

*The Burden
of Asthma
in Ohio*

*Asthma Program
Indoor Environments Section
Ohio Department of Health*

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Key Findings

- According to the 2006 Behavior Risk Factor Surveillance System, 13.6 percent of Ohio adults have been told at some time in their life that they had asthma, and approximately 9.8 percent reported that they currently had asthma.
- Current asthma prevalence among adults in Ohio has increased since 2000.
- There were significant associations between asthma prevalence and common demographic factors such as race/ethnicity, educational attainment or household income.
- Each year in Ohio, there are approximately 18,000 hospitalizations and 63,000 emergency department visits with asthma as the primary diagnosis. This number is steadily increasing.
- Women had consistently higher rates than men for both hospitalizations and emergency department visits for primary diagnoses of asthma.
- Ohio's emergency department visit rate for children under 5 is approximately twice the Healthy People 2010 goal of 80 per 10,000 residents.
- Each year in Ohio, there are on average 160 asthma-related deaths. Most of these deaths are preventable with appropriate care and medication.
- Along with significant differences in asthma prevalence, African-Americans were two to three times as likely to die from asthma as whites.
- Children in households with annual incomes of less than \$25,000 were more likely than those with higher annual household incomes to have more than one emergency department visit for asthma.
- Parents who reported a child having asthma are significantly more likely to face a variety of health care-access issues than parents who do not have a child with asthma.

Introduction

What is Asthma?

Asthma is a chronic inflammatory disease of the airways. Because of inflammation the airways are unusually sensitive and react to stimulation from many kinds of irritants and allergens by constricting, producing mucus and swelling. When these reactions take place, an individual generally experiences reduced ability to breathe and may cough, wheeze and feel short of breath. This reaction may happen very quickly or over an extended period with minor or major impact on a person's ability to function. Depending on an individual's level of control, episodes may be very frequent or very infrequent. Control may vary depending on the time of year and other environmental conditions.

For the last 10 years, the means have been available to control asthma so that individuals with the disease can live normal lives. The National Asthma Education and Prevention Program (NAEPP) located at the National Institutes of Health (NIH) convened an expert panel to establish evidence-based Guidelines for Diagnosis and Management of Asthma in 1991, 1997, 2002 and 2007.

These guidelines have established the currently accepted diagnosis for asthma and indicate that for people with persistent asthma an inhaled corticosteroid is the preferred method for controlling inflammation. Once inflammation is controlled, many symptoms will be reduced. Although, many individuals require other medications to control asthma along with inhaled corticosteroids, control is the emphasis of medication therapy. Short-acting bronchodilators are recommended as rescue medications only.

As with previous guidelines for asthma management, control of environmental allergens, irritants and sensitizers that trigger responses from inflamed airways continues to be an important part of a complete asthma-control plan. Public health strategies must still incorporate environmental, medical models and self-management education to achieve a reduction in the burden of asthma.

Unfortunately for many people, asthma is a complex disease to diagnose, treat and manage. Appropriate treatment can prevent deaths, the need for emergency care, hospitalization and death from asthma. Prevention of these events not only eliminates pain and suffering but the high cost of health care for patients with asthma, both of which are significant.

The National Public Health Response to Asthma

Nationally, the response to this issue has taken place on several levels. The U.S. Department of Health and Human Services (HHS) has included asthma in the Healthy People 2010 Goals as follows:

- Reduce asthma deaths.
- Reduce hospitalizations for asthma.
- Reduce hospital emergency department visits for asthma.
- Reduce activity limitations among persons with asthma.
- Reduce the number of school or work days missed by persons with asthma due to asthma. (This goal is in development.)
- Increase the proportion of persons with asthma who receive formal patient education, including information about community and self-help resources, as an essential part of the management of their condition.
- Increase the proportion of persons with asthma who receive appropriate asthma care according to the NAEPP Guidelines. (This goal is in development.)
- Establish in at least 25 states a surveillance system for tracking asthma death, illness, disability, impact of occupational and environmental factors on asthma, access to medical care and asthma management. (This goal is in development.)

The Centers for Disease Control and Prevention (CDC) has funded state health departments to develop asthma programs including surveillance for asthma and state planning for implementation of interventions. The Ohio Department of Health (ODH) has been funded since it received a CDC Asthma grant in 2003 (Addressing Asthma from a Public Health Perspective, Award Number U59/CCU523179-01). Additionally, CDC has developed resources for states such as evaluating asthma partnerships, effective interventions for asthma and coordination of surveillance efforts.

The United States Environmental Protection Agency (USEPA) has also developed a program for asthma with tools for the public including pamphlets on asthma education topics and indoor air quality. Particular emphasis has been given to indoor air quality in schools. In Ohio, a USEPA Region 5 grant funds local asthma coalitions in Cleveland and Toledo to work with environmental tools in schools.

The Ohio Public Health Response to Asthma

The ODH has been a driving force along with many organizations in Ohio working toward control of asthma. As part of the CDC grant, ODH has focused on development of the Ohio Asthma Coalition (OAC) and the Ohio Surveillance System for Asthma (OSSA).

In June 2003, OAC held its inaugural meeting. Since that time the OAC has completed the Ohio Statewide Asthma Plan and begun implementation activities. The plan focuses on seven areas: Advocacy/Legislation, Clinical Practice, Community Mobilization, Data/Research, Education, Environmental Quality and Public Awareness. Additional funding for implementation will be sought as needs become apparent. The plan can be accessed at <http://www.ohioasthmacoalition.org/about/about.htm>. The OAC is in the process of reorganizing to produce four major products for interventions in the next few years: clinical, school and home visit interventions and a health plan collaborative. This reorganization will be completed in by the end of Spring, 2009, and Interventions will progress as early as the end of 2009.

The other major effort of the Asthma Program is development of the Ohio Surveillance System for Asthma (OSSA). The OSSA will supply critical information necessary to provide measures of need for asthma interventions and evidence of the success or failure of those interventions. OSSA will:

- Provide high quality asthma morbidity, mortality, risk factor, disease management and access to medical care data, and their analyses.
- Monitor the occurrence of asthma in Ohio.
- Identify high-risk populations sensitive to asthma in Ohio.
- Use these data in the design and evaluation of interventions for planning and implementing programs to control the burden of asthma in Ohio.
- Establish a repository of asthma data for other users.

The major data sets available to ODH that meet favorably with these requirements are the CDC's BRFSS, the Ohio Hospital Association's Discharge Data Set (OHA), Ohio Family Health Survey (OFHS), Ohio Health Plan's Medicaid Asthma Eligibility Subset and ODH's Center for Vital and Health Statistics' mortality data.

How Should OSSA Data Be Used?

The final link in the surveillance chain is to apply the data to prevention and control. The epidemiologic aspects of asthma such as distribution and time trends are crucial to the planning, implementation and evaluation of programs to control the burden of asthma in Ohio. Some of the many ways the data collected by OSSA can be used is to:

- **Target efforts to fight asthma.**

The OSSA has local profiles of major cities, regions or counties available pre-2006. These data allow public health organizations to direct resources to high-priority populations and identified geographical areas.

The Burden of Asthma in Ohio

- **Demonstrate the need for funding.**

Agencies and individuals applying for grants or other forms of funding have specific and up-to-date information to demonstrate Ohio's or local areas' needs. Those applying for continuing funding may be able to demonstrate the effectiveness of their programs.

- **Document differences in risk exposure.**

Environmental justice seeks to guarantee that significant adverse health impacts associated with environmental pollution in the United States are not distributed inequitably (Gore, 1992). With surveillance data, the Asthma Program is able to map the areas that have the highest concentration of selected pollutants with the percentage of minorities or low-income residents and compare them with the areas that have the highest numbers of asthma patients or deaths, and target populations at risk.

- **Evaluate the impact of advances in treatment.**

New asthma medications and treatments are being introduced at a brisk pace. Rather than relieve an asthma attack in progress, new medications taken on a long-term basis, such as glucocorticoids, glucocorticoid-beta-adrenergic combinations and leukotriene receptor agonists, can prevent asthma attacks. If a larger proportion of the population is properly treated, it is possible that Ohio could see a dramatic difference in emergency room rates and reported symptoms. Surveillance may be able to demonstrate success of these efforts and identify treatments that can make large differences in quality of life and reduction of health care costs.

- **Monitor the progress of efforts.**

In addition to the efforts of ODH, there are many other organizations, institutions, coalitions and individuals that are working to reduce the burden of asthma. They are implementing interventions in diverse areas such as clinical practice, environment, data/research and education. Providing accurate, timely and specific data to these groups will enable them to see progress they are making, or alert them to improvements that need to be made.

Contents of this Report

This report presents data from multiple sources:

- Behavioral Risk Factor Surveillance System (BRFSS)
- Ohio Family Health Survey—Child asthma surveillance data
- Ohio Center for Health and Vital Statistics—Mortality data
- Ohio Medicaid—Medicaid data
- Ohio Hospital Association – Hospitalization and emergency department usage data

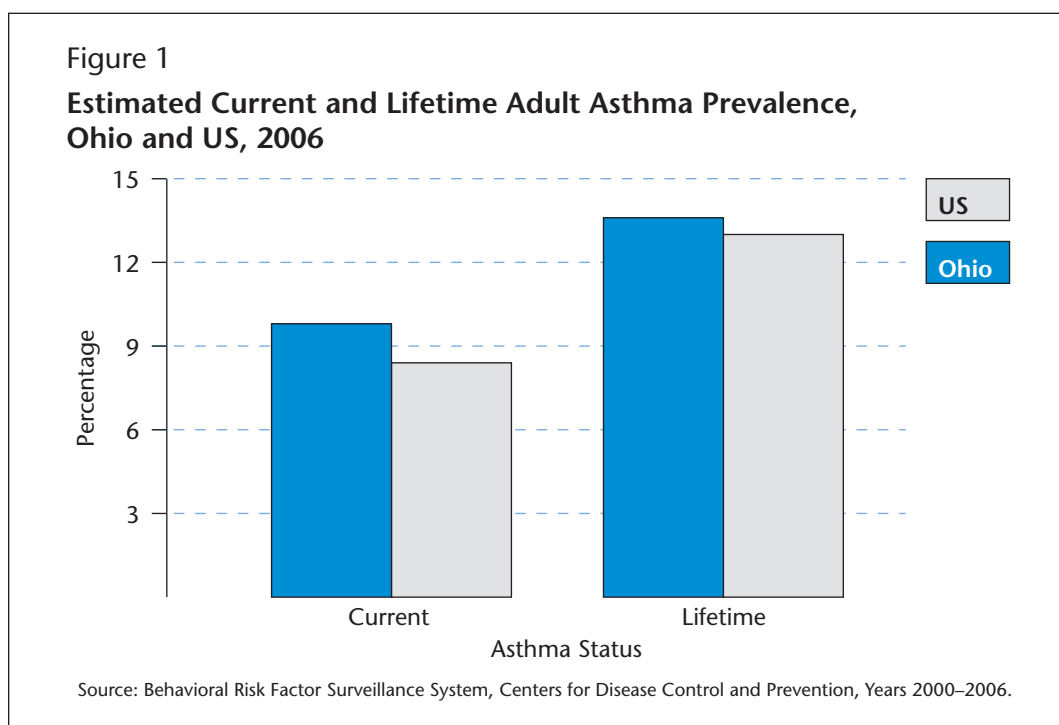
In addition, Healthy People 2010 asthma objectives are included.

Behavior Risk Factor Surveillance System Asthma Data

The BRFSS is the world's largest random digit dial telephone survey. It is one of the major sources of health data for all of the United States, the District of Columbia and three territories.

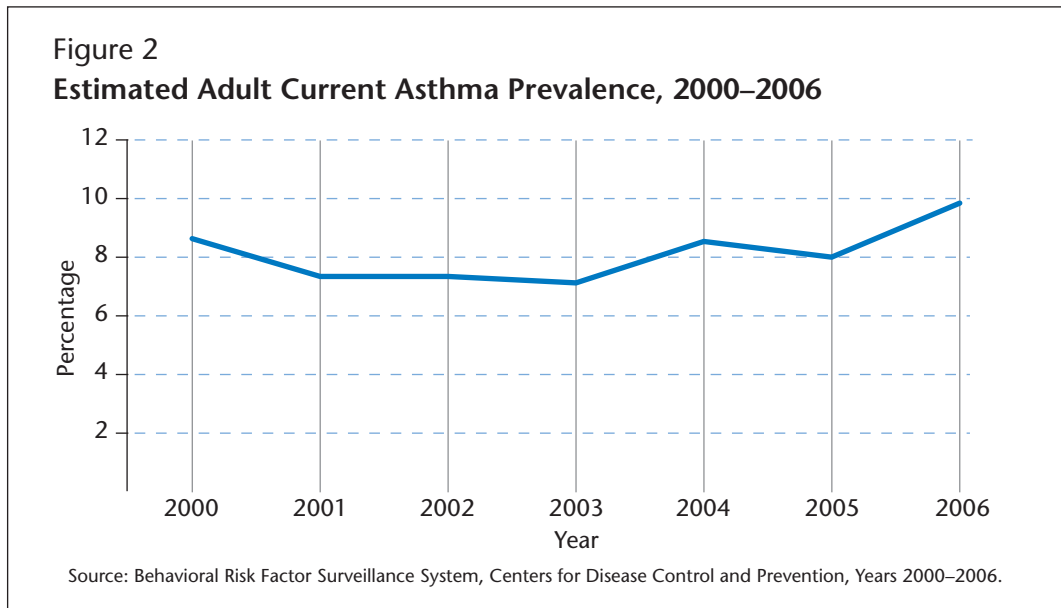
The CDC develops standard, core questionnaires for states so data can be compared across states. All health departments must ask the core component questions without any modification in wording; however, the modules are optional. States can also add their own questions that are particularly suited to the needs of their populations.

The information gathered in the survey can be used to track when and where these diseases and risk factors are affecting U.S. residents. The information enables ODH and other providers to direct resources toward treating or curing these problems, and progress achieved can be monitored.

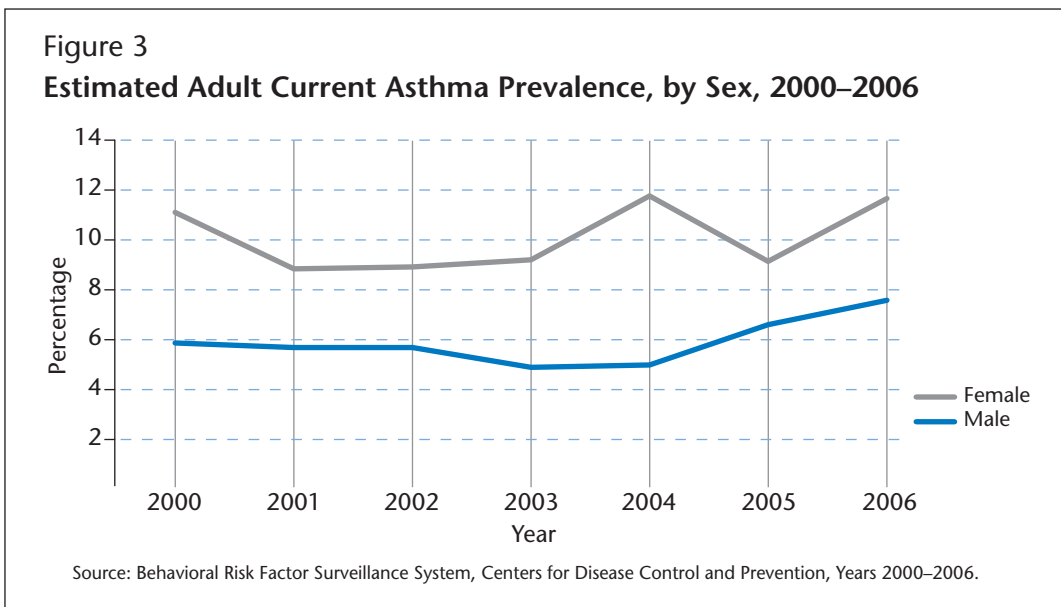


Approximately 13.6 percent (1,079,076) of Ohio adults reported ever having been diagnosed with asthma. In addition, approximately 9.8 percent (719,508) of adults reported that they currently have asthma. For current and lifetime asthma, Ohio had higher rates than the nation as a whole; however, these differences were not statistically significant.

The Burden of Asthma in Ohio

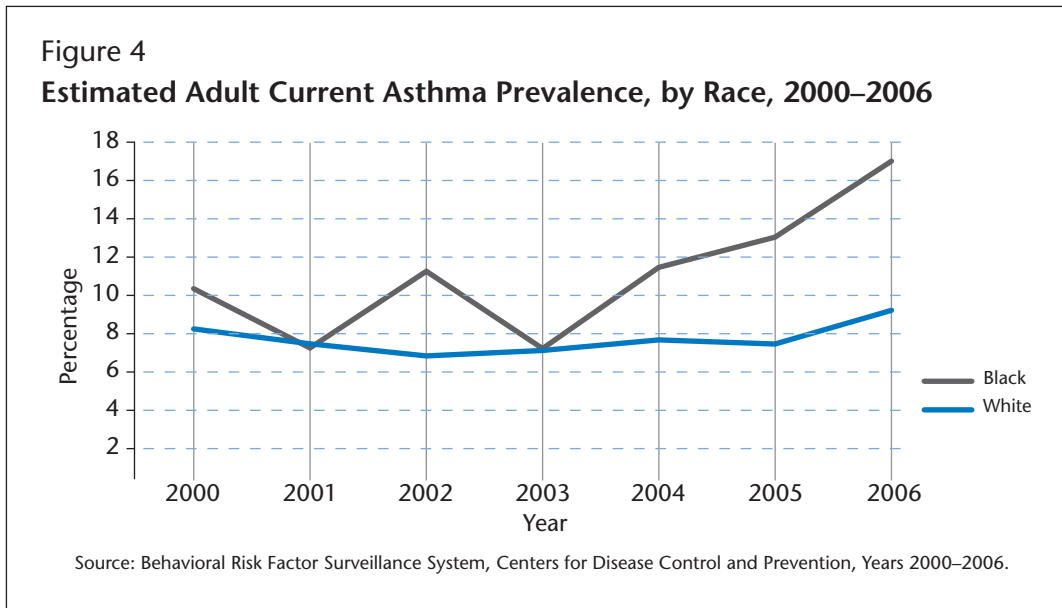


Current asthma prevalence for Ohio is similar to the national current prevalence from 2001 to present. However, Ohio's percent of lifetime patients who continue to have asthma (69.7 percent in 2004) is higher than the nation's median (62.1 percent in 2004).

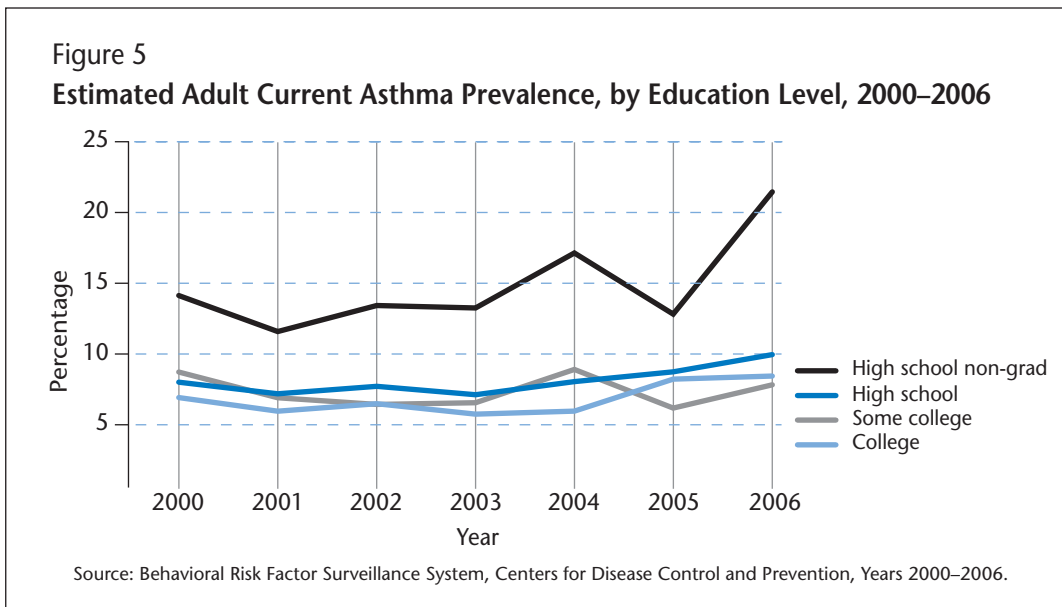


The current asthma prevalence rate was significantly higher for women (11.7 percent) than men (7.6 percent). Adult females in Ohio have significantly higher current asthma prevalence than the prevalence among men. In Ohio, this translates into 518,360 women with current asthma, compared to only 306,613 men.

The Burden of Asthma in Ohio

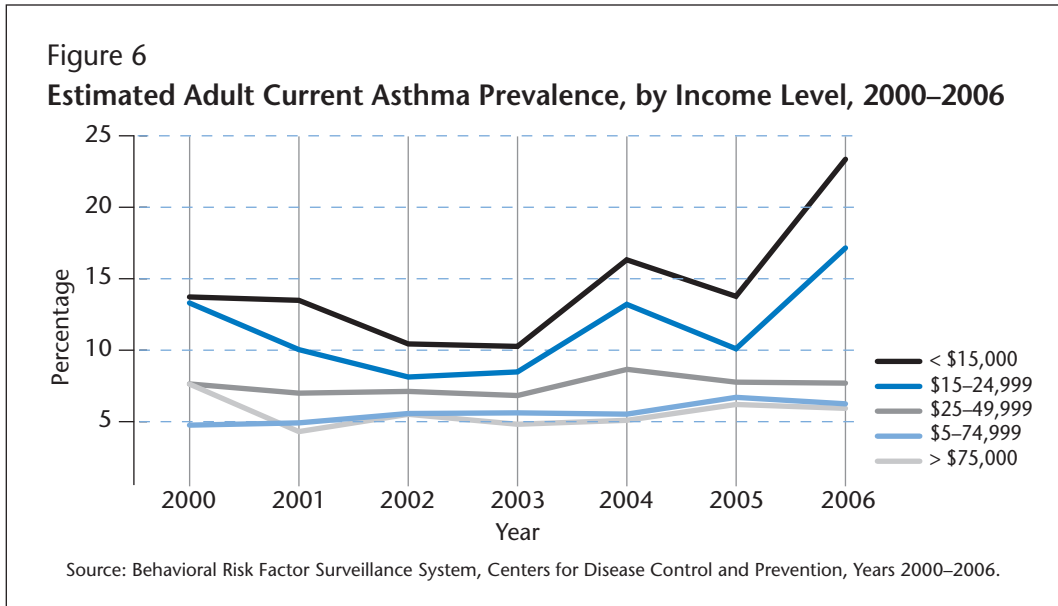


Black adults in Ohio had a higher rate of current asthma (17.0 percent) than white adults (8.9 percent), a statistically significant difference.



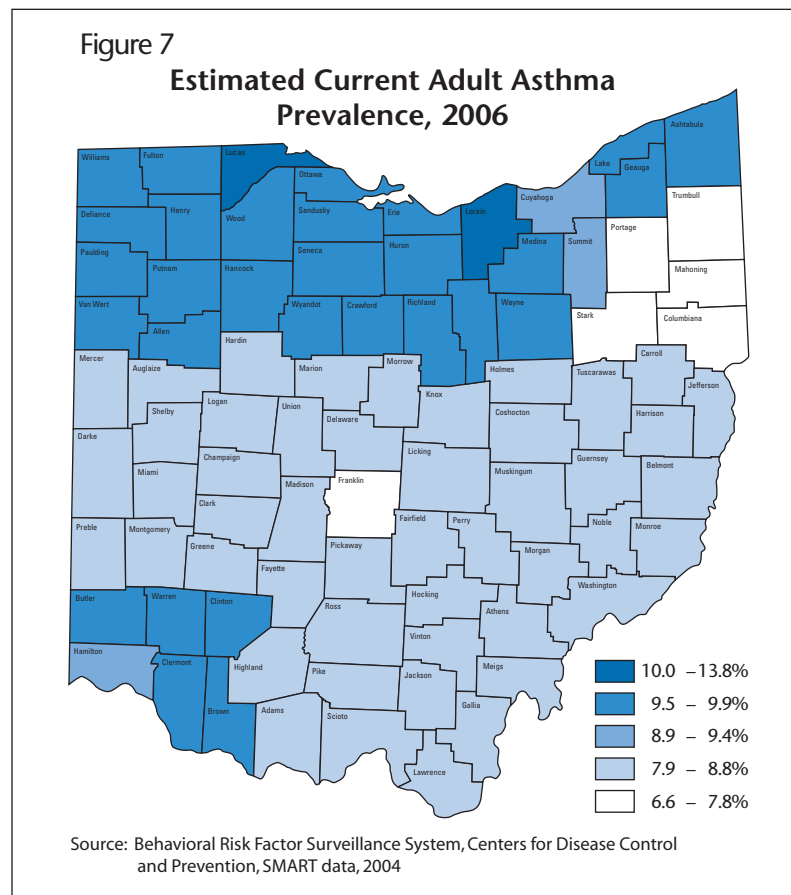
People who dropped out of high school are more than twice as likely to be diagnosed with asthma as those who have completed college, a statistically significant difference.

The Burden of Asthma in Ohio



In Ohio, people with incomes under \$15,000 are significantly more likely to report being told by a doctor that they have asthma than people in households making over \$75,000 per year. There is a strong inverse relationship between income and prevalence of asthma.

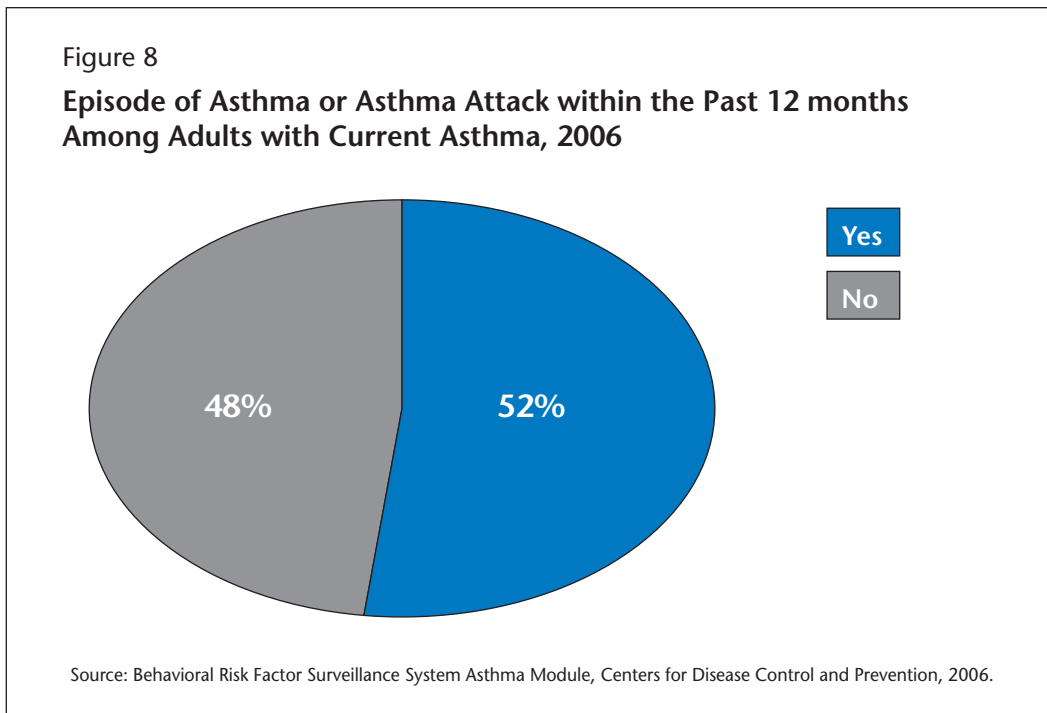
Current asthma prevalence is highest for adults in Lorain and Lucas counties. Franklin County has the lowest asthma prevalence, at 6 percent.



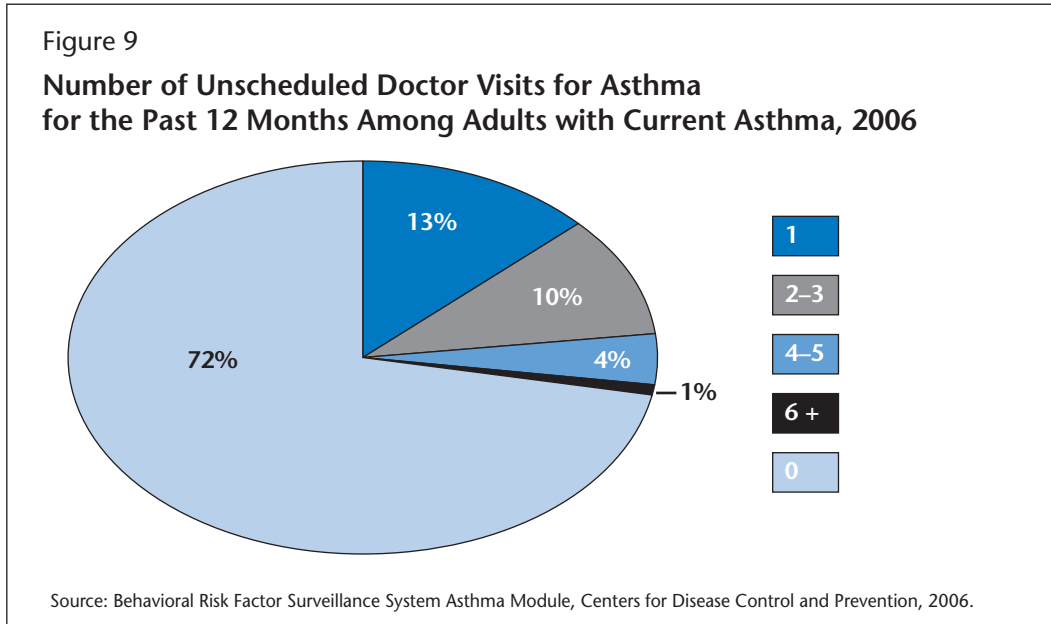
The Burden of Asthma in Ohio

The questions in the BRFSS Adult Asthma History Module were used to examine the asthma-control characteristics among respondents who reported current asthma. Of those people who responded that they have asthma, the asthma module asks questions about:

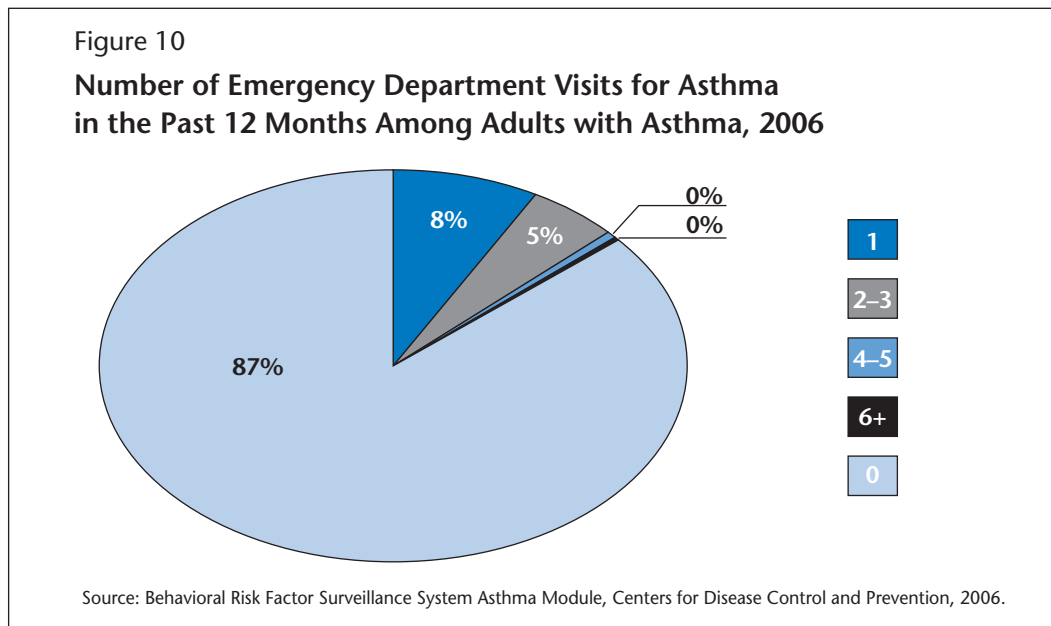
- Age at diagnosis.
- Frequency of routine and emergency treatment due to asthma.
- Frequency of difficulty sleeping.
- Frequency of asthma symptoms, episodes or attacks.
- Frequency of interruption of activities of daily living.
- Frequency of medication use.
- Presence of children with asthma in the household.



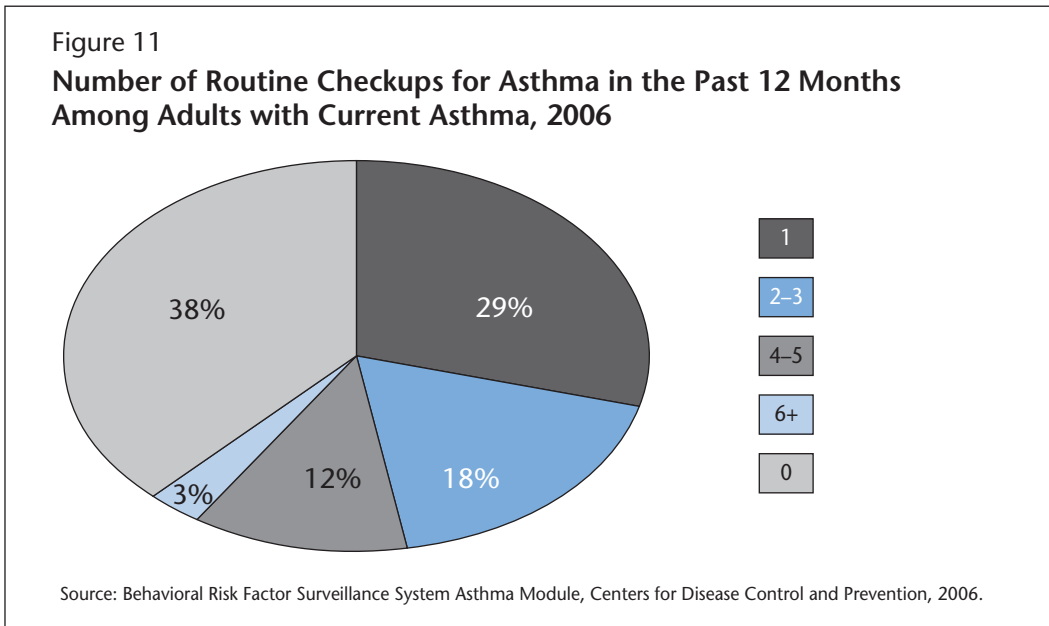
More than half of adults in Ohio reporting asthma (52.3 percent) had an attack or episode within the past 12 months



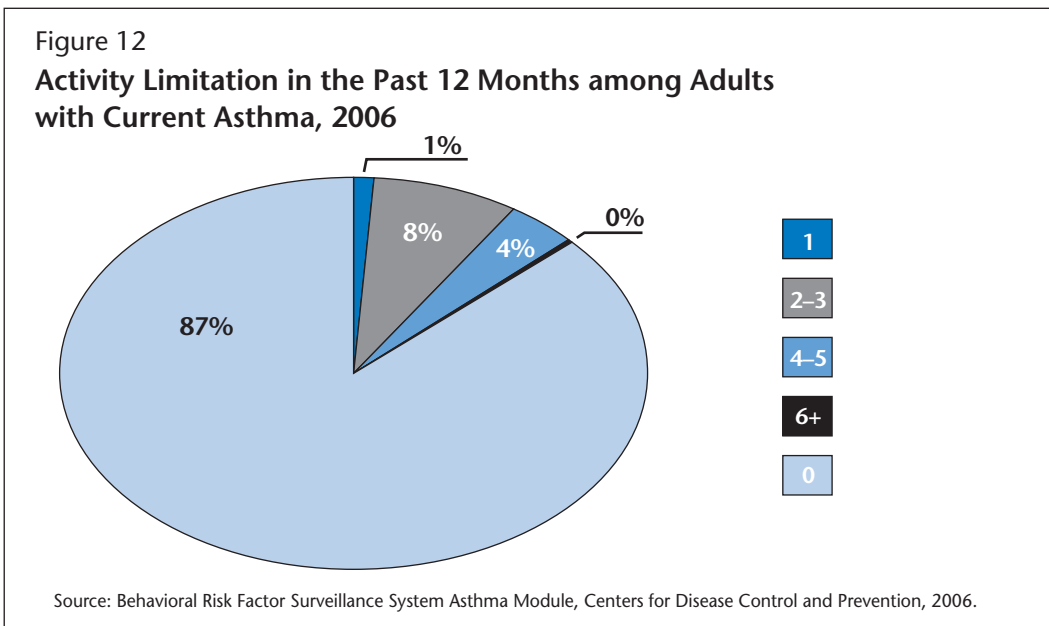
In Ohio, 13 percent of people who reported having current asthma on the 2004 BRFSS visited the ED or urgent care at least once in the past 12 months due to their asthma. Almost one in 10 patients with asthma (9.9 percent) visited the ED two or three times and 4.1 percent visited the ED or urgent care four or more times in the past 12 months.



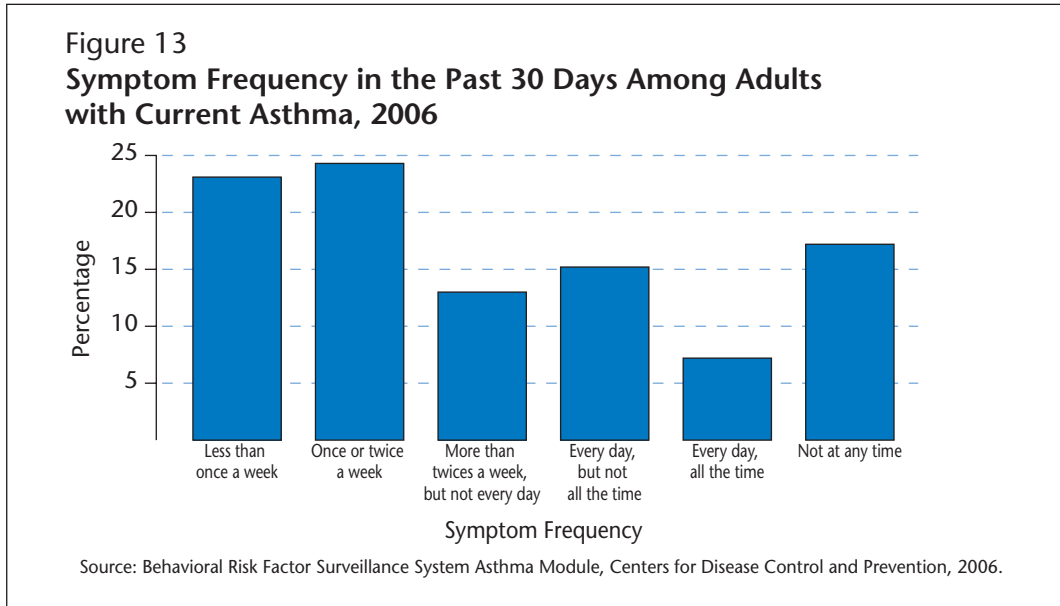
More than one in eight adults with asthma (13.3 percent) had at least one urgent care or emergency department visit within the past 12 months. Less than 1 percent had four or more visits.



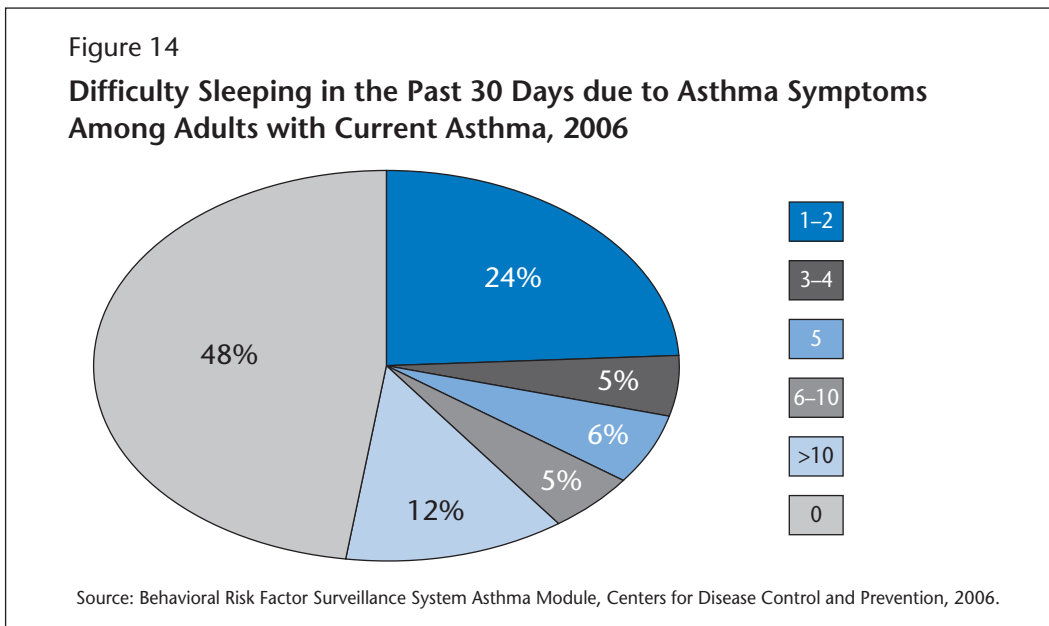
Nearly two-thirds of patients (62.1 percent) who reported asthma had at least one routine visit for asthma in the past 12 months; 14.3 percent had four or more visits.



Of adults who reported having asthma, 12 percent had at least one day in the past 12 months where they had an activity limitation that interfered with work or school.



Nearly a quarter (22.4 percent) of adults with asthma report having asthma symptoms at least once a day. Only 17.2 percent reported that they did not have any symptoms within the past 30 days.



Of adults reporting having asthma, less than half (48.4 percent) reported that asthma did not interrupt their sleep during the past 30 days. Twelve percent reported 10 or more days where asthma interrupted their sleep.

Inpatient Hospitalizations due to Asthma

Tracking rates of hospital discharge can aid in identifying groups or areas with inadequate access to basic medical care. Asthma inpatient hospital discharge data provide important information about the severity and cost of asthma in Ohio.

Asthma hospital discharge data are collected by the Ohio Hospital Association (OHA), a private organization that has agreed to share the data with the Ohio Department of Health. These data are given by the hospitals to OHA on a voluntary basis. There are some limitations to the OHA discharge data set. Unique identifiers are not assigned to individuals, so there is no way of identifying multiple ED visits by one person. However, the count and rate of total ED visits is a good representation of the asthma burden experienced by Ohio. Currently all hospitals in Ohio contribute to this data file. The latest data available from the OHA are from 2003.

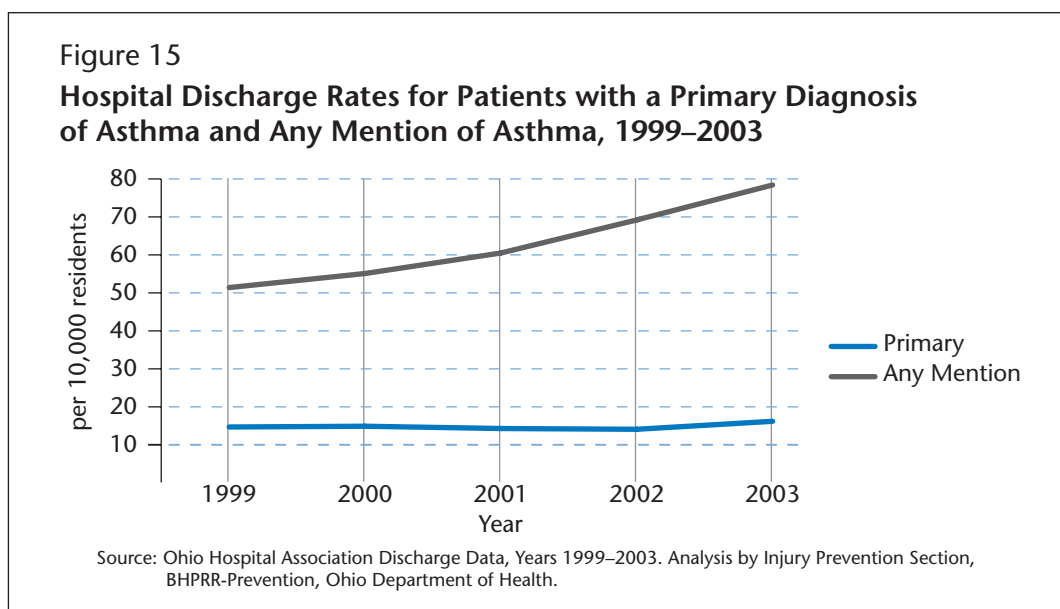
The Council of State and Territorial Epidemiologists (CSTE) and the Centers for Disease Control and Prevention developed a standardized case classification for asthma to identify probable and possible asthma cases in hospital discharge data.

Confirmed Case—There is no confirmed case classification for hospital discharge data.

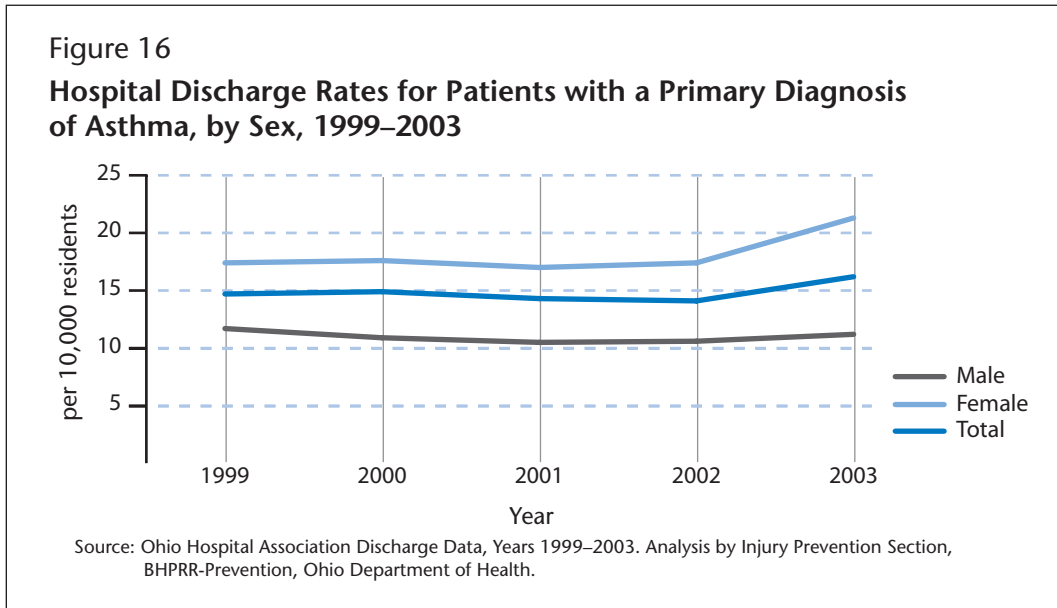
Probable Case—Hospital records listing the ICD-9-CM Code 493.0–493.9 as the primary discharge diagnosis.

Possible Case—Hospital records listing the ICD-9-CM Code 493.0–493.9 as the secondary discharge diagnosis.

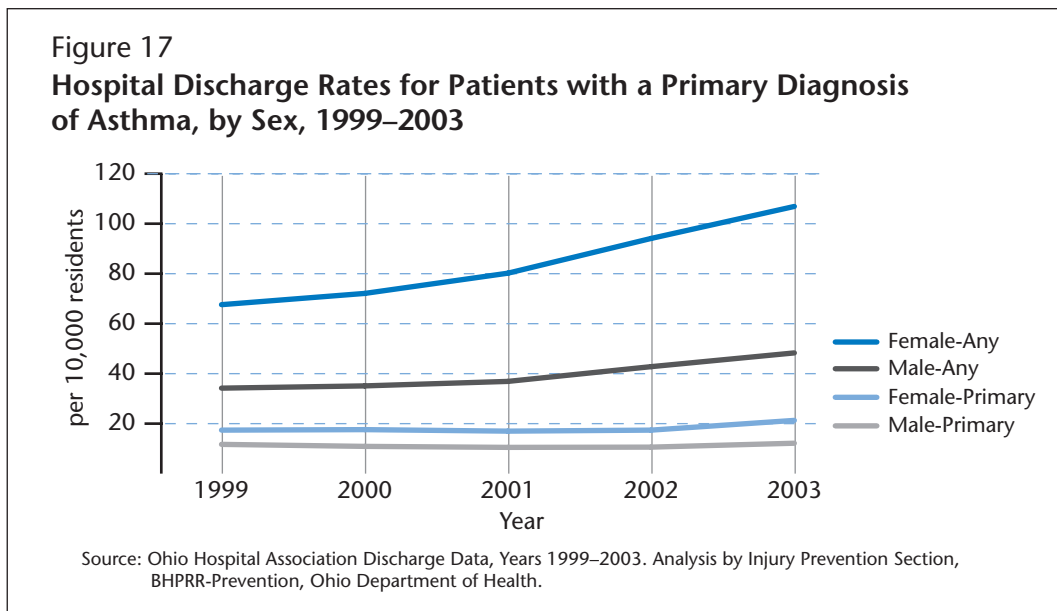
Unless otherwise specified, this report will use the probable case definition of asthma with hospital discharges that have a primary diagnosis of asthma.



This chart shows a rapid increase in hospital discharges with any mention of asthma on the chart from 1999–2003. For discharges with a primary diagnosis of asthma, there was a slower increase in 2003.



There were nearly twice as many inpatient hospital discharges for a primary diagnosis of asthma for females than for males in 2003. The number of discharges remained steady from 1999–2002, with a sharp increase for both sexes in 2003.



The rate of female discharge with any mention of asthma has risen the fastest of the rates depicted above. There was a larger increase in the discharge rate with any mention of asthma for females than for males. The female rate for primary diagnosis of asthma increased during 1999–2003, while for males, it decreased.

Healthy People 2010

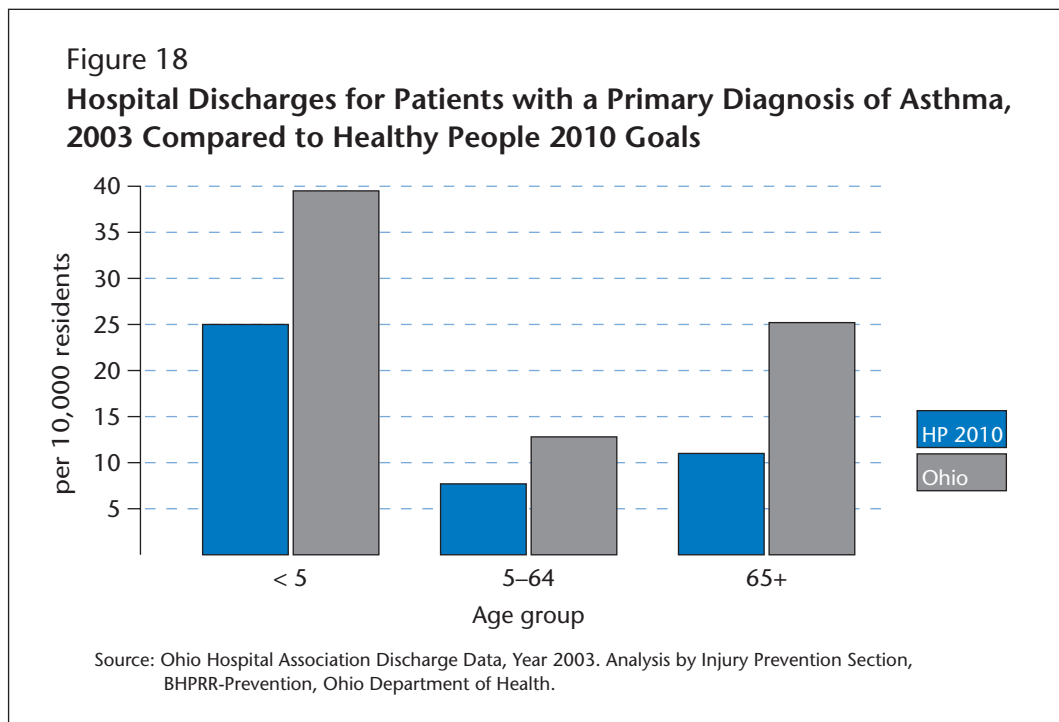
Healthy People 2010 is a set of health objectives developed by an alliance of more than 350 national membership organizations and 250 state health, mental health, substance abuse and environmental agencies. Healthy People 2010 goals are used by states, communities, professional organizations and others to develop programs to improve health. There are two overarching goals in Healthy People 2010: increase quality and years of healthy life, and eliminate health disparities.

Objective 24-2 in Healthy People 2010 is to reduce hospitalizations for asthma.

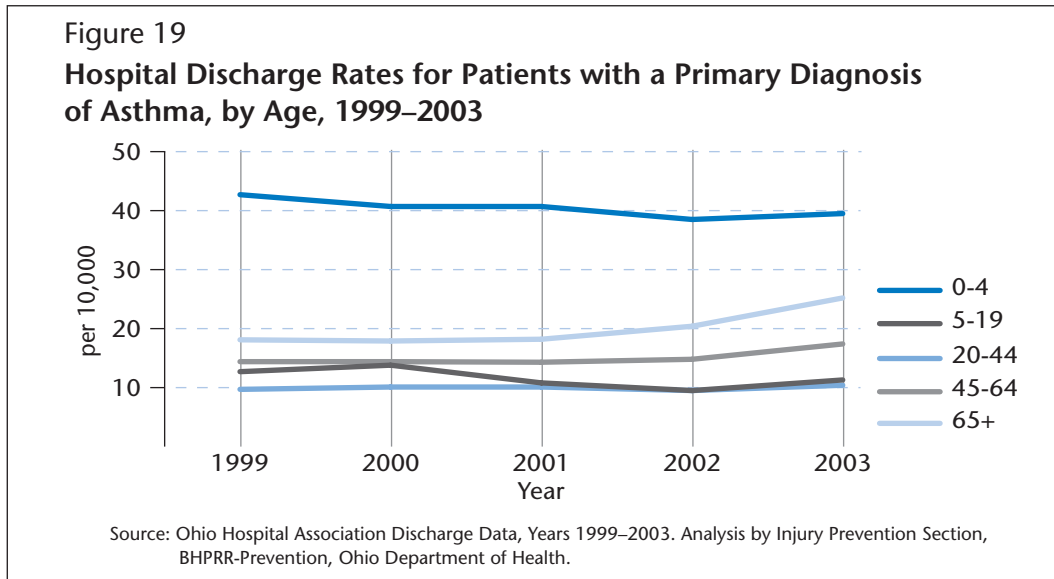
The Healthy People 2010 Goals for asthma hospitalization are:

- 25/10,000 in children under age 5 years
- 7.7/10,000 in children and adults age 5 to 64 years
- 11/10,000 in adults aged 65 years and older

As shown in Figure 18 Ohio exceeds all three of these targets by at least 58 percent in 2003. The inpatient hospital discharge rates for a primary diagnosis of asthma are 39.5 per 10,000 residents for children under 5; 12.8 per 10,000 residents for adults and children aged 5 to 64, and 25.2 per 10,000 residents for adults 65 and older.

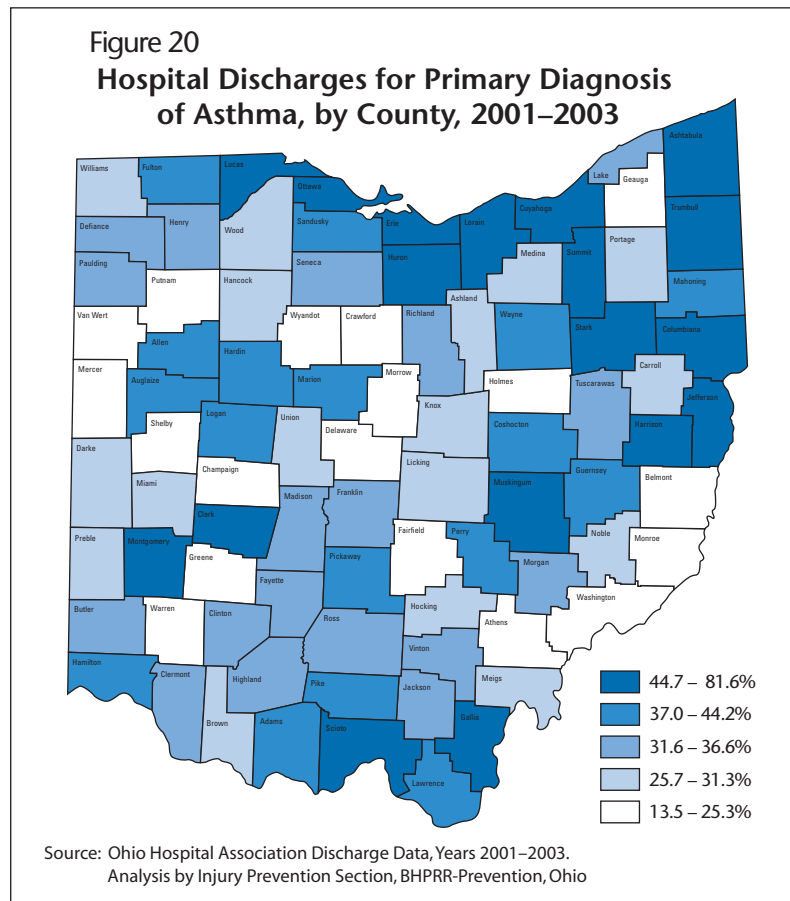


Ohio hospital discharge rates for a primary diagnosis of asthma exceeds all three of the Healthy People 2010 targets by large margins.



The hospital discharge rate for primary diagnosis of asthma for children under 5 years of age remains by far the highest from 1999–2003. The rate has experienced a decline since 1999. The fastest increase in the primary diagnosis of asthma hospital discharge rate is among adults 65 years of age and over.

Hospital discharge rates for all counties are shown by this map. The highest rate of hospital discharge with a primary diagnosis of asthma was in Harrison County (81.6 per 10,000 residents), followed by Cuyahoga County (81.2 per 10,000). The lowest rate was in Putnam County (13.5 per 10,000 residents). Of the 18 counties in the top 20 percent, 12 are located in Northeast Ohio.



Emergency Department Usage

Asthma emergency department (ED) visits are an important indicator of the severity of asthma in Ohio. Each visit to the ED represents a possible treatment failure. The Ohio Hospital Association (OHA) provides data to the Ohio Department of Health regarding ED visits in the following way:

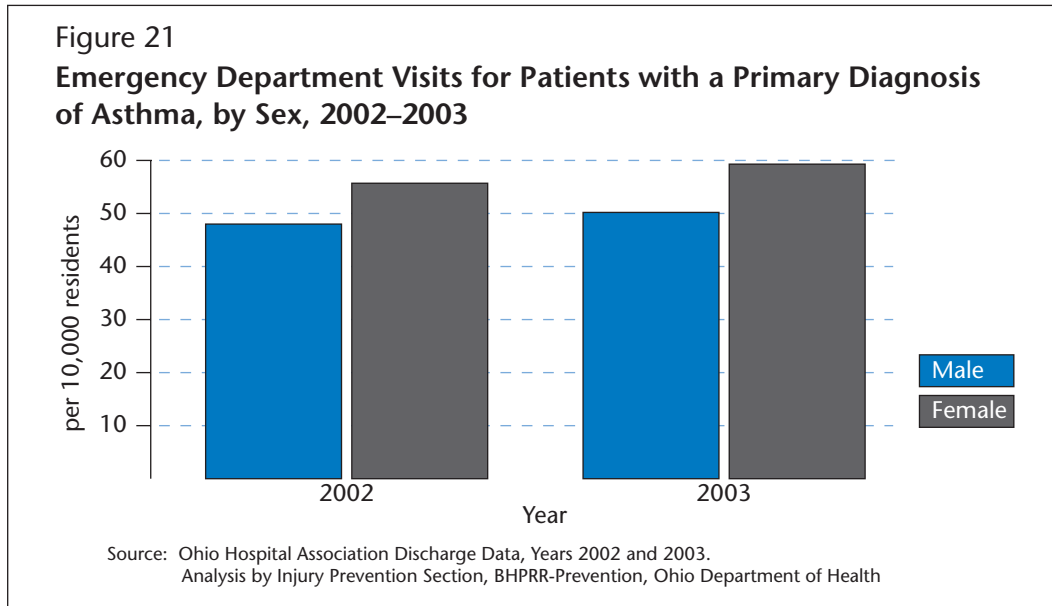
The Council for State and Territorial Epidemiologists' probable case definition is used to determine which ED visits classify as asthma visits. Hospital records listing the ICD-9-CM codes 493.0–493.9, the asthma codes, as the primary discharge diagnosis are considered visits due to asthma.

There are some limitations to the OHA discharge data set. Unique identifiers are not assigned to people, so there is no way of identifying multiple ED visits by one person. However, the count and rate of total ED visits is a good representation of the asthma burden experienced by the community.

Currently, all hospitals in Ohio contribute data to the OHA discharge database. Please note that these data are collected for billing and other administrative purposes rather than surveillance purposes. As a result, some of the variables that would be of interest for surveillance such as race, education level and income, are not collected.

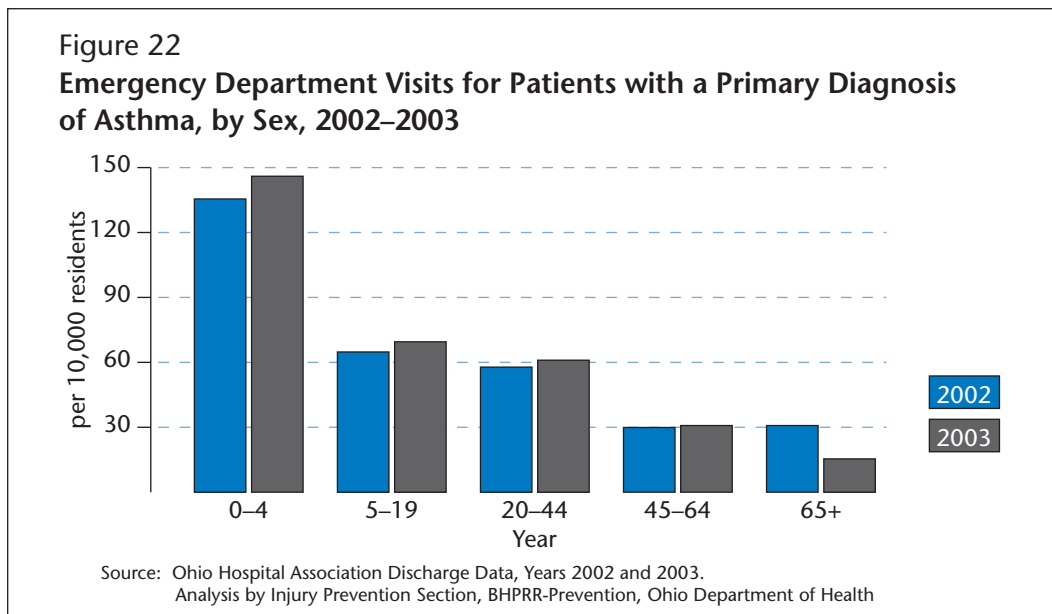
Even with all hospitals reporting, the OHA discharge data set may not be a complete census of ED visits for Ohio residents. While efforts are employed to capture visits for asthma in bordering states by Ohio residents, those residents treated in other states can not be reported in the data set. It is also important to note that the charges are not necessarily reflective of reimbursement received by any given hospital.

Ohio has met the HP 2010 goal for residents 65 and over, and is very close to the goal for adults and children ages 5 to 64. However, Ohio's ED visit rate for children under 5 is nearly twice the Healthy People 2010 goal.

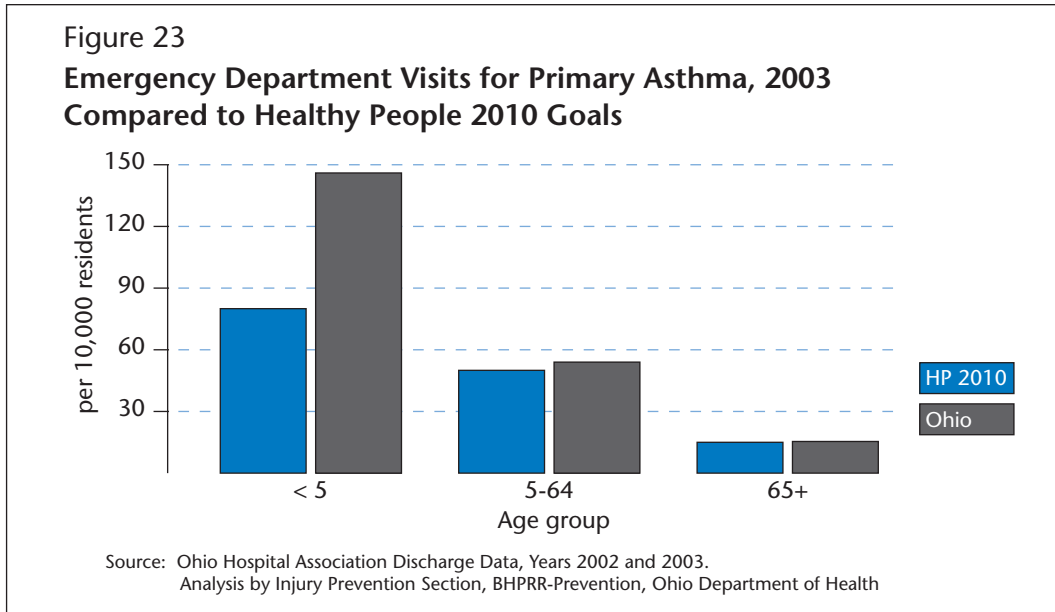


There were 62,715 ED visits for primary asthma in 2003. In both 2002 and 2003, females had a higher rate of asthma ED visits than males.

ED visit rates are higher for females than for males, similar to inpatient hospital visits. 55 percent of ED visits were for females in 2003.



Children, especially those under 5 years of age, had high ED visit rates during 2002 and 2003. Children 19 and under accounted for 44 percent of ED visits in Ohio during 2003. Rates for all age groups except over 65 increased between 2002 and 2003.



Based on available data, Ohio has come close to meeting the (ED) visits goal for residents 65 and over, and is very close to the Healthy People 2010 goals for adults and children aged 5 to 64. However, Ohio's ED visit rate for children under 5 is approximately twice the Healthy People 2010 goal of 80 per 10,000 residents.

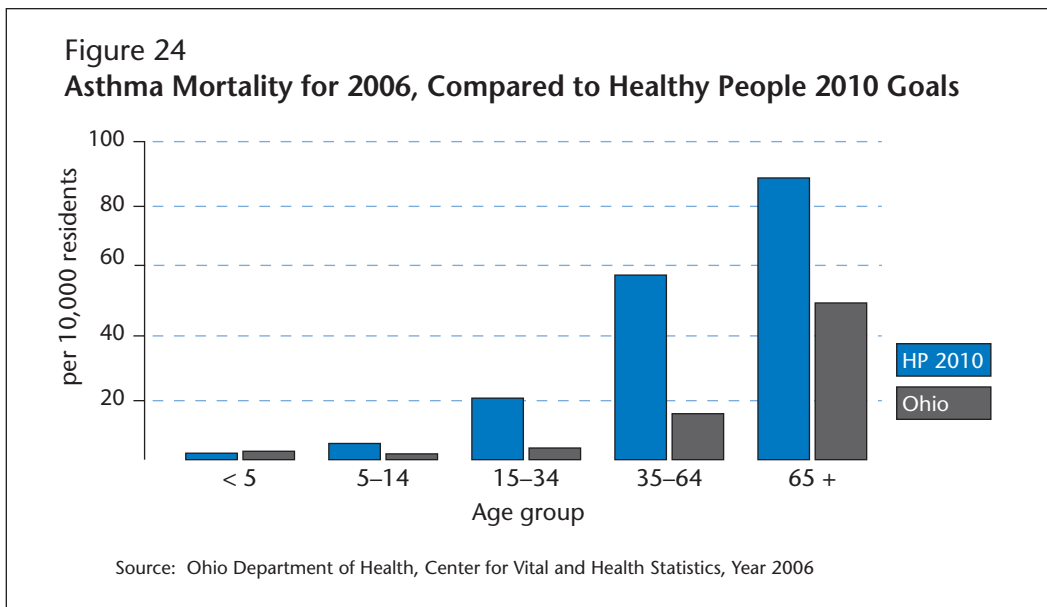
Similar to hospital discharge rates, children under 5 have higher rates of asthma ED visits than adults. While adults 65 and older had the second-highest inpatient discharge rates; the fewest ED visits are experienced by adults 65 and older.

Asthma Mortality

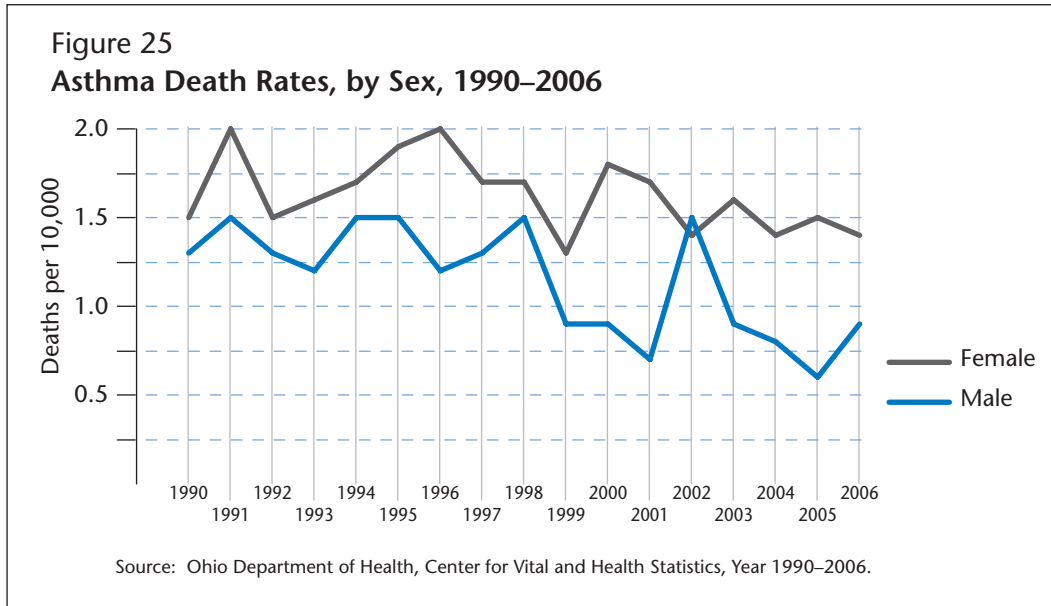
Deaths due to asthma are rare, and in almost every case, preventable. Nationally, there are close to 5,000 deaths per year from asthma (Mannino et al, 2002). Since 1990 in Ohio, there is an average of 168 asthma deaths per year. Successful asthma management reduces symptoms and improves quality of life. Failure to maintain good control of the disease results in a higher risk of mortality. Deaths can occur among individuals with mild intermittent asthma as well as those with severe persistent asthma.

Mortality data from the Ohio Department of Health's Center for Health and Vital Statistics were used to calculate asthma mortality rates from 1990-2006.

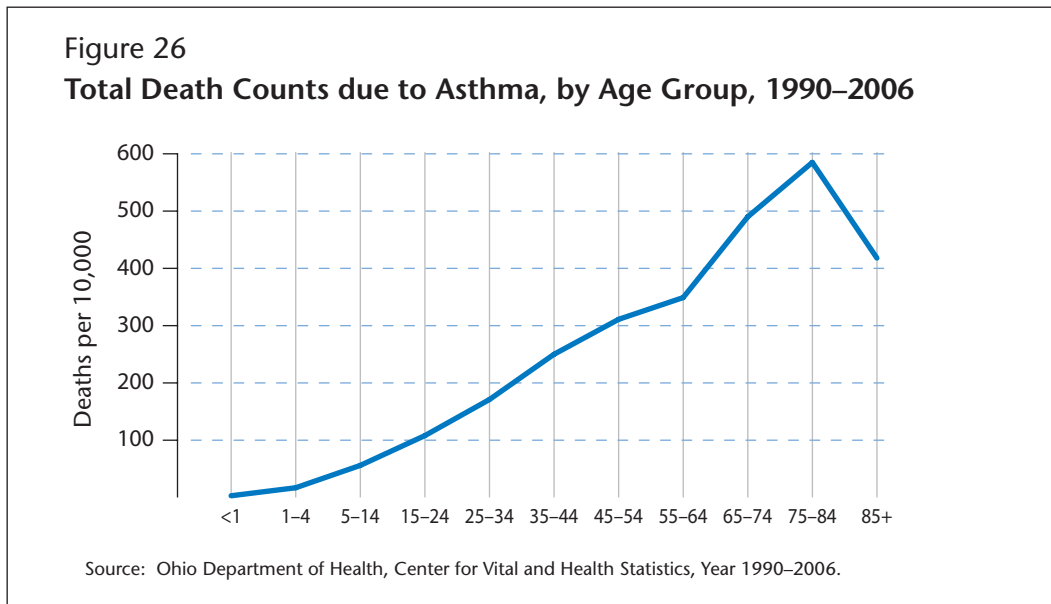
As recommended by the Council of State and Territorial Epidemiologists, deaths where asthma is the primary cause are selected from these data. From 1990 to 1998, these are deaths with primary cause coded to ICD-9 (International Classification of Diseases, version 9) codes 493.XX. Deaths occurring from 1999 to 2002 are classified according to ICD-10. ICD-10 codes for asthma are J45 and J46.



Healthy People 2010 has its objective of 24-1 in the Respiratory section as Reduce Asthma Deaths. Mortality for asthma in Ohio is below all recommended Healthy People 2010 targets except for children under 5.



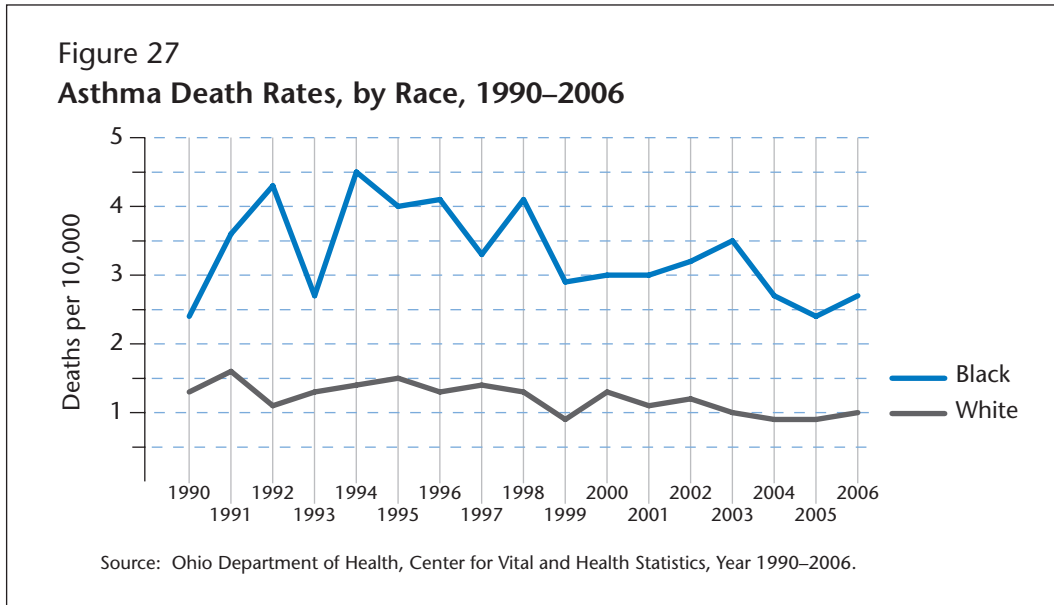
Asthma death rates are higher in females, reflecting the sex differences seen in asthma prevalence, hospitalization and Medicaid utilization. In 2006, the average asthma mortality rate for females was 1.4 deaths per 100,000, versus 0.9 deaths per 100,000 for males. Asthma death rates show a decreasing trend for both sexes.



During 1990-2006, the majority of asthma deaths occurred in adults 65 years of age and older. Generally, mortality increases with age. Asthma mortality is low through age 65, with a sharp increase in mortality rates after age 65, with older people experiencing the highest number of deaths due to asthma. Asthma deaths in the past 13 years peak in the 75-84 year range.

* Please note that data coded using ICD-9 is combined with data coded using ICD-10 for this comparison.

The Burden of Asthma in Ohio



Blacks in Ohio had higher asthma death rates than whites in the state, with the black rate at 2.7 per 100,000 residents and the white rate at 1.0 per 100,000 residents. Black residents of Ohio are more than twice as likely as whites to die from asthma.

* Please note that data coded using ICD-9 is combined with data coded using ICD-10 for this comparison.

Asthma Among Medicaid Enrollees

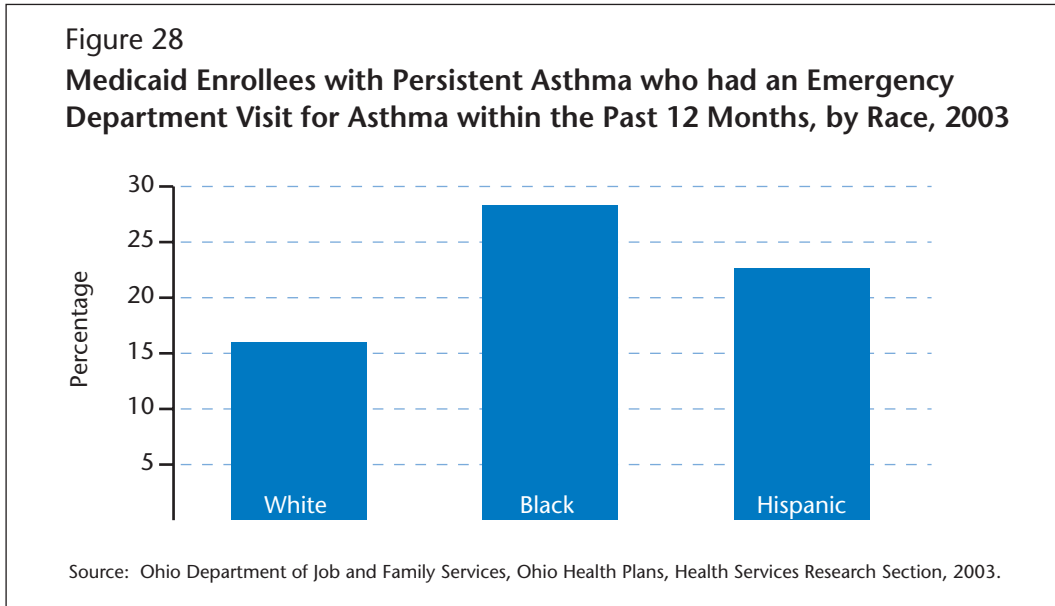
The Medicaid program is a dual state and federal assistance program that provides medical insurance to individuals who meet specific eligibility criteria. These eligibility criteria are a combination of income level, age, disability status or pregnancy status. As of January 2003, there were approximately 1,881,640 individuals covered by the Ohio Medicaid program (ODJFS, Health Services Research, 2005). Data in this report are for Ohio Medicaid recipients for the State Fiscal year 2003.

A private, non profit organization, National Committee for Quality Assurance creates specifications that are designed to facilitate comparisons between managed care organizations. NCQA developed the Health Employer Data and Information Set (HEDIS). HEDIS defines a persistent asthmatic so all managed care organizations can use the same definition and will be able to compare data based on this definition.

HEDIS identifies a “persistent asthmatic” as an individual who meets any of the following four criteria:

1. Four or more prescription medications used in the treatment of asthma in one year.
 2. One or more visits to the emergency room with a principal diagnosis of asthma in one year.
 3. One or more inpatient hospital visits with a principal diagnosis of asthma in one year.
 4. Four or more outpatient visits with any diagnosis of asthma and two or more claims for a prescription drug used in the treatment of asthma within one year.
- If an individual 5 to 56 years of age meets any one of the four criteria, then they are identified as a “persistent asthmatic”. However, they must also be continuously enrolled in Medicaid with no more than one gap in enrollment of up to 45 days during each fiscal year.

Overall, nearly 20 percent of Medicaid enrollees with persistent asthma had an ED visit due to asthma within the past 12 months. The percentages shown are similar to the Ohio Family Health Survey in 2004, where nearly 20 percent of children aged 5 to 9, and 21.0 percent of children 10 to 17 with persistent asthma had an ED visit due to asthma within the past 12 months (OFHS, 2004). More than one fifth of adults (20.6 percent) aged 18 to 56 had an asthma-related ED visit within the past 12 months.



White Medicaid enrollees with persistent asthma were less likely than minority groups to have an ED visit due to asthma (16 percent), as shown above, 22.6 percent of Hispanic enrollees with persistent asthma had an ED visit and 28.3 percent of black enrollees with persistent asthma had an ED visit.

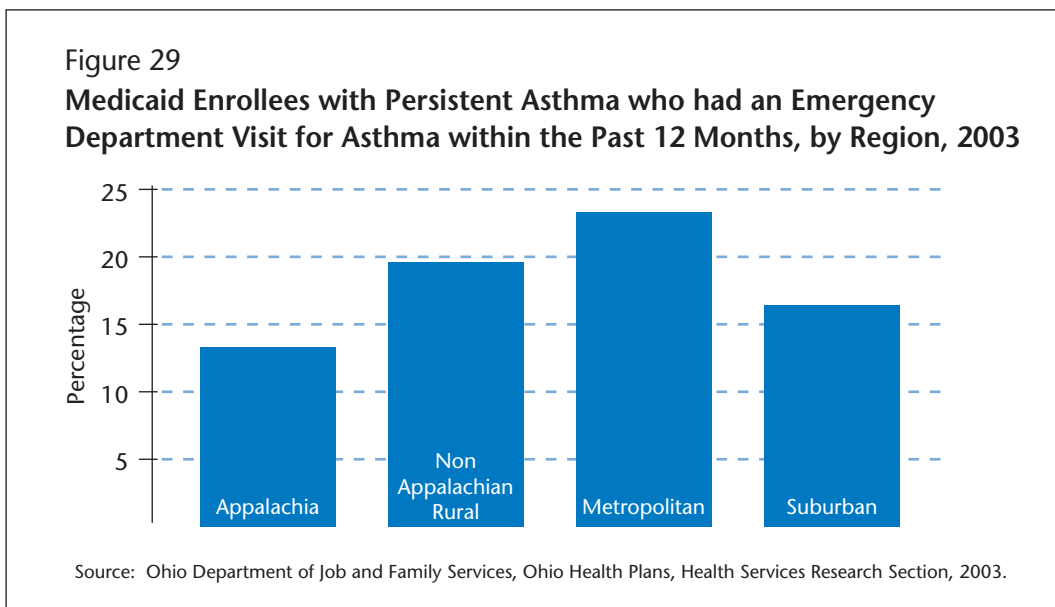


Figure 29 shows Medicaid enrollees with persistent asthma who live in metropolitan areas were most likely to have an ED visit for asthma in the past 12 months. Those living in Appalachia were the least likely to have an ED visit for asthma.

The Burden of Asthma in Ohio

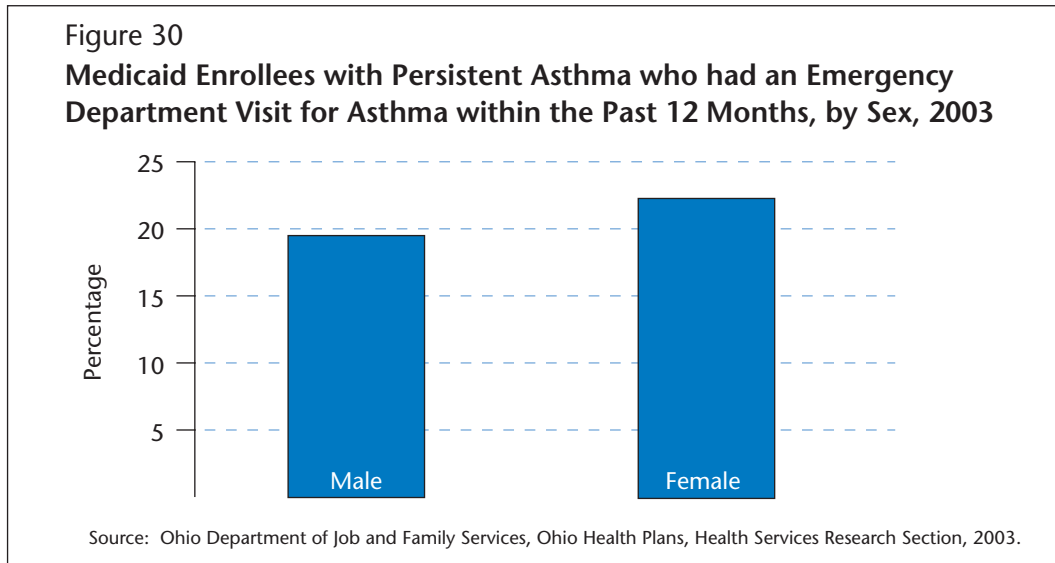
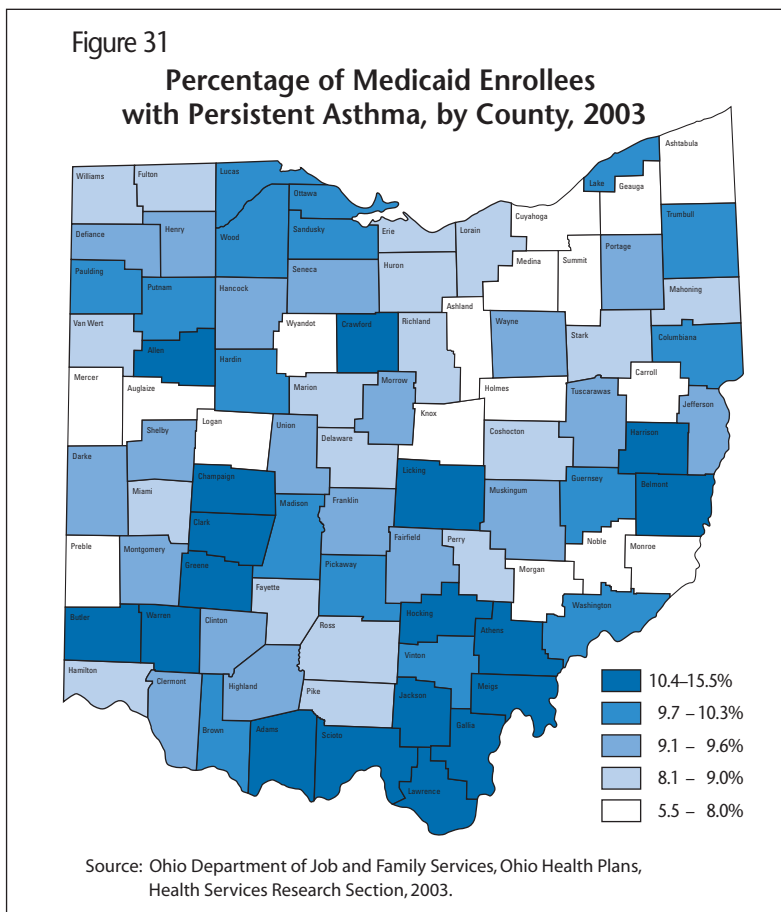


Figure 30 shows that females with persistent asthma were more likely to have an ED visit for asthma within the past 12 months at 21.3 percent than male enrollees with persistent asthma at 18.6 percent.



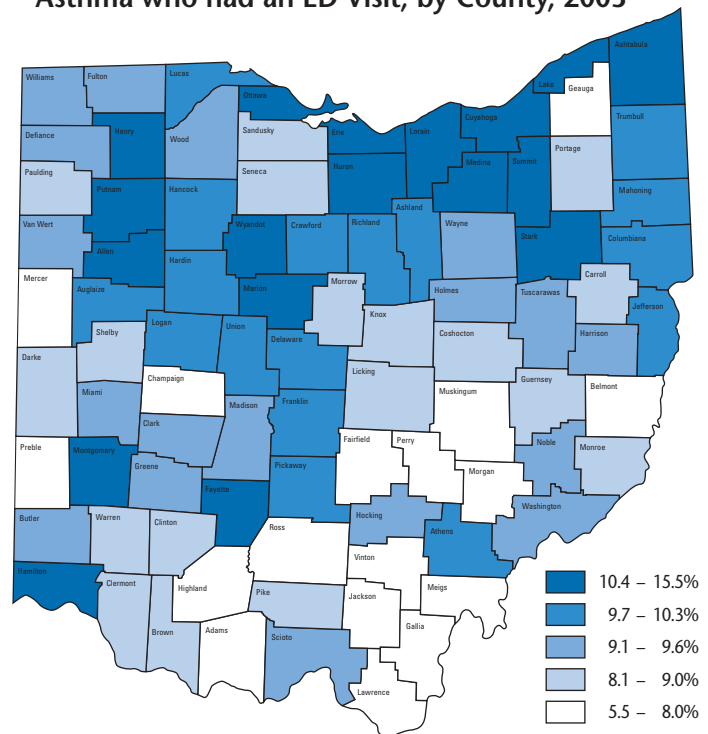
Most of the counties with the highest percentages of Medicaid enrollees with persistent asthma are in the Southern half of Ohio. Many counties are in the Appalachian region along the Ohio River. The highest percentage of Medicaid enrollees with persistent asthma was found in Adams County, at 15.5 percent and the lowest was in Noble County at 5.5 percent. It is interesting to note the four counties with the highest percentages of identified Medicaid enrollees with persistent asthma (Adams, Scioto, Lawrence and Gallia) are all located at the southernmost point of Ohio, and are all among the 10 counties in Ohio with highest ratings of poverty (US Bureau of Census, 2000).

The Burden of Asthma in Ohio

This figure shows the geographic distribution of asthma-related ED visits for identified enrollees with persistent asthma. The counties with the highest rate of ED visits for asthma are concentrated in the Northern half of the state, and around the shores of Lake Erie. All urban counties have high rates. ED usage appears to be especially low in the Southeast. The majority of the counties with the lowest rates of ED visits are located in Appalachia.

Figure 32

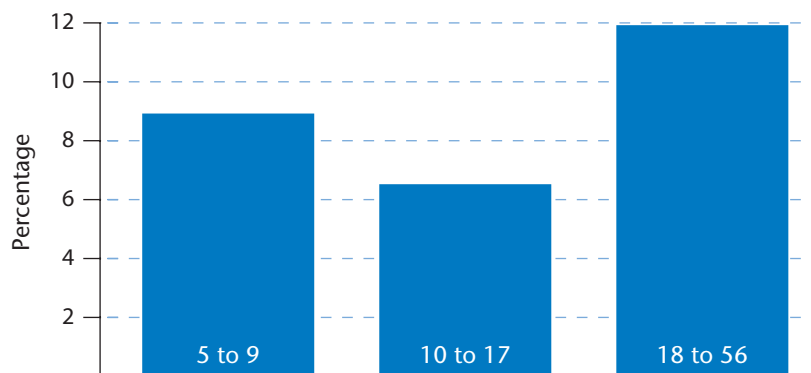
Percentage of Medicaid Enrollees with Persistent Asthma who had an ED Visit, by County, 2003



Source: Ohio Department of Job and Family Services, Ohio Health Plans, Health Services Research Section, 2003.

Figure 33

Medicaid Enrollees with Persistent Asthma, by Age, 2003



Source: Ohio Department of Job and Family Services, Ohio Health Plans, Health Services Research Section, 2003.

Older children aged 10 to 17 are least likely to be identified as persistent asthmatics. Adult Medicaid enrollees are more likely than children to be identified as persistent asthmatics.

Asthma Among Children in Ohio

The 2004 Ohio Family Health Survey (OFHS) is one of the largest and most comprehensive state-level health and insurance surveys ever conducted in the United States, with nearly 40,000 household interviews completed over nine months.

The first and only other OFHS survey was conducted in 1998. The 1998 survey obtained baseline statewide data on:

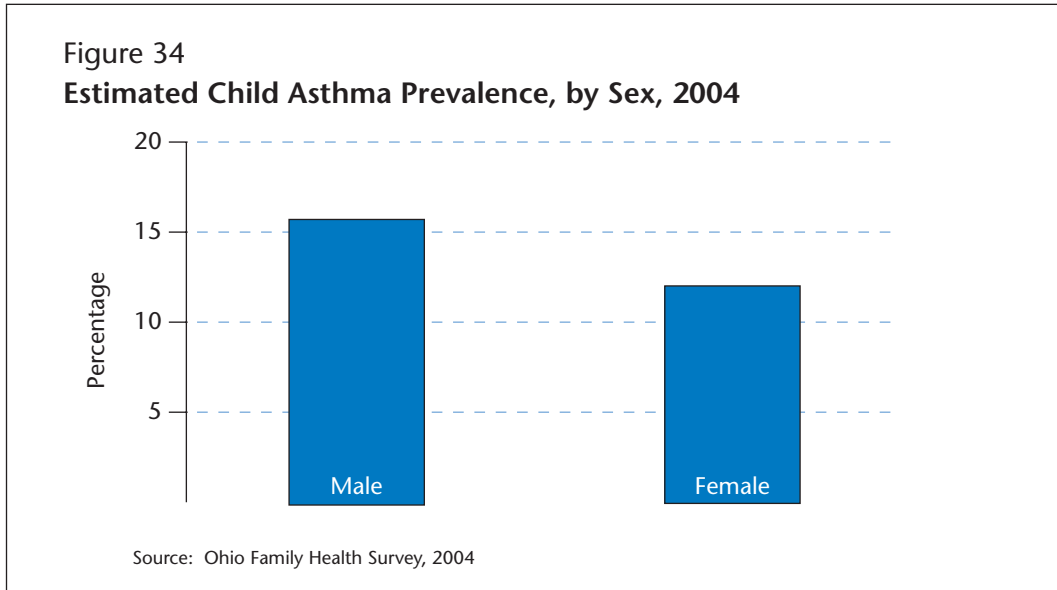
- Health insurance coverage
- Health status
- Health risk behaviors
- Access to care
- Health care utilization
- Health care costs
- Satisfaction with care
- Unmet health needs

Interviews were conducted with one adult in each polled household. The OFHS was conducted by the Ohio Department of Job and Family Services (ODJFS) through an outside vendor.

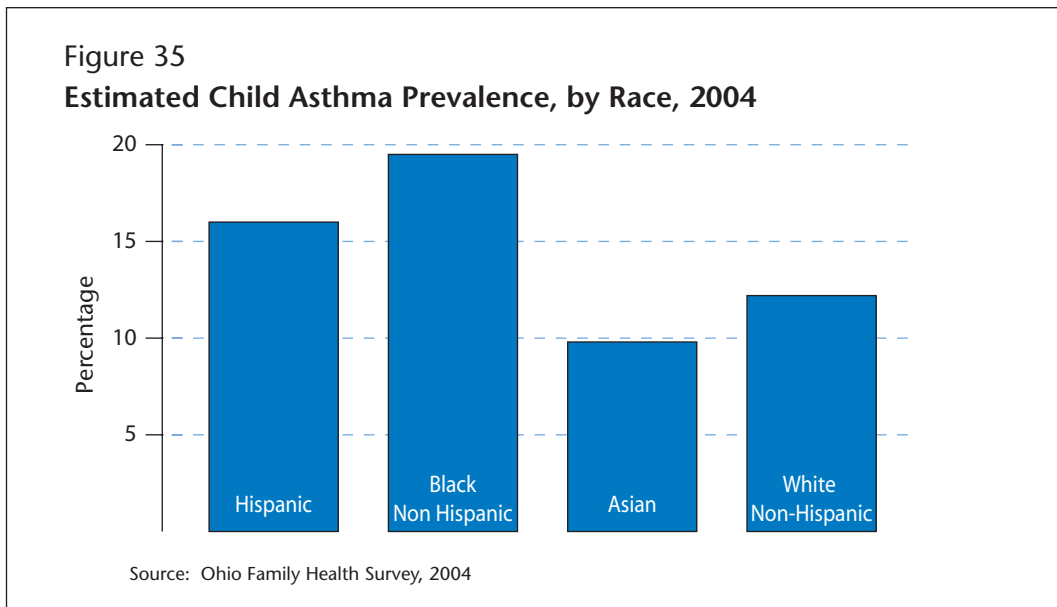
The 2004 survey over-sampled some minority groups such as African-Americans and Hispanics in order to improve the precision of estimates made on the collected data.

Three asthma questions were asked of adults who had children:

1. Has a doctor or other health professional EVER told you that your child has asthma?
2. During the past 12 months, has your child had an episode of asthma or an asthma attack?
3. During the past 12 months, did your child have to visit an emergency room or urgent care center because of his/her asthma?

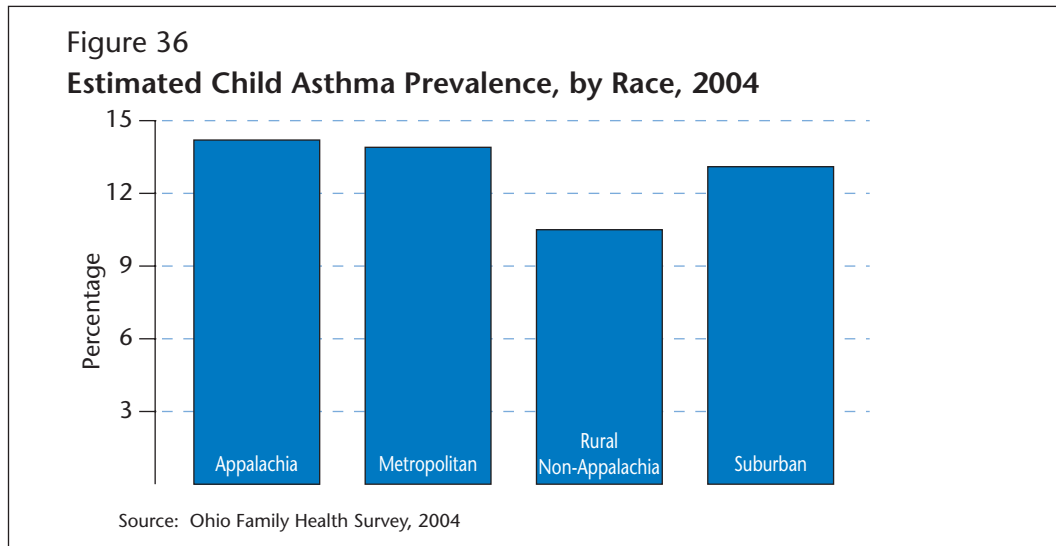


Male children are significantly more likely to be told that they have asthma. With adults, women have a higher prevalence of asthma. Of Ohio boys, 15.1 percent have been told they have asthma, compared with 11.5 percent of girls.



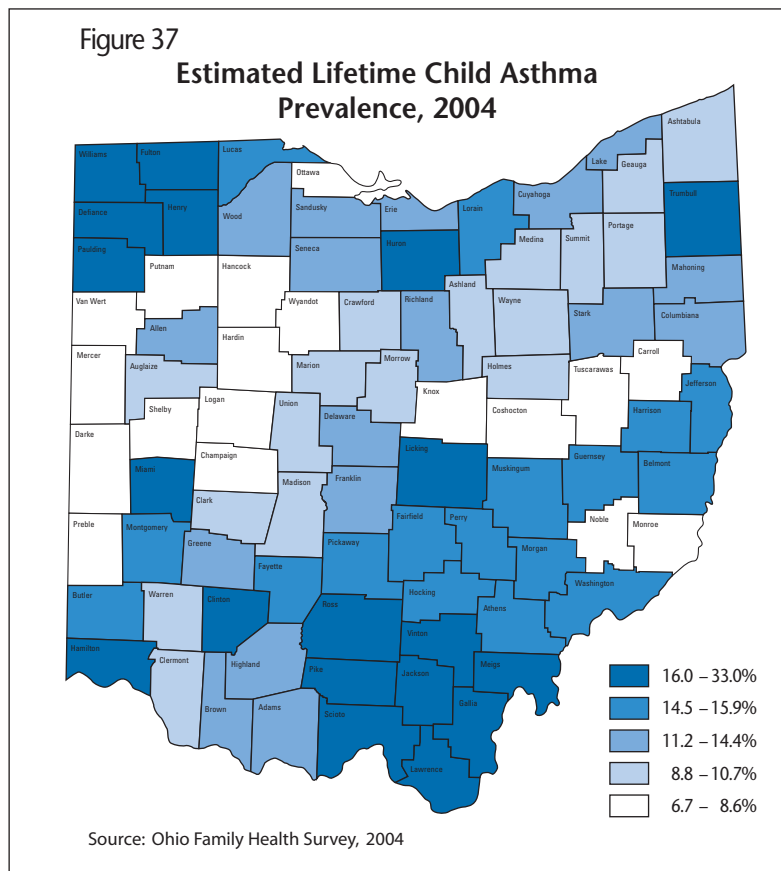
African-American children were the most likely to have asthma; nearly one-fifth (19.5 percent) were reported to have asthma, a significant difference from white children. In comparison, 12.2 percent of whites, 9.5 percent of Asians and 16.0 percent of Hispanic children were reported to have asthma.

The Burden of Asthma in Ohio



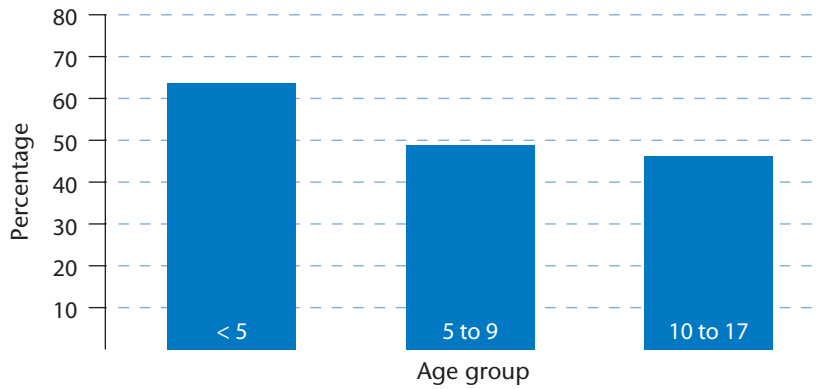
The region with the highest prevalence of child asthma was Appalachia (29 rural counties along the Ohio River valley), at 14.2 percent. Interestingly, rural counties that were not part of Appalachia had the lowest prevalence, at 10.5 percent.

Children living below poverty level are significantly more likely to have asthma than children living above it. More than one in five children living below the federal poverty level (20.6 percent) were reported to have asthma, compared to 10.7 percent of children whose parents earned three times or more of poverty level income.



Lifetime asthma prevalence is highest for children in Clinton County, at 33 percent. Prevalence is lowest in Preble, Darke and Mercer counties at 6.7 percent.

Figure 38
Child Asthma Attack Rate, by Age, 2004

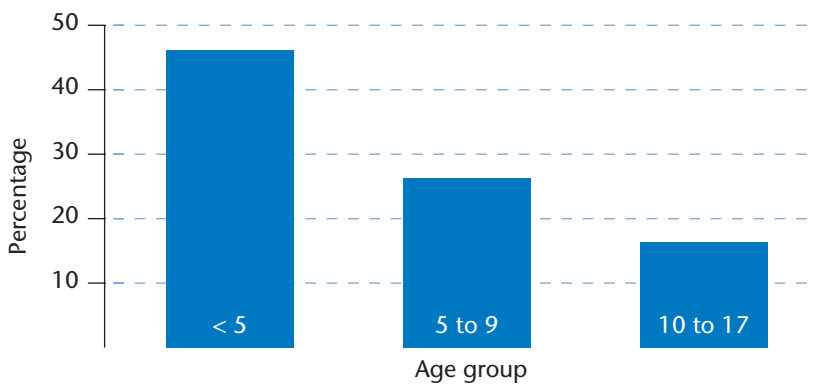


Source: Ohio Family Health Survey, 2004

More than one-half of children with asthma (50.3 percent) had an episode or attack within the past 12 months.

Nearly one-quarter (24.1 percent) had an emergency department or urgent care visit within the past 12 months.

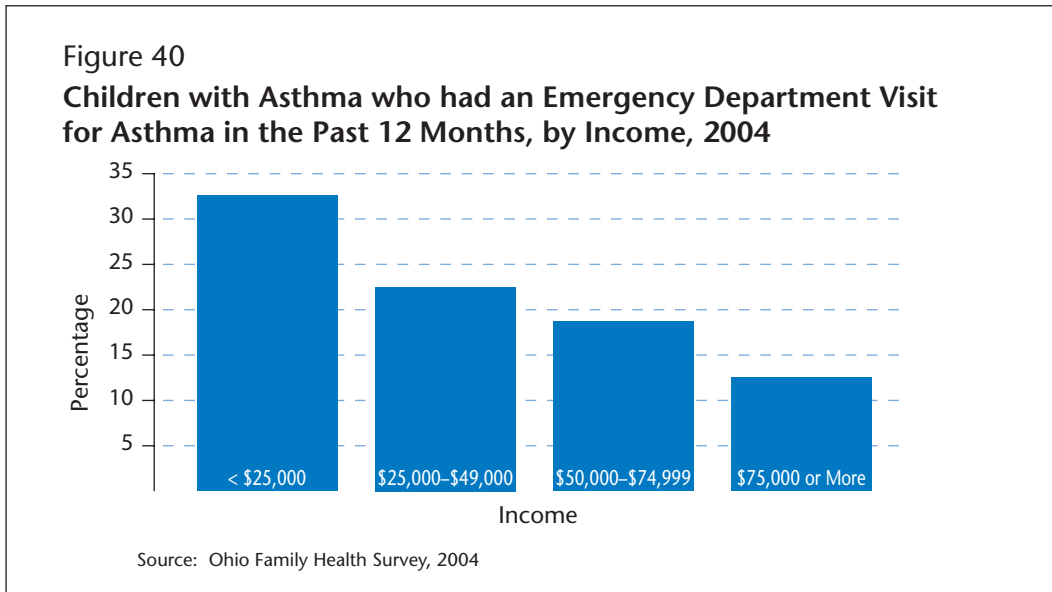
Figure 39
Children with Reported Asthma who had an Emergency Department Visit for Asthma within the Past 12 Months, by Age, 2004



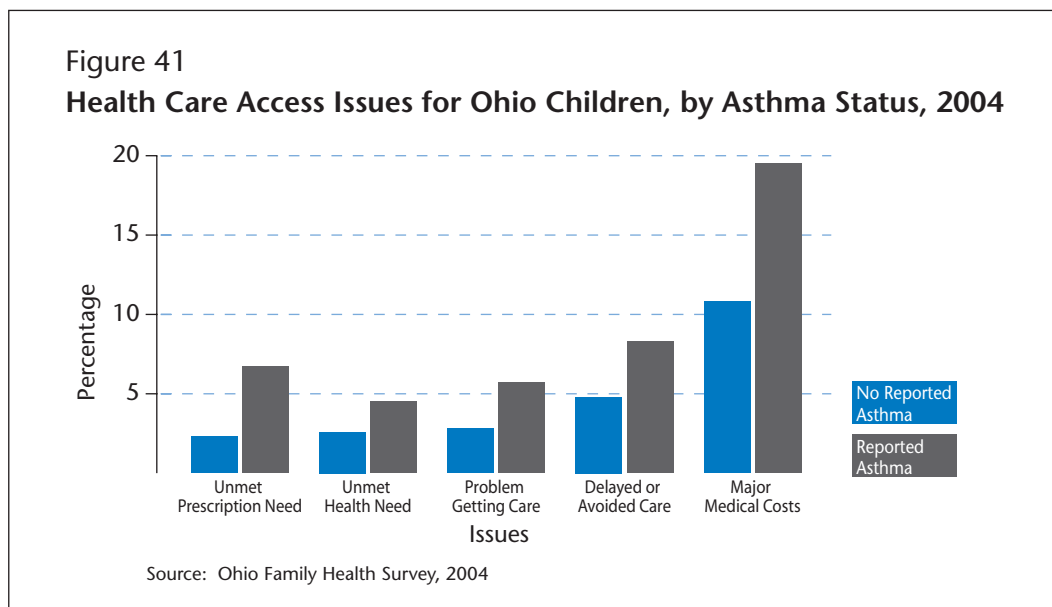
Source: Ohio Family Health Survey, 2004

Nearly one-quarter (24.1 percent) had an emergency department or urgent care visit within the past 12 months.

Young children have a much higher rate of ED use than adults, with the highest group of all being children under the age of 5.



Children with asthma who came from families who earned less than \$25,000 per year were significantly more likely to have an emergency room visit for asthma than children from families who earned \$75,000 and over.



Parents who reported a child having asthma are significantly more likely to face a variety of health care-access issues than parents who do not have a child with asthma. Children with reported asthma are more likely to have an unmet prescription need, an unmet health need, face a problem getting care and experience delayed or avoided care. The parents are nearly twice as likely to face major medical costs as parents who do not report a child with asthma.

Appendix

Behavior Risk Factor Surveillance System questions

Section 8: Asthma

- 8.1 Have you ever been told by a doctor, nurse or other health professional that you had asthma?
- 8.2 Do you still have asthma?

Module 9: Adult Asthma History

Previously you said you were told by a doctor, nurse or other health professional that you had asthma.

- 1. How old were you when you were first told by a doctor, nurse or other health professional that you had asthma?
- 2. During the past 12 months, have you had an episode of asthma or an asthma attack?
- 3. During the past 12 months, how many times did you visit an emergency room or urgent care center because of your asthma?
- 4. During the past 12 months, how many times did you see a doctor, nurse, or other health professional for urgent treatment of worsening asthma symptoms?
- 5. During the past 12 months, how many times did you see a doctor, nurse or other health professional for a routine checkup for your asthma?
- 6. During the past 12 months, how many days were you unable to work or carry out your usual activities because of your asthma?
- 7. Symptoms of asthma include cough, wheezing, shortness of breath, chest tightness, and phlegm production when you don't have a cold or respiratory infection. During the past 30 days, how often did you have any symptoms of asthma?
- 8. During the past 30 days, how many days did symptoms of asthma make it difficult for you to stay asleep?
- 9. During the past 30 days how often did you take asthma medication that was prescribed or given to you by a doctor? This includes using an inhaler.

The Burden of Asthma in Ohio



Ohio Department of Health
Asthma Program
Indoor Environments Section