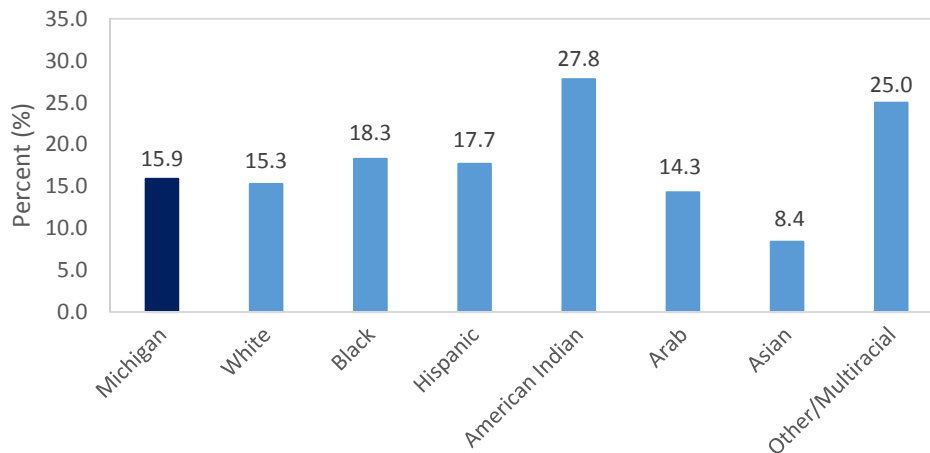


# ASTHMA BY RACE AND ETHNICITY

The following report depicts asthma rates for various races using data collected from the Michigan Behavioral Risk Factor Survey (MiBRFS), Minority Health Surveys, Michigan Inpatient Database (MIDB), and Michigan Death files. Because the Minority Health survey and MiBRFS survey examine different racial and ethnic populations each year, the prevalence rates for each race may not be reported from the same year.

## Asthma Prevalence among All Races

### Lifetime Asthma Prevalence among Adults in Michigan by Race, 2013-2015

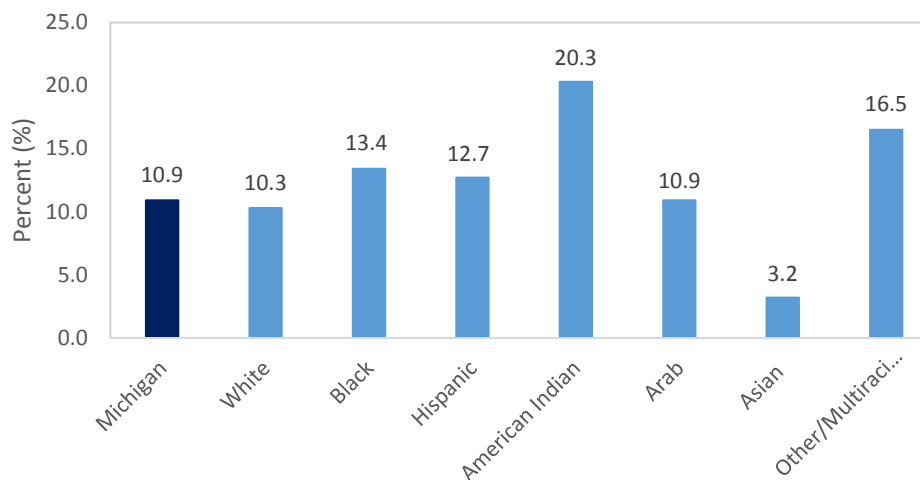


Data source: Michigan Behavioral Risk Factor Survey, 2013-2015

- Between 2013 and 2015, 15.9% of Michigan adults reported that they had ever been told by a doctor, nurse or other health professional that they have asthma.
- American Indian/Alaskan Native adults reported a significantly higher rate of lifetime asthma (27.8%) compared to Michigan (15.9%).

- Other/Multiracial respondents reported a significantly higher rate of lifetime asthma (25.0%) compared to the state (15.9%).
- Asian adults reported a significantly lower rate of lifetime asthma (8.4%) compared to Michigan (15.9%).

### Current Asthma Prevalence among Adults in Michigan by Race, 2013-2015



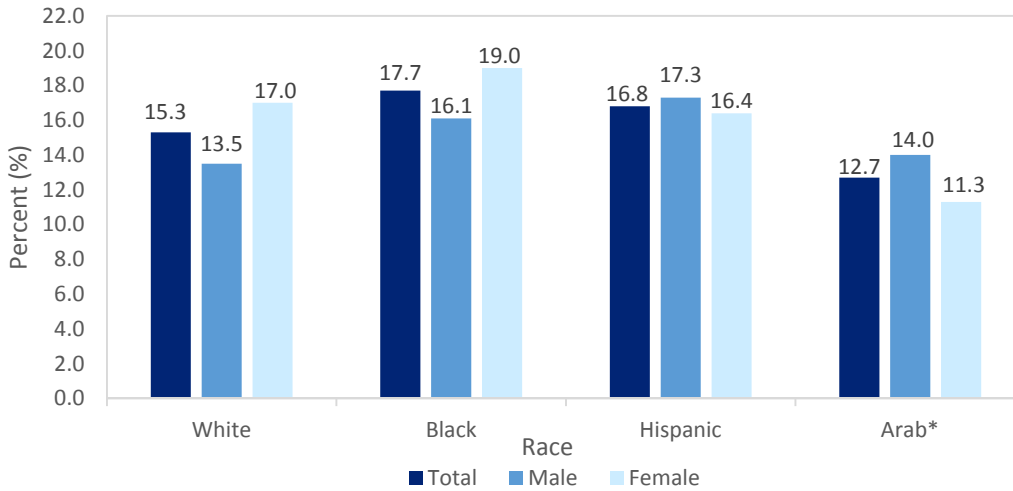
Data source: Michigan Behavioral Risk Factor Survey, 2013-2015

- Between 2013 and 2015, 10.9% of Michigan adults reported they still have asthma.
- Black adults reported a significantly higher rate of current asthma (13.4%) compared to Michigan (10.9%).

- American Indian/Alaskan Native adults reported a significantly higher rate of current asthma (20.3%) compared to the state (10.9%).
- Asian adults reported a significantly lower rate of current asthma (3.2%) compared to Michigan (10.9%).

## Asthma Prevalence by Race and Gender

### Lifetime Asthma Prevalence among Michigan Adults by Race and Gender, 2013 & 2015

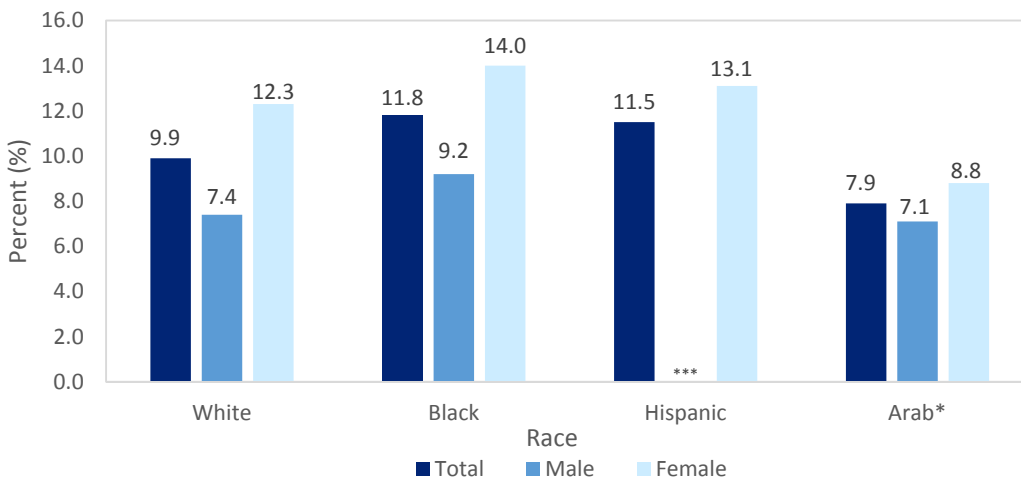


Data source: Behavioral Risk Factor Survey, 2015 & Arab Behavioral Risk Factor Survey, 2013

- Hispanic men reported the highest rate (17.3%) and White men reported the lowest rate (13.5%) of lifetime asthma among all male respondents.

- Black women reported the highest rate (19.0%) and Arab women reported the lowest rate (11.3%) of lifetime asthma among all female respondents.
- White and Black women reported higher rates of lifetime asthma (17.0% and 19.0%, respectively) in comparison to their male counterparts (13.5% and 16.1%, respectively). Hispanic and Arab women reported lower rates of lifetime asthma (16.4% and 11.3%, respectively) in comparison to their male counterparts (17.3% and 14.0%, respectively).

### Current Asthma Prevalence among Michigan Adults by Race and Gender, 2013 & 2015



Data source: Behavioral Risk Factor Survey, 2015 & Arab Behavioral Risk Factor Survey, 2013

- Black men reported the highest rate (9.2%) of current asthma among all male respondents. Arab men reported the lowest rate of current asthma (7.1%).

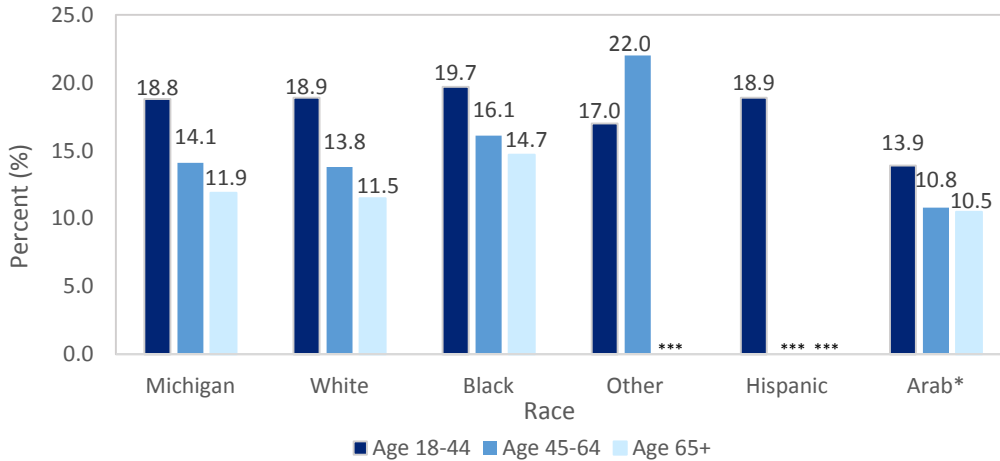
- Black women reported the highest rate (14.0%) and Arab women reported the lowest rate (8.8%) of current asthma among all female respondents.
- White, Black, and Arab women reported higher rates of current asthma (12.3%, 14.0%, and 8.8%, respectively) in comparison to their male counterparts (7.4%, 9.2%, and 7.1%, respectively).

\* Data on Arab population collected with the 2013 Michigan Arab Behavioral Risk Factor Survey.

\*\*\* Data suppressed due to a denominator less than 50 and/or a relative standard error greater than 30%.

## Asthma Prevalence by Race and Age

### Lifetime Asthma Prevalence among Michigan Adults by Race and Age, 2013 & 2015

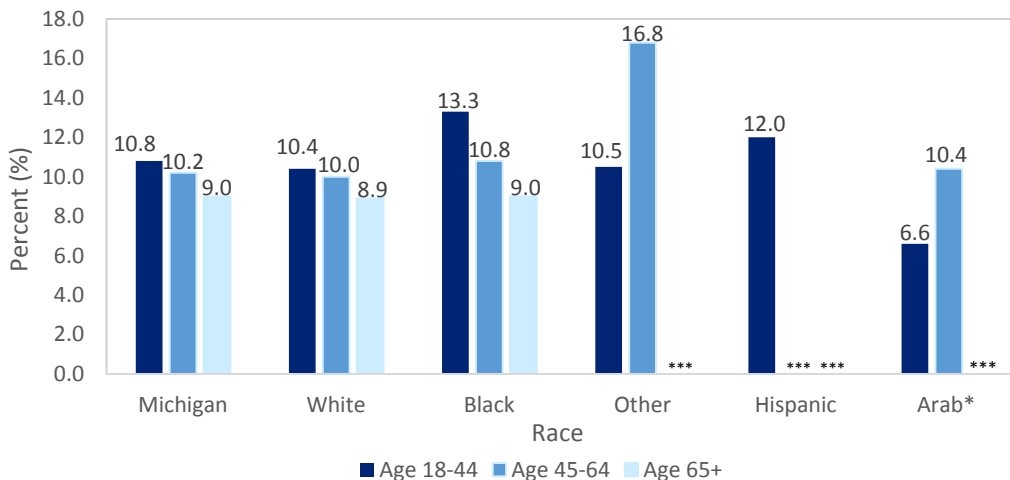


Data source: Behavioral Risk Factor Survey, 2015 & Arab Behavioral Risk Factor Survey, 2013

- Other/Multiracial respondents ages 45-64 reported the highest rate of lifetime asthma (22.0%), while Arab respondents age 65+ reported the lowest rate of lifetime asthma (10.5%).

- Older White, Black, and Arab adults reported lower rates of lifetime asthma in comparison to their younger counterparts.
- Other/Multiracial respondents ages 45-64 reported higher rates of lifetime asthma (22.0%) in comparison to Other/Multiracial respondents ages 18-44 (17.0%).

### Current Asthma Prevalence among Michigan Adults by Race and Age, 2013 & 2015



Data source: Behavioral Risk Factor Survey, 2015 & Arab Behavioral Risk Factor Survey, 2013

- Other/Multiracial respondents ages 45-64 reported the highest rate of current asthma (16.8%), while Arab respondents ages 18-44 reported the lowest rate of current asthma (6.6%).

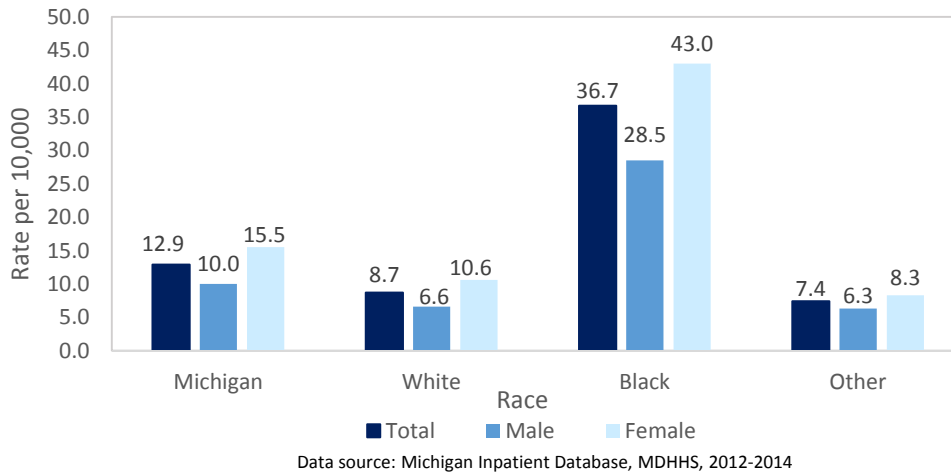
- Older White and Black adults reported lower rates of current asthma in comparison to their younger counterparts.
- Other/Multiracial and Arab respondents ages 45-64 reported higher rates of lifetime asthma (16.8% and 10.4%, respectively) in comparison to Other/Multiracial and Arab respondents ages 18-44 (10.5% and 6.6%, respectively).

\* Data on Arab population collected with the 2013 Michigan Arab Behavioral Risk Factor Survey.

\*\*\* Data suppressed due to a denominator less than 50 and/or a relative standard error greater than 30%.

## Asthma Hospitalization and Mortality

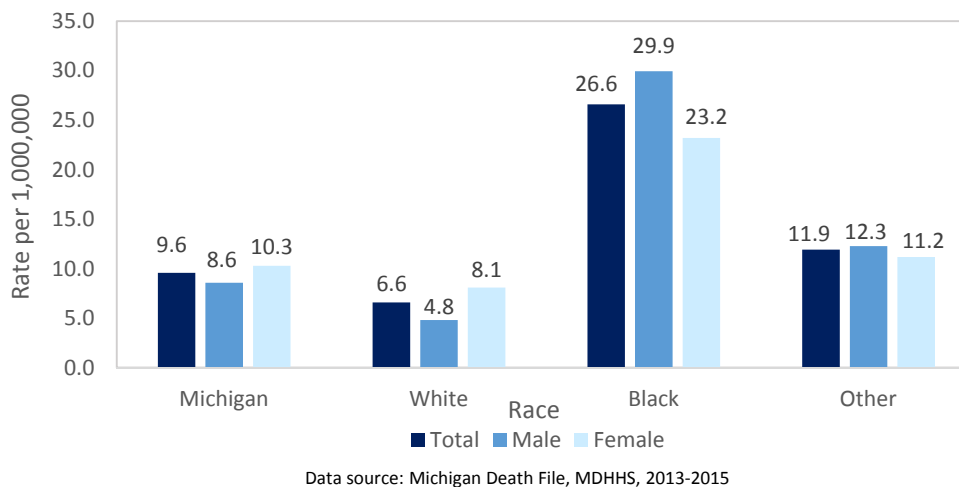
### Asthma Hospitalization among Michigan Residents by Race and Gender, 2012-2014



- Black females experienced the highest asthma hospitalization rate (43.0 per 10,000) among all females. Other/Multiracial females experienced the lowest hospitalization rate (8.3 per 10,000).

- Black males experienced the highest asthma hospitalization rate (28.5 per 10,000) among all males. Other/Multiracial males experienced the lowest hospitalization rate (6.3 per 10,000).
- White, Black, and Other/Multiracial females experienced higher rates of asthma hospitalization (10.6, 43.0, and 8.3 per 10,000, respectively) in comparison to their male counterparts (6.6, 28.5, and 6.3 per 10,000, respectively).

### Asthma Mortality among Michigan Residents by Race and Gender, 2013-2015



- Black females experienced the highest rate of asthma mortality (23.2 per 1,000,000) among all females. White females experienced the lowest rate of asthma mortality (8.1 per 1,000,000).

- Black males experienced the highest asthma mortality rate (29.9 per 1,000,000) among all males. White males experienced the lowest asthma mortality rate (4.8 per 1,000,000).
- White females experienced a higher asthma mortality rate (8.1 per 1,000,000) in comparison to their male counterpart (4.8 per 1,000,000). In contrast, Black and Other/Multiracial females experienced a lower rate of asthma mortality (23.2 and 11.2 per 1,000,000, respectively) in comparison to their male counterparts (29.9 and 12.3 per 1,000,000, respectively).

## Methods

### **Methods: Behavioral Risk Factor Survey and Minority Health Surveys**

- The Michigan Behavioral Risk Factor Survey (MiBRFS) is an annual, statewide telephone survey of Michigan adults aged 18 years and older that is conducted through a collaborative effort between the Population Health Surveillance Branch (PHSB) of the Centers for Disease Control and Prevention (CDC), the Michigan State University Institute for Public Policy and Social Research (IPPSR), and the Michigan Department of Health and Human Services. MiBRFS data contributes to the national Behavioral Risk Factor Surveillance System (BRFSS) that is managed by the PHSB at the CDC.
- The total sample size for the combined 2013-2015 MiBRFS dataset was equal to 29,644 completed interviews from both landline telephones and cell phones. The 2013-2015 combined dataset included 24,432 White, Non-Hispanic; 2,823 Black, Non-Hispanic; 404 Asian or other Pacific Islander, Non-Hispanic; 255 American Indian/Alaska Native, Non-Hispanic; 747 Other/Multiracial, Non-Hispanic; 356 Arab, Non-Hispanic; and 627 Hispanics. Those with unknown race/ethnicity were excluded from this analysis.
- In 2015, the total sample size of completed interviews for the core survey was 8,935 (landline telephone = 4,215; cell phone = 4,720) which consisted of 7,188 White, non-Hispanics, 946 Black, non-Hispanics, 450 Other/Multiracial, non-Hispanics, and 206 Hispanics. Race/ethnicity was not available for 145 respondents, thus these individuals were excluded from this analysis. Due to relatively small racial-ethnic subgroup sample sizes we were required to combine demographic groups in this analysis. Some of the estimates for these racial-ethnic subgroups are relatively imprecise (i.e., have large confidence intervals) and should be used with caution. Furthermore, only comparisons between estimates with non-overlapping 95% confidence intervals should be considered significantly different.
- A respondent was categorized as having lifetime asthma if they answered “yes” to the following question: “Has a doctor, nurse, or other health professional ever told you that you [have] asthma?”
- A respondent was categorized as having current asthma if they answered “yes” to the following questions: “Has a doctor, nurse, or other health professional ever told you that you [have] asthma?” and “Do you still have asthma?”
- Due to the small number of Arab/Chaldean participants included in the MiBRFS annually, Arab/Chaldeans are included in the ‘Other, non-Hispanic’ or ‘Hispanic’ group, depending on their reported ethnicity. Estimates for Arabs/Chaldeans are not available on a yearly basis and are available only when multiple years of data are combined.
- The American Association for Public Opinion Research (AAPOR) response rate for the 2013 MiBRFS was 48.2% for the landline portion and 33.6% for the cell phone portion of the survey. The overall weighted AAPOR response rate (landline and cell phones combined) for the 2013 MiBRFS was 44.0%, while the overall weighted U.S. median response rate for 2013 was 46.4%. Nine Arab respondents included in the sample from the 2013 MiBRFS were both Arabic and Hispanic. These respondents were included in both the Hispanic and Arab group estimates. Therefore, Arab respondents in this report are of both Hispanic and non-Hispanic origin.
- A stand-alone survey of Arab adults in Michigan was conducted in 2013 to help identify the gaps in the data among this population. For this report, the term ‘Arab’ is used to describe adult respondents that are either Arab or Chaldean. The total sample size for the 2013 Arab BRFS was 536 (stand-alone survey of Arab adults=400, Arab interviews from 2013 MiBRFS=136). The AAPOR response rate for the stand-alone survey portion of the 2013 Arab BRFS was 31.9% for the landline portion and 43.7% for the cell phone portion. About half (50.5%) of the Arab BRFS interviews were conducted in Arabic.

### **Methods: Mortality**

- The Michigan Death File is a database that includes all deaths for Michigan residents. This report utilized the Michigan Death Files from 2013, 2014, and 2015.
- An asthma death was identified when asthma (ICD-10 code=J45 or J46) was recorded as the underlying cause of death.
- Asthma mortality rates were calculated for the three-year period 2013-2015, and were presented per 1,000,000 population. The asthma mortality rates are representative of Michigan residents of all ages. Rates were age-adjusted using the 2000 US standard population to ensure that valid comparisons could be made between populations of different age distributions. Rates were calculated by race and sex to identify disparities and patterns.
- The ‘Other Race’ category includes all persons who did not identify as Black or White.

## Methods

### **Methods: Hospitalization**

- The Michigan Inpatient Database (MIDB) includes virtually all hospital discharges for Michigan residents. This report utilized 2012, 2013, and 2014 MIDB data.
- An asthma hospitalization was defined as an inpatient stay with a primary discharge diagnosis of asthma (ICD-9 – CM=493.XX). These data represent the number of hospitalizations for asthma, not the number of persons with a hospitalization for asthma.
- Hospitalization rates were calculated and presented per 10,000 population. The asthma hospitalization rates are representative of Michigan residents of all ages. Rates were age-adjusted, using the 2000 US standard population, so that valid comparisons could be made between populations of different age distributions. Rates were calculated by race and sex to identify disparities and patterns.
- The ‘Other Race’ category includes all persons who did not identify as Black or White.

### **Data Sources:**

- 2013-2015 Michigan Behavioral Risk Factor Survey Seven Race-Ethnicity groups, Lifecourse Epidemiology and Genomics Division, Michigan Department of Health and Human Services
- 2015 Michigan Behavioral Risk Factor Survey Four Race-Ethnicity groups, Lifecourse Epidemiology and Genomics Division, Michigan Department of Health and Human Services
- 2013 Michigan Arab Behavioral Risk Factor Survey, Lifecourse Epidemiology and Genomics Division, Michigan Department of Health and Human Services
- 2013-2015 Michigan Death Files, Michigan Department of Health and Human Services
- 2012-2014 Michigan Inpatient Database, Michigan Department of Health and Human Services

### **For More Information:**

Visit [www.michigan.gov/asthma](http://www.michigan.gov/asthma) or [www.michigan.gov/asthmaepi](http://www.michigan.gov/asthmaepi) to view more data on asthma prevalence, hospitalization, and mortality.

Visit [www.michigan.gov/brfs](http://www.michigan.gov/brfs) to view more information on the Behavioral Risk Factor Survey.

### **Suggested Citation:**

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