2) |
| Race | |
| White | 45.6 (42.3-48.9) |
| Black | 39.0 (29.9-48.9) |
| Household income | |
| < \$20,000 | 45.4 (39.0-51.9) |
| \$20,000-34,999 | 42.5 (35.7-49.6) |
| \$35,000-49,999 | 42.9 (35.4-50.7) |
| \$50,000-74,999 | 44.8 (37.2-52.6) |
| \geq \$75,000 | 45.9 (40.0-51.9) |
| Education | |
| < HS graduate | 44.0 (31.8-57.0) |
| HS graduate | 41.3 (36.2-46.7) |
| Some college | 46.0 (40.4-51.7) |
| College graduate | 45.4 (40.5-50.5) |
| Year of survey | |
| 2005 | 44.0 (39.1-49.0) |
| 2006 | 44.6 (38.0-51.4) |
| 2007 | 43.3 (35.9-50.9) |
| 2008 | 44.5 (37.1-52.2) |
| 2009 | 45.9 (39.0-52.8) |

^aRespondent 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.

| Table 5. Prevalence of Comorbid Conditions, Among Adults with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined | | |
|---|---|---|
| | Ever Diagnosed with COPD, Emphysema, or Chronic Bronchitis^a | Ever Diagnosed with Depression^b |
| Total | 32.9 (30.3-35.6) | 33.3 (30.4-36.2) |
| Age in years | | |
| 18-34 | 15.2 (10.9-20.7) | 30.8 (24.3-38.2) |
| 35-64 | 38.7 (35.6-41.8) | 37.4 (34.4-40.5) |
| ≥ 65 | 53.1 (48.4-57.9) | 24.1 (20.5-28.0) |
| Sex | | |
| Male | 28.3 (24.0-33.2) | 24.9 (19.9-30.6) |
| Female | 35.6 (32.5-38.8) | 38.3 (35.0-41.6) |
| Race | | |
| White | 32.5 (29.7-35.5) | 33.4 (30.3-36.7) |
| Black | 32.7 (24.9-41.5) | 28.8 (21.4-37.7) |
| Household income | | |
| < \$20,000 | 49.7 (43.0-56.3) | 48.3 (41.8-55.0) |
| \$20,000-34,999 | 40.6 (34.0-47.7) | 34.5 (28.6-41.0) |
| \$35,000-49,999 | 35.3 (28.6-42.7) | 30.6 (23.8-38.5) |
| \$50,000-74,999 | 25.0 (19.7-31.1) | 26.6 (20.8-33.3) |
| ≥ \$75,000 | 23.0 (18.2-28.7) | 21.8 (17.3-27.1) |
| Education | | |
| < HS graduate | 43.4 (31.7-55.9) | 38.4 (27.8-50.3) |
| HS graduate | 40.7 (35.5-46.1) | 36.8 (31.5-42.4) |
| Some college | 33.2 (28.6-38.2) | 35.0 (29.7-40.6) |
| College graduate | 22.4 (18.9-26.3) | 26.8 (22.8-31.1) |
| Year of survey | | |
| 2005 | 37.6 (32.9-42.5) | 35.8 (31.1-40.7) |
| 2006 | 36.2 (30.0-42.9) | 31.1 (25.0-37.9) |
| 2007 | 29.4 (23.9-35.6) | 30.2 (24.1-37.1) |
| 2008 | 29.4 (24.0-35.5) | 32.3 (25.4-40.1) |
| 2009 | 32.3 (26.6-38.6) | 37.2 (30.8-44.1) |
| ^a 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?” ^b Replied “yes” to the following question, “Have you ever been told by a doctor or other health professional that you were depressed?” | | |

**Table 6. Prevalence of Experiencing Cost Barriers to Asthma Care in Past 12 Months, Among Adults 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 | 10.3 (8.6-12.2) | 4.3 (3.2-5.8) | 15.3 (13.2-17.7) | 19.6 (17.2-22.2) |
| Age in years | | | | |
| 18-34 | 10.8 (7.3-15.7) | 3.5 (1.5-8.0) | 17.8 (13.0-23.9) | 21.4 (16.0-28.0) |
| 35-64 | 12.2 (10.1-14.5) | 5.6 (4.2-7.4) | 15.9 (13.7-18.4) | 21.3 (18.8-24.1) |
| ≥ 65 | 2.3 (1.3-3.8) | 1.5 (0.8-2.8) | 7.2 (5.2-9.9) | 8.6 (6.4-11.4) |
| Sex | | | | |
| Male | 8.0 (5.4-11.8) | 3.9 (1.9-7.7) | 13.0 (9.3-17.8) | 18.7 (14.3-24.1) |
| Female | 11.6 (9.6-14.0) | 4.5 (3.4-6.1) | 16.7 (14.3-19.4) | 20.0 (17.5-22.9) |
| Race | | | | |
| White | 8.7 (7.1-10.7) | 3.6 (2.5-5.3) | 14.0 (11.7-16.6) | 17.6 (15.1-20.4) |
| Black | 18.4 (11.8-27.4) | 9.6 (5.5-16.1) | 19.4 (13.5-27.1) | 27.2 (19.6-36.4) |
| Household income | | | | |
| < \$20,000 | 20.3 (15.5-26.1) | 12.2 (7.9-18.4) | 29.2 (23.7-35.4) | 36.5 (30.3-43.3) |
| \$20,000-34,999 | 16.1 (11.8-21.6) | 5.4 (3.2-8.9) | 23.6 (18.1-30.2) | 28.9 (23.0-35.7) |
| \$35,000-49,999 | 11.2 (6.7-18.2) | 2.6 (1.1-6.1) | 19.0 (13.3-26.5) | 22.3 (16.2-29.8) |
| \$50,000-74,999 | 4.3 (2.5-7.4) | 1.0 (0.3-2.8) | 5.9 (3.6-9.5) | 7.7 (5.1-11.5) |
| ≥ \$75,000 | 1.3 (0.5-3.2) | 0.5 (0.1-3.3) | 2.2 (0.8-5.6) | 3.3 (1.6-6.7) |
| Education | | | | |
| < HS graduate | 13.2 (7.8-21.4) | 13.3 (6.0-27.0) | 24.3 (15.3-36.2) | 31.3 (20.4-44.8) |
| HS graduate | 11.2 (8.3-14.9) | 5.9 (3.8-9.0) | 15.7 (11.9-20.5) | 21.8 (17.4-27.0) |
| Some college | 12.7 (9.4-16.8) | 3.3 (1.9-5.6) | 17.3 (13.6-21.8) | 22.0 (17.9-26.9) |
| College graduate | 5.8 (3.8-8.7) | 1.8 (0.8-3.9) | 10.2 (7.6-13.6) | 11.4 (8.6-14.8) |
| Year of survey | | | | |
| 2005 | 9.6 (7.0-13.1) | 4.2 (2.5-6.9) | 18.2 (14.4-22.8) | 22.0 (17.8-26.8) |
| 2006 | 11.1 (7.5-16.0) | 3.6 (1.7-7.2) | 12.8 (9.0-18.0) | 16.8 (12.5-22.3) |
| 2007 | 12.5 (8.3-18.4) | 3.3 (1.9-5.8) | 13.9 (9.2-20.4) | 19.4 (13.9-26.5) |
| 2008 | 5.1 (3.4-7.6) | 3.5 (1.6-7.6) | 13.3 (9.3-18.7) | 15.2 (11.0-20.7) |
| 2009 | 13.0 (8.9-18.6) | 6.9 (3.6-12.9) | 18.4 (13.5-24.6) | 24.3 (18.5-31.3) |
| ^a Responded “yes” to, “Was there a time in the past 12 months when you needed to see your primary care doctor for your asthma but could not because of the cost?” ^b Responded “yes” to, “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?” ^c Responded “yes” to, “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?” ^d Responded “yes” to at least one of the above 3 questions. | | | | |

| Table 7. Prevalence of Knowledge Indicators Related to Asthma Management, Among Adults 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 Peak Flow Meter^c |
| Total | 63.8 (60.7-66.7) | 76.1 (73.1-78.8) | 42.3 (39.3-45.5) |
| Age in years | | | |
| 18-34 | 68.6 (60.8-75.4) | 75.3 (67.4-81.8) | 46.1 (38.6-53.8) |
| 35-64 | 65.3 (62.2-68.4) | 80.3 (77.5-82.9) | 42.7 (39.6-45.9) |
| ≥ 65 | 46.5 (41.8-51.3) | 62.0 (57.2-66.5) | 32.1 (27.7-36.9) |
| Sex | | | |
| Male | 61.7 (55.6-67.4) | 71.1 (64.7-76.7) | 37.0 (31.3-43.0) |
| Female | 65.0 (61.8-68.2) | 79.0 (76.1-81.6) | 45.5 (42.0-49.1) |
| Race | | | |
| White | 63.2 (59.8-66.5) | 75.7 (72.3-78.7) | 40.2 (36.9-43.6) |
| Black | 70.8 (62.6-77.8) | 82.9 (75.9-88.2) | 57.7 (47.8-67.1) |
| Household income | | | |
| < \$20,000 | 58.1 (51.4-64.5) | 70.1 (62.8-76.5) | 41.2 (35.0-47.7) |
| \$20,000-34,999 | 55.5 (48.5-62.2) | 73.3 (66.6-78.9) | 44.4 (37.3-51.7) |
| \$35,000-49,999 | 63.5 (55.8-70.6) | 73.8 (66.3-80.0) | 43.6 (35.7-51.9) |
| \$50,000-74,999 | 73.6 (66.7-79.5) | 84.0 (78.0-88.5) | 42.6 (35.1-50.4) |
| ≥ \$75,000 | 72.1 (66.4-77.2) | 84.9 (80.0-88.8) | 42.5 (36.6-48.6) |
| Education | | | |
| < HS graduate | 49.9 (37.3-62.6) | 61.3 (47.4-73.6) | 31.9 (22.4-43.0) |
| HS graduate | 56.8 (51.0-62.5) | 69.9 (64.0-75.2) | 40.9 (35.5-46.5) |
| Some college | 69.4 (63.8-74.4) | 80.3 (74.9-84.8) | 47.3 (41.6-53.1) |
| College graduate | 67.0 (62.2-71.6) | 80.4 (76.1-84.1) | 40.4 (35.5-45.5) |
| Year of survey | | | |
| 2005 | 63.9 (59.0-68.5) | 78.1 (73.8-81.8) | 41.6 (36.7-46.8) |
| 2006 | 67.3 (60.4-73.5) | 78.6 (71.9-84.2) | 47.1 (40.2-54.2) |
| 2007 | 73.1 (66.2-79.0) | 80.3 (73.8-85.4) | 48.2 (40.6-55.9) |
| 2008 | 57.6 (49.8-64.9) | 70.0 (61.5-77.4) | 37.4 (30.1-45.2) |
| 2009 | 56.8 (49.5-63.8) | 73.3 (65.9-79.6) | 37.3 (30.8-44.2) |
| ^a 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?" ^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 your daily medications?" | | | |

| Table 7 (continued). Prevalence of Knowledge Indicators Related to Asthma Management, Among Adults 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 | 25.0 (22.6-27.7) | 7.3 (5.9-9.0) | 39.7 (36.7-42.7) |
| Age in years | | | |
| 18-34 | 23.4 (17.8-30.0) | 4.9 (2.4-9.7) | 41.4 (34.3-48.9) |
| 35-64 | 28.6 (25.8-31.5) | 8.5 (6.8-10.5) | 42.1 (38.9-45.2) |
| ≥ 65 | 15.9 (12.9-19.4) | 8.6 (6.4-11.5) | 27.0 (23.0-31.4) |
| Sex | | | |
| Male | 19.6 (15.6-24.3) | 8.1 (5.3-12.1) | 34.0 (28.8-39.7) |
| Female | 28.3 (25.3-31.5) | 6.9 (5.6-8.4) | 43.0 (39.6-46.5) |
| Race | | | |
| White | 23.7 (21.1-26.5) | 6.4 (5.0-8.1) | 37.2 (34.1-40.4) |
| Black | 33.3 (25.4-42.2) | 13.9 (8.5-22.0) | 52.8 (42.9-62.4) |
| Household income | | | |
| < \$20,000 | 23.4 (18.7-28.9) | 10.4 (6.3-16.6) | 37.0 (31.1-43.3) |
| \$20,000-34,999 | 26.7 (21.0-33.3) | 6.3 (4.2-9.4) | 39.5 (32.7-46.8) |
| \$35,000-49,999 | 27.9 (21.0-36.0) | 6.4 (4.0-10.2) | 38.7 (31.2-46.8) |
| \$50,000-74,999 | 27.6 (21.2-35.2) | 8.0 (4.9-12.9) | 44.3 (36.6-52.4) |
| ≥ \$75,000 | 27.8 (22.8-33.4) | 6.6 (4.4-9.9) | 45.1 (39.1-51.1) |
| Education | | | |
| < HS graduate | 24.7 (14.3-39.0) | 10.3 (3.9-24.7) | 34.4 (23.2-47.7) |
| HS graduate | 24.8 (20.5-29.7) | 7.0 (4.9-9.7) | 38.7 (33.5-44.2) |
| Some college | 26.2 (21.8-31.2) | 6.9 (4.8-9.9) | 41.9 (36.4-47.5) |
| College graduate | 24.0 (20.4-28.1) | 7.4 (5.2-10.4) | 39.4 (34.6-44.4) |
| Year of survey | | | |
| 2005 | 28.0 (23.5-32.9) | 8.1 (5.8-11.2) | 41.5 (36.5-46.7) |
| 2006 | 28.4 (22.5-35.1) | 5.9 (3.7-9.2) | 43.2 (36.5-50.2) |
| 2007 | 24.9 (18.8-32.0) | 9.6 (6.1-14.8) | 47.8 (40.3-55.5) |
| 2008 | 21.3 (16.5-27.0) | 3.5 (2.2-5.6) | 31.1 (25.3-37.5) |
| 2009 | 22.7 (18.1-28.1) | 9.5 (5.8-15.1) | 34.6 (28.4-41.3) |
| ^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 an asthma action plan?” ^e Responded “yes” to the question, “Have you ever taken a course or class on how to manage your asthma?” ^f Responded “yes” to ≥ 3 of the 5 questions above (b-f). | | | |

**Table 8. Prevalence of Asthma Triggers in Home Environment, Among Adults 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 | 23.8 (21.0-26.8) | 13.9 (12.0-16.1) | 1.1 (0.7-1.6) | 6.8 (5.1-9.1) |
| Age in years | | | | |
| 18-34 | 29.3 (22.6-37.0) | 13.7 (9.6-19.2) | 0 ^e | 8.7 (4.6-15.7) |
| 35-64 | 24.1 (21.4-27.0) | 15.3 (13.2-17.7) | 1.4 (0.9-2.2) | 6.6 (5.1-8.4) |
| ≥ 65 | 10.0 (7.4-13.4) | 9.6 (7.0-13.1) | 2.3 (1.1-4.9) | 3.6 (2.2-5.6) |
| Sex | | | | |
| Male | 28.0 (22.5-34.2) | 13.8 (10.3-18.2) | 1.1 (0.6-2.3) | 9.1 (5.4-15.2) |
| Female | 21.3 (18.6-24.3) | 14.0 (11.9-16.4) | 1.0 (0.7-1.6) | 5.4 (4.2-7.0) |
| Race | | | | |
| White | 21.4 (18.5-24.7) | 14.9 (12.8-17.4) | 0.6 (0.3-1.1) | 6.8 (4.8-9.5) |
| Black | 36.2 (27.5-46.0) | 10.4 (6.5-16.0) | 4.8 (2.8-7.9) | 9.0 (4.7-16.6) |
| Household income | | | | |
| < \$20,000 | 44.1 (37.7-50.8) | 18.9 (14.4-24.5) | 3.0 (1.8-5.0) | 6.8 (4.5-10.3) |
| \$20,000-34,999 | 25.3 (19.6-32.0) | 11.7 (8.2-16.4) | 0.7 (0.2-2.3) | 7.7 (4.9-11.9) |
| \$35,000-49,999 | 21.5 (15.6-28.8) | 15.1 (9.5-23.1) | 1.2 (0.3-4.1) | 6.9 (4.2-11.1) |
| \$50,000-74,999 | 18.4 (12.4-26.3) | 13.9 (9.8-19.3) | 0.9 (0.3-2.5) | 4.1 (2.3-7.2) |
| ≥ \$75,000 | 7.5 (4.2-13.0) | 11.2 (8.3-14.9) | 0.3 (0.0-2.4) | 3.5 (1.8-6.9) |
| Education | | | | |
| < HS graduate | 41.0 (29.6-53.3) | 6.8 (3.6-12.6) | 3.1 (1.5-6.2) | 6.7 (3.4-12.8) |
| HS graduate | 32.1 (26.8-37.9) | 12.9 (9.8-16.8) | 0.9 (0.5-1.8) | 8.7 (5.7-13.3) |
| Some college | 23.6 (18.7-29.3) | 15.2 (11.8-19.4) | 0.6 (0.3-1.4) | 6.6 (3.5-12.3) |
| College graduate | 12.1 (8.4-17.0) | 15.3 (11.9-19.3) | 1.3 (0.6-2.7) | 5.3 (3.2-8.7) |
| Year of survey | | | | |
| 2005 | 22.3 (18.2-26.9) | 13.3 (10.1-17.2) | 0.8 (0.3-2.0) | 5.9 (4.0-8.7) |
| 2006 | 21.4 (16.3-27.5) | 16.0 (11.7-21.6) | 1.8 (0.9-3.7) | 7.0 (4.2-11.5) |
| 2007 | 23.4 (17.5-30.6) | 14.2 (10.1-19.6) | 1.0 (0.5-2.0) | 6.9 (3.6-12.7) |
| 2008 | 25.7 (18.7-34.3) | 13.9 (9.9-19.1) | 1.5 (0.7-3.3) | 7.9 (3.2-18.2) |
| 2009 | 26.0 (19.8-33.4) | 12.3 (8.3-17.8) | 0.3 (0.1-0.7) | 6.3 (3.5-11.2) |

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

^bResponded “yes” to the question, “In the past 30 days, has anyone seen or smelled mold or a musty odor inside your home? Do not include mold on food.”

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

^dResponded “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.”

^eNo positive responses in this cell.

| Table 8 (continued). Prevalence of Asthma Triggers in Home Environment, Among Adults with Current Asthma | | | | | |
|--|--------------------------------|--|--|--|---|
| Michigan Asthma Call-Back Survey, 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 | 63.8 (60.8-66.6) | 46.6 (43.5-49.8) | 18.9 (16.5-21.5) | 11.0 (9.1-13.1) | 51.1 (48.0-54.3) |
| Age in years | | | | | |
| 18-34 | 71.6 (64.3-77.9) | 51.4 (43.8-59.0) | 18.4 (13.0-25.3) | 11.5 (7.5-17.1) | 49.8 (42.2-57.5) |
| 35-64 | 65.6 (62.6-68.5) | 48.4 (45.2-51.6) | 19.7 (17.3-22.3) | 11.3 (9.3-13.6) | 54.7 (51.5-57.8) |
| ≥ 65 | 39.1 (34.7-43.8) | 29.5 (25.5-34.0) | 16.8 (13.3-21.0) | 8.8 (6.3-12.1) | 41.6 (37.1-46.4) |
| Sex | | | | | |
| Male | 62.8 (57.2-68.2) | 42.9 (37.1-48.9) | 22.2 (17.6-27.6) | 15.1 (11.4-19.8) | 54.1 (48.1-59.9) |
| Female | 64.4 (61.0-67.5) | 48.9 (45.4-52.4) | 16.9 (14.4-19.8) | 8.5 (6.7-10.6) | 49.4 (45.9-52.9) |
| Race | | | | | |
| White | 68.9 (65.9-71.7) | 49.9 (46.5-53.2) | 19.6 (17.1-22.4) | 11.3 (9.3-13.6) | 49.8 (46.4-53.2) |
| Black | 30.8 (22.0-41.2) | 25.1 (16.7-36.0) | 16.8 (9.7-27.5) | 9.7 (4.9-18.3) | 57.4 (46.9-67.2) |
| Household income | | | | | |
| < \$20,000 | 58.9 (52.4-65.0) | 47.2 (40.6-53.9) | 10.3 (7.0-14.8) | 10.7 (6.5-17.0) | 53.4 (46.8-60.0) |
| \$20,000-34,999 | 61.5 (54.6-67.9) | 44.8 (37.8-52.0) | 18.2 (12.3-26.0) | 7.8 (5.0-11.9) | 52.0 (44.8-59.1) |
| \$35,000-49,999 | 60.9 (53.1-68.1) | 47.0 (39.0-55.1) | 19.0 (13.2-26.6) | 12.8 (8.2-19.3) | 50.4 (42.4-58.4) |
| \$50,000-74,999 | 65.2 (56.6-72.9) | 48.1 (40.3-56.0) | 20.2 (15.0-26.6) | 13.6 (9.0-20.1) | 47.7 (39.9-55.6) |
| ≥ \$75,000 | 68.7 (62.8-74.0) | 49.8 (43.7-55.8) | 26.6 (21.5-32.3) | 12.0 (8.8-16.2) | 47.1 (41.1-53.1) |
| Education | | | | | |
| < HS graduate | 54.9 (42.1-67.1) | 38.3 (27.1-50.9) | 11.7 (5.3-23.9) | 15.0 (7.3-28.2) | 62.1 (49.1-73.7) |
| HS graduate | 62.0 (56.7-67.1) | 43.3 (37.8-49.1) | 18.8 (14.2-24.3) | 9.4 (6.8-13.0) | 55.2 (49.5-60.8) |
| Some college | 65.3 (60.0-70.4) | 47.0 (41.3-52.8) | 15.2 (11.8-19.3) | 10.3 (7.2-14.4) | 52.0 (46.3-57.6) |
| College graduate | 66.0 (61.1-70.5) | 51.5 (46.3-56.5) | 25.1 (20.7-30.2) | 12.2 (9.3-16.0) | 43.7 (38.8-48.8) |
| Year of survey | | | | | |
| 2005 | 56.4 (51.3-61.4) | 42.0 (37.1-47.0) | 18.0 (14.6-21.9) | 15.5 (12.0-19.8) | 51.8 (46.7-56.8) |
| 2006 | 62.6 (55.8-68.9) | 44.3 (37.5-51.3) | 22.3 (16.4-29.4) | 13.5 (9.4-19.1) | 49.7 (42.8-56.6) |
| 2007 | 67.4 (60.0-74.0) | 49.2 (41.7-56.8) | 15.1 (10.6-21.2) | 10.9 (6.9-16.9) | 52.0 (44.3-59.6) |
| 2008 | 67.3 (60.8-73.2) | 49.7 (42.1-57.3) | 17.3 (12.5-23.4) | 7.2 (4.7-10.8) | 53.5 (46.0-60.9) |
| 2009 | 64.6 (57.6-71.1) | 47.7 (40.7-54.7) | 21.9 (16.3-28.8) | 8.0 (4.2-14.5) | 48.7 (41.7-55.8) |
| ^f Responded “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?” ^g Responded “yes” to the question, “Are pets allowed in your bedroom?” (Among all respondents.) ^h Responded “yes” to the question, “Is a wood burning fireplace or wood burning stove used in your home?” ⁱ Responded “yes” to the question, “Are unvented gas logs, unvented gas fireplaces, or unvented gas stoves used in your home?” ^j Responded “yes” to the question, “Is gas used for cooking?” | | | | | |

| Table 9. Prevalence of Asthma Trigger Avoidance Behaviors in Home Environment, Among Adults 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 | 49.8 (46.7-52.9) | 55.5 (52.3-58.6) | 34.8 (32.1-37.6) | 35.0 (32.2-37.9) |
| Age in years | | | | |
| 18-34 | 45.9 (38.4-53.6) | 50.4 (42.8-58.0) | 24.2 (18.8-30.7) | 30.5 (24.0-37.7) |
| 35-64 | 51.1 (47.9-54.3) | 58.0 (54.8-61.2) | 40.6 (37.6-43.8) | 35.8 (32.8-38.9) |
| ≥ 65 | 53.6 (48.9-58.3) | 57.8 (53.1-62.3) | 38.1 (33.6-42.8) | 42.1 (37.5-46.9) |
| Sex | | | | |
| Male | 45.3 (39.5-51.2) | 52.9 (46.8-58.8) | 27.9 (23.2-33.2) | 30.9 (25.9-36.4) |
| Female | 52.5 (48.9-56.0) | 57.0 (53.4-60.5) | 38.6 (35.4-41.9) | 37.4 (34.2-40.8) |
| Race | | | | |
| White | 48.3 (44.9-51.7) | 59.5 (56.0-62.8) | 34.3 (31.4-37.3) | 34.9 (31.9-38.1) |
| Black | 53.2 (43.4-62.8) | 25.5 (18.8-33.6) | 37.8 (29.2-47.2) | 31.8 (23.9-40.8) |
| Household income | | | | |
| < \$20,000 | 50.1 (43.4-56.7) | 46.5 (39.9-53.2) | 34.3 (28.7-40.4) | 28.1 (22.9-33.9) |
| \$20,000-34,999 | 46.7 (39.7-53.8) | 54.1 (46.8-61.2) | 35.9 (29.8-42.5) | 33.2 (26.8-40.2) |
| \$35,000-49,999 | 47.9 (40.0-56.0) | 65.6 (58.0-72.5) | 33.9 (27.2-41.4) | 38.2 (30.9-46.1) |
| \$50,000-74,999 | 50.4 (42.5-58.3) | 58.9 (50.8-66.5) | 37.5 (30.5-45.1) | 36.2 (29.0-44.0) |
| ≥ \$75,000 | 53.8 (47.7-59.8) | 65.8 (59.7-71.4) | 39.2 (33.4-45.4) | 39.4 (33.7-45.3) |
| Education | | | | |
| < HS graduate | 53.1 (40.4-65.4) | 45.4 (33.1-58.3) | 24.3 (16.9-33.7) | 40.2 (28.5-53.1) |
| HS graduate | 53.0 (47.3-58.7) | 55.7 (50.1-61.3) | 32.1 (27.4-37.2) | 33.7 (28.6-39.3) |
| Some college | 47.8 (42.2-53.5) | 54.7 (48.9-60.4) | 37.6 (32.5-42.8) | 35.1 (30.0-40.5) |
| College graduate | 48.1 (43.0-53.3) | 58.6 (53.2-63.7) | 36.7 (31.9-41.7) | 34.6 (30.2-39.2) |
| Year of survey | | | | |
| 2005 | 53.2 (48.1-58.2) | 53.5 (48.4-58.5) | 40.3 (35.5-45.3) | 38.2 (33.4-43.3) |
| 2006 | 50.1 (43.2-57.0) | 58.5 (51.5-65.1) | 39.7 (33.1-46.7) | 32.9 (27.0-39.4) |
| 2007 | 48.8 (41.2-56.4) | 52.0 (44.4-59.6) | 32.0 (25.8-38.9) | 40.2 (32.9-48.0) |
| 2008 | 44.8 (37.6-52.3) | 55.8 (47.7-63.5) | 31.3 (25.6-37.5) | 31.3 (25.3-38.1) |
| 2009 | 52.1 (44.9-59.2) | 57.6 (50.3-64.5) | 31.3 (25.5-37.8) | 32.3 (26.4-38.8) |
| ^a Responded “yes” to the question, “Is an exhaust fan that vents to the outside used regularly when cooking in your kitchen?” ^b Responded “yes” to the question, “In your bathroom, do you regularly use an exhaust fan that vents to the outside?” ^c Responded “hot” to the question, “Are your 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 your home?” | | | | |

| Table 9 (continued). Prevalence of Asthma Trigger Avoidance Behaviors in Home Environment, Among Adults with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined | | | | |
|---|--|--|--|--------------------------------------|
| | Dehumidifier Used Regularly in Home^e | No Carpeting in Bedroom^f | Uses Mattress Cover^g | Uses Pillow Cover^h |
| Total | 39.5 (36.6-42.6) | 29.5 (26.7-32.5) | 28.1 (25.6-30.8) | 29.2 (26.4-32.1) |
| Age in years | | | | |
| 18-34 | 33.4 (26.6-40.9) | 32.3 (25.6-39.8) | 22.9 (17.7-29.2) | 25.6 (19.4-33.0) |
| 35-64 | 41.8 (38.6-45.0) | 28.5 (25.6-31.5) | 31.1 (28.2-34.2) | 30.8 (27.9-33.9) |
| ≥ 65 | 45.2 (40.6-49.9) | 26.7 (22.6-31.3) | 29.1 (25.0-33.7) | 31.3 (27.2-35.8) |
| Sex | | | | |
| Male | 40.2 (34.6-46.1) | 32.5 (27.1-38.4) | 22.6 (18.4-27.4) | 21.5 (16.7-27.2) |
| Female | 39.1 (35.8-42.5) | 27.7 (24.7-31.0) | 31.3 (28.3-34.5) | 33.6 (30.5-37.0) |
| Race | | | | |
| White | 41.4 (38.1-44.7) | 27.8 (24.8-31.0) | 28.8 (26.0-31.8) | 29.8 (26.8-33.0) |
| Black | 28.4 (21.3-36.9) | 39.9 (30.7-50.0) | 25.0 (18.4-33.0) | 26.1 (18.3-35.8) |
| Household income | | | | |
| < \$20,000 | 23.4 (18.3-29.4) | 27.8 (22.3-34.2) | 21.9 (17.4-27.2) | 27.4 (22.0-33.6) |
| \$20,000-34,999 | 33.0 (26.7-40.0) | 31.1 (25.0-38.1) | 28.7 (23.0-35.2) | 30.4 (24.0-37.6) |
| \$35,000-49,999 | 42.4 (34.7-50.6) | 33.7 (26.1-42.3) | 29.0 (22.5-36.6) | 24.6 (18.6-31.8) |
| \$50,000-74,999 | 43.9 (36.2-51.8) | 30.6 (23.7-38.4) | 28.4 (22.5-35.2) | 24.3 (19.0-30.6) |
| ≥ \$75,000 | 53.5 (47.4-59.5) | 28.9 (23.4-35.1) | 34.7 (29.2-40.6) | 31.8 (26.6-37.5) |
| Education | | | | |
| < HS graduate | 35.5 (23.3-49.9) | 27.2 (17.8-39.3) | 15.5 (9.7-23.8) | 13.6 (8.5-21.1) |
| HS graduate | 37.2 (31.8-43.0) | 30.5 (25.1-36.4) | 26.0 (21.6-31.0) | 26.2 (21.7-31.3) |
| Some college | 35.3 (30.3-40.7) | 28.5 (23.6-33.9) | 28.8 (24.4-33.6) | 34.3 (28.9-40.1) |
| College graduate | 47.5 (42.5-52.6) | 30.4 (25.9-35.4) | 32.4 (27.9-37.3) | 29.6 (25.3-34.3) |
| Year of survey | | | | |
| 2005 | 39.2 (34.5-44.2) | 31.9 (27.2-37.0) | 27.6 (23.3-32.2) | 25.6 (21.5-30.2) |
| 2006 | 41.5 (34.9-48.4) | 31.9 (25.3-39.2) | 28.7 (23.1-35.2) | 30.2 (24.5-36.6) |
| 2007 | 44.7 (37.2-52.5) | 29.0 (22.2-37.0) | 27.4 (21.4-34.3) | 29.7 (23.1-37.3) |
| 2008 | 36.3 (29.8-43.4) | 26.4 (20.7-33.0) | 25.5 (20.4-31.3) | 28.8 (22.0-36.7) |
| 2009 | 35.8 (29.3-42.8) | 28.4 (22.7-35.0) | 31.2 (25.4-37.6) | 31.2 (25.4-37.6) |
| ^e Responded “yes” to the question, “Is a dehumidifier regularly used to reduce moisture inside your home?” ^f 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.” ^g Responded “yes” to the question, “Do you use a mattress cover that is made especially for controlling dust mites?” ^h Responded “yes” to the question, “Do you use a pillow cover that is made especially for controlling dust mites?” | | | | |

| Table 10. Prevalence of Ever Being Advised to Modify Environment to Improve Asthma, Among Adults with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined | |
|--|---|
| | Ever Advised to Modify Environment to Improve Asthma^a |
| Total | 46.2 (43.1-49.4) |
| Age in years | |
| 18-34 | 44.6 (37.2-52.2) |
| 35-64 | 51.6 (48.4-54.8) |
| ≥ 65 | 30.5 (26.4-35.0) |
| Sex | |
| Male | 39.9 (34.2-46.0) |
| Female | 49.9 (46.4-53.5) |
| Race | |
| White | 46.8 (43.5-50.2) |
| Black | 43.2 (34.1-52.8) |
| Household income | |
| < \$20,000 | 41.8 (35.6-48.3) |
| \$20,000-34,999 | 40.6 (33.8-47.8) |
| \$35,000-49,999 | 45.4 (37.5-53.5) |
| \$50,000-74,999 | 49.9 (42.0-57.8) |
| ≥ \$75,000 | 50.8 (44.7-56.8) |
| Education | |
| < HS graduate | 42.8 (30.4-56.2) |
| HS graduate | 36.4 (31.5-41.6) |
| Some college | 50.0 (44.3-55.7) |
| College graduate | 51.8 (46.7-56.9) |
| Year of survey | |
| 2005 | 42.3 (37.4-47.2) |
| 2006 | 47.9 (41.0-54.9) |
| 2007 | 45.9 (38.5-53.5) |
| 2008 | 47.2 (39.7-54.9) |
| 2009 | 47.6 (40.6-54.7) |
| ^a 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?” | |

| Table 11. Percent Distribution of Number Days Unable to Work or Carry Out Usual Activities Because of Asthma,^a Among Adults with Current Asthma | | | |
|---|------------------|------------------|------------------|
| Michigan Asthma Call-Back Survey, 2005-2009 Combined | | | |
| | None | 1-5 Days | ≥ 6 Days |
| Total | 68.3 (65.4-71.1) | 18.1 (15.8-20.7) | 13.6 (11.8-15.6) |
| Age in years | | | |
| 18-34 | 70.5 (63.2-76.8) | 21.1 (15.6-27.8) | 8.5 (5.3-13.2) |
| 35-64 | 65.6 (62.4-68.6) | 17.8 (15.4-20.5) | 16.6 (14.3-19.1) |
| ≥ 65 | 73.2 (68.7-77.4) | 12.1 (9.3-15.6) | 14.7 (11.5-18.6) |
| Sex | | | |
| Male | 75.4 (70.2-79.9) | 12.4 (9.2-16.5) | 12.2 (9.0-16.4) |
| Female | 64.0 (60.5-67.4) | 21.6 (18.5-25.0) | 14.4 (12.5-16.7) |
| Race | | | |
| White | 71.4 (68.4-74.3) | 16.7 (14.3-19.3) | 11.9 (10.1-14.0) |
| Black | 54.5 (44.2-64.4) | 23.9 (16.0-34.2) | 21.6 (14.6-30.6) |
| Household income | | | |
| < \$20,000 | 53.1 (46.2-59.9) | 20.8 (15.4-27.4) | 26.1 (21.3-31.7) |
| \$20,000-34,999 | 61.3 (53.5-68.5) | 20.7 (14.7-28.4) | 18.0 (12.9-24.5) |
| \$35,000-49,999 | 71.9 (63.7-78.9) | 20.0 (13.7-28.1) | 8.1 (5.1-12.8) |
| \$50,000-74,999 | 77.2 (71.3-82.2) | 13.9 (10.1-18.9) | 8.9 (6.1-12.7) |
| ≥ \$75,000 | 74.3 (68.5-79.3) | 16.6 (12.2-22.0) | 9.2 (6.4-13.0) |
| Education | | | |
| < HS graduate | 60.2 (47.1-72.1) | 11.6 (5.8-22.0) | 28.1 (18.3-40.6) |
| HS graduate | 67.8 (62.2-72.9) | 16.8 (12.6-21.9) | 15.5 (12.3-19.3) |
| Some college | 65.3 (59.6-70.5) | 21.0 (16.5-26.4) | 13.7 (10.7-17.4) |
| College graduate | 74.2 (70.0-78.1) | 17.4 (14.2-21.1) | 8.3 (6.2-11.2) |
| Year of survey | | | |
| 2005 | 66.1 (60.9-71.0) | 17.4 (13.5-22.0) | 16.5 (12.9-20.8) |
| 2006 | 60.8 (53.6-67.5) | 24.0 (18.1-31.0) | 15.3 (11.3-20.4) |
| 2007 | 69.5 (61.8-76.2) | 18.5 (12.8-26.0) | 12.0 (8.3-16.9) |
| 2008 | 73.8 (67.5-79.2) | 16.2 (11.7-21.9) | 10.1 (7.3-13.6) |
| 2009 | 71.2 (64.6-77.0) | 14.4 (10.5-19.4) | 14.4 (10.1-20.2) |

^aResponse 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?"

| Table 12. Prevalence of Work-Related Asthma Using 3 Definitions, Among Adults with Current Asthma Michigan Asthma Call-Back Survey, 2005-2009 Combined | | | |
|---|---|---|--|
| | Asthma Caused or Aggravated by Current or Previous Job^a | Ever Told or Told By Doctor That Asthma Was Work-Related^b | Any Indication of Work-Related Asthma^c |
| Total | 51.0 (47.8-54.2) | 15.9 (13.8-18.2) | 52.6 (49.4-55.8) |
| Age in years | | | |
| 18-34 | 43.5 (36.1-51.2) | 12.2 (8.0-18.1) | 45.7 (38.2-53.4) |
| 35-64 | 57.1 (53.8-60.3) | 19.3 (16.9-22.0) | 58.3 (55.1-61.5) |
| ≥ 65 | 45.9 (41.0-50.9) | 11.7 (9.0-15.2) | 47.3 (42.3-52.2) |
| Sex | | | |
| Male | 51.8 (45.5-58.0) | 16.8 (13.0-21.3) | 54.2 (47.8-60.4) |
| Female | 50.6 (47.0-54.1) | 15.4 (13.1-18.1) | 51.7 (48.1-55.3) |
| Race | | | |
| White | 49.3 (45.8-52.8) | 14.8 (12.8-17.2) | 51.0 (47.6-54.5) |
| Black | 60.7 (50.7-69.9) | 21.1 (13.3-31.8) | 60.7 (50.7-69.9) |
| Household income | | | |
| < \$20,000 | 58.4 (51.3-65.1) | 18.9 (14.8-23.9) | 59.3 (52.2-66.0) |
| \$20,000-34,999 | 59.2 (52.0-66.1) | 21.3 (15.5-28.5) | 60.2 (53.0-67.0) |
| \$35,000-49,999 | 54.2 (45.7-62.4) | 13.0 (8.5-19.3) | 54.7 (46.2-62.9) |
| \$50,000-74,999 | 45.3 (37.6-53.2) | 14.2 (10.2-19.3) | 47.4 (39.6-55.5) |
| ≥ \$75,000 | 43.8 (37.7-50.0) | 12.1 (8.9-16.2) | 45.7 (39.6-51.9) |
| Education | | | |
| < HS graduate | 51.2 (38.1-64.1) | 22.0 (12.9-35.0) | 51.2 (38.1-64.1) |
| HS graduate | 54.8 (48.8-60.6) | 15.7 (12.3-19.7) | 56.3 (50.3-62.0) |
| Some college | 54.2 (48.3-60.1) | 15.7 (12.2-20.1) | 55.6 (49.6-61.5) |
| College graduate | 43.6 (38.6-48.8) | 14.6 (11.4-18.6) | 45.9 (40.8-51.2) |
| Year of survey | | | |
| 2005 | 52.9 (47.7-58.0) | 12.1 (9.2-15.7) | 54.1 (48.9-59.2) |
| 2006 | 52.6 (45.5-59.6) | 17.7 (13.6-22.8) | 54.5 (47.3-61.4) |
| 2007 | 49.6 (41.8-57.5) | 16.3 (11.2-23.1) | 50.5 (42.6-58.3) |
| 2008 | 47.9 (40.2-55.8) | 15.4 (11.2-20.9) | 49.9 (42.0-57.8) |
| 2009 | 52.1 (44.8-59.3) | 17.9 (13.0-24.0) | 54.2 (46.8-61.4) |
| ^a 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?” ^b 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?” ^c Responded “yes” to at least one of the above 6 questions (a and b). | | | |