

FINAL REPORT AND  
RECOMMENDATIONS  
TO THE GOVERNOR AND  
OHIO GENERAL ASSEMBLY

# Ohio

STATE HEALTH ASSESSMENT  
2011





---

## **2011 State Health Assessment**

### Ohio Department of Health

Photos in this report are credited to the Ohio Department of Health. All material contained in this report is in the public domain and may be reprinted without special permission; citation as to source, however, is appreciated.

#### **Suggested Citation:**

*Ohio Department of Health. 2011 State Health Assessment. Columbus, OH. November, 2011.*

#### **Online:**

To view this report online, visit the Resources section on our website at:

<http://www.odh.ohio.gov>.

Click on **Publications**, then click **Report** to locate the **2011 State Health Assessment**

Ohio Department of Health  
246 N High Street  
Columbus, Ohio 43215

614-466-3543  
<http://www.odh.ohio.gov>



John Kasich  
Governor  
State of Ohio

Theodore Wymyslo, M.D.  
Director  
Ohio Department of Health

Acknowledgements:

This report is the result of months of dedicated effort by members of the Planning Council. Those members include the following:

Terry Allan, Chip Allen, Jenny Bailer, Elaine Borawski, Kathy Boylan, Debora Branham, Nicole Brennan, Chad Brown, Wally Burden, Joyce Calland, Jack Cameron, Jim Castle, Lilleana Cavanaugh, Elizabeth Conrey, Amy Davis, Angela Dawson, Sharon Denham, Mary DiOrio, Rosemary Duffy, Doug Fisher, Kelly Friar, Mary Gallagher, Jillian Garratt, Rosemarie Gearhart, Ruth Gerding, Anne Goon, Ron Graham, Lois Hall, Shelia Hiddleson, Kristen Hildreth, Rebecca Holland, Nancy Hood, Karen Hughes, Beverly Huth, Camille Jones, Chester Jourdain, Chris Kippes, Bonnie Kirsch, Larry Long, Kathy Lordo, Will McHugh, Robert McLelland, Cameron McNamee, Julie Miller, Dan Mix, Adam Negley, Angela Norton, Jason Orcena, Sara Paton, Kenneth Pearce, Joanne Pearsol, David Polakowski, Barb Pryor, Tom Quade, Stan Saalman, Theresa Seagraves, Stefani Sesler Ruiz, Najeebah Shine, Holly Sobotka, Ann Spicer, Lisa Stafford, Duane Stansbury, Robyn Taylor, Linda Thumboli, Andrew Wapner, Britney Ward, Melissa Wervey Arnold, Jon Wills.

In addition, we are especially grateful for the work of several epidemiologists and subject matter experts within the Ohio Department of Health who compiled the data and completed in-depth analyses. These dedicated staffers include the following: Angela Allen, Chip Allen, Christy Beeghly, Jeremy Budd, Mandy Burkett, Robert Campbell, Elizabeth Conrey, Elizabeth Cross, Andre Dailey, Amy Davis, Sietske de Fijter, Amber Detty, Mary DiOrio, Rosemarie Gearhart, Connie Geidenberger, Carrie Hornbeck, Jennifer Jones, Lisa Lane, Debbie Merz, Marika Mohr, Angela Norton, John Paulson, Gene Phillips, Donald Reed, Heather Reed, Rhiannon Richman, Kaliyah Shaheen, Ed Socie, Melissa Vonderbrink, Andrew Wapner. Thanks, too, to Lisa Klancher in the Office of Public Affairs for creating the document and website to share these data publicly. And finally, an extra special thank you to Holly Sobotka, Rosemary Duffy, Elizabeth Conrey and Andrew Wapner who went above and beyond the call of duty to see that this assessment was completed (correctly!)

# CONTENTS

## EXECUTIVE SUMMARY

## INTRODUCTION

1. Leading Causes of Death.....	1
2. Chronic Diseases and Conditions .....	1
3. Infectious/Communicable Diseases .....	1
4. Injuries.....	1
5. Health Behaviors .....	1
6. Clinical Risk Factors.....	1
7. Screening / Recommended Care.....	1
8. Maternal & Child Health	
1.) Preconception .....	1
2.) Perinatal .....	1
3.) Infant.....	1
4.) Child / Adolescent .....	1
9. Health Status and Access to Care.....	1
10. Environmental Health.....	1
11. Economic Impact .....	1
DATA DICTIONARY .....	1
DATA SOURCE DETAILS .....	1

## EXECUTIVE SUMMARY

## INTRODUCTION

Ohio Department of Health

### **State of Ohio's Health 2011 State Health Assessment**

Public health is a multi-disciplinary field dedicated to protecting and improving the health of communities and populations through the promotion and support of healthy lifestyles, health-related programs and research, and data analysis. A critical piece of this mission is to monitor the health status of a population. To fulfill this essential service, public health practitioners utilize surveillance and other sources of data to assess their community's health by: following trends in both health and disease and the factors that may precipitate them; measuring the success of public health and other initiatives to impact those factors; identifying community strengths and prioritizing needs; and identifying the underlying causes of health and disease that must be addressed to ultimately improve the health and wellness of the population.

In Ohio, the 2011 State Health Assessment (SHA) represents the first step in a multi-part process to identify and better address the population health needs of the state. The second step will involve the creation of a State Health Improvement Plan (SHIP), utilizing the SHA as well as other data sources, to identify and prioritize goals and objectives to help fulfill the public health system's mission to protect and improve the health of all Ohioans.

This health assessment includes 11 areas of focus addressing disease burden, including data on the leading causes of death in Ohio; the prevalence of certain chronic, communicable, and infectious diseases; unintentional and intentional injury rates; health behaviors, clinical risk factors, and recommended care; maternal and child health; health system access; and environmental health indicators.

#### **State Health Assessment Planning Process**

Conducting population health assessments has been and remains a core function of public health and is an invaluable tool for public health practitioners to use to identify their community's needs, plan and implement effective strategies, and evaluate the success of those interventions. At the state level, a comprehensive assessment of health and disease will allow ODH and partners from across the state to better prepare to meet the rapidly changing needs of Ohioans. The State Health Assessment is also an important step in ODH's efforts to meet new national public health accreditation standards (as stated by the newly formed Public Health Accreditation Board). These standards require states to perform and update a systematic collection and analysis of health and health-related data every five years—a process that will provide ODH with a solid foundation for future decision-making, and while ensuring that ODH works collaboratively with the broader public health system in Ohio to respond to both immediate and long-term health needs of Ohio.

From the beginning, ODH set a priority to include as many partners as possible to allow for broad representation from public health (local health departments, health advocates, etc...), health care (providers, payers, and consumer groups), and other interested agencies and parties. This group was brought together to form the

Ohio SHA Planning Council in October 2010 and was charged with guiding the collaborative process and engaging their respective constituent groups to participate. To facilitate an efficient process, the Planning Council formed a smaller steering committee to develop the document and its contents and a larger, more inclusive advisory committee to review and provide feedback along the way. Membership throughout this process was kept open and numerous potential partners were identified and engaged during the process.

### ■ ■ ■ ■ The 2011 State Health Assessment Report

While the SHA will serve as the foundation for the creation of ODH's SHIP, its use does not end with ODH. Other agencies, including local health departments and non-profit hospitals, are required to complete community health assessments, either as part of meeting PHAB standards or as part of other state and/or federal requirements. The perspectives these agencies brought to the development of this statewide assessment maximized the use of data and reduced potential redundancies in future efforts. While much of the data presented here is at the state level, the goal was to create a community health assessment template that includes indicators that are also available at the local level. Therefore, local jurisdictions can tailor their assessments to their communities' priorities based on the framework of the SHA.

This document presents the results of the efforts of both the SHA advisory committee and a number of subject matter experts to define the appropriate content for an initial state health assessment report. The amount of health-related data available is immense, and without prioritization any detailed report would be too voluminous to read. Therefore, the advisory committee purposefully chose the most relevant data to present in more detail—highlighted by text describing the data, with trends or comparisons discussed when available—with other relevant data listed only in table format. This allows for the creation of a more complete report and further analysis as needed, while maintaining the document's readability and relevance.

### ■ ■ ■ ■ The Social Determinants of Health

An important beginning step in a population health assessment involves understanding the people living in the community. While this demographic information has traditionally been used only to help define the population in question, it is now understood that these factors, often referred to as the social determinants of health—race and ethnicity, education, poverty, employment and others—have both direct and indirect effects on and are significant predictors of health and disease. Furthermore, these indicators are associated with multiple health issues—chronic diseases, injuries, health system utilization, mental health—and if addressed can lead to a cascade of successful outcomes and improved overall health and wellness.

These determinants are part of the social environment in which people are born, grow up, live, learn, work, play, and age, but also include other factors, such as access to health care (discussed later in this report), access to healthy and unhealthy food, availability of safe places for play, and the social infrastructure of a community. Together with aspects of the structural environment, or built environment, these factors lay the foundation for a community's ability to support health and are vital to both understanding the needs of the population and to creating sustainable solutions.

The following data represent both a demographic view of Ohio as well as an initial picture of those indicators that play a substantial role in health. This SHA report does not present a complete set of these data, nor

does it analyze the association between each indicator and health, but future reports will address these issues more carefully. Additionally, continued analysis is needed at the state and local levels to investigate how each of these indicators interact with other factors of health to fully understand the underlying causes of the diseases, risk factors, and health behaviors presented in this report.

### ■ ■ ■ Population Overview

In 2010, Ohio was home to 11,536,504 residents, of which 83% were white, 12% were black, and 5% were another race or two or more races. In addition, 3.1% of Ohio residents were Hispanic/Latino ethnicity. The following population categories increased 45% or more in Ohio in the last decade: Asian, other race, Native Hawaiian/Pacific Islander, two or more races, and Hispanic/Latino (Table A.1). Approximately 14% of Ohio's population was aged  $\geq 65$  years in 2010, while 23.7% of the population was aged  $< 18$  years.

**Table A.1 Number and Percent of Population by Race, Ethnicity, and Sex – Ohio, 2009-2010**

Characteristic <sup>1</sup>	Year	Number (%)	% change since 2000 <sup>3</sup>
Total population	2010	11,536,504 (100.0)	1.6
<b>Race</b>			
<b>One race</b>	2010	11,298,739 (97.9)	0.9
White	2010	9,539,437 (82.7)	-1.1
African American	2010	1,407,681 (12.2)	8.2
Asian	2010	192,233 (1.7)	44.9
Other	2010	130,030 (1.1)	46.7
American Indian/Alaska Native	2010	25,292 (0.2)	3.3
Native Hawaiian/ Pacific Islander	2010	4,066 (0.0)	47.9
<b>Two or more</b>	2010	237,765 (2.1)	50.6
<b>Ethnicity</b>			
Hispanic	2010	354,674 (3.1)	63.4
<b>Sex</b>			
Male	2009	5,632,221 (48.8)	2.2
Female	2009	5,910,424 (51.2)	1.2

<sup>1</sup>2010 Census Summary File 1 (SF1), U.S. Census Bureau, 2010.

<sup>2</sup>2009 American Community Survey One-Year Estimates, U.S. Census Bureau, 2009

<sup>3</sup>Census 2000 Summary File 1 (SF 1) 100-Percent Data, U.S. Census Bureau, 2000.

In Ohio in 2009, 12.9% of households were female-headed family households with no husband present. In addition, one in 10 households consisted of a householder aged  $\geq 65$  years living alone. Approximately 12% of Ohioans aged  $\geq 25$  years had less than a high school education in 2009, and only 21.4% had a bachelor's degree or higher, an increase of 19.4% since 2000. Among the population aged  $\geq 5$  years, 6.3% of Ohio residents lived in a household where a language other than English was spoken (Table A.2).

**Table A.2 Number and Percent of Population by Selected Social Characteristics – Ohio, 2009**

Social Characteristic	Number (%)	% change since 2000 <sup>2</sup>
<b>Household Type<sup>1</sup></b>		
<b>Total Households</b>	4,526,404 (100)	1.8
<b>Family</b>	2,947,214 (65.1)	-1.5
• Female householder, no husband	585,960 (12.9)	9.1
• With own children aged < 18 years	353,359 (7.8)	9.4
<b>Non-family</b>	1,579,190 (34.9)	8.7
• Householder living alone	1,329,298 (29.4)	9.4
• Aged $\geq 65$ years	456,235 (10.1)	2.2
<b>Educational Attainment<sup>1</sup></b>		
<b>Total Population aged <math>\geq 25</math> years</b>	7,738,348 (100)	4.4
• Less than high school diploma (or equivalent)	957,753 (12.4)	-24.1
• Bachelors degree or higher	1,866,776 (24.1)	19.4
<b>Language spoken at home<sup>1</sup></b>		
<b>Total Population aged <math>\geq 5</math> years</b>	10,805,366 (100)	2.0
• Language other than English spoken at home	681,348	5.1

<sup>1</sup>2009 American Community Survey One-Year Estimates, U.S. Census Bureau, 2009

<sup>2</sup>Household type: Census 2000 Summary File (SF 1) 100-Percent Data, U.S. Census Bureau, 2000. Educational attainment and language spoken at home: Census 2000 Summary File 3 (SF 3) - Sample Data, U.S. Census Bureau, 2000

In 2009, the median household income among residents of Ohio was \$45,395, compared with \$50,221 for the nation as a whole. More than one in 10 (11.1%) Ohio families and 18.7% of Ohio families with children aged <18 years had an annual income below the poverty level in the preceding 12 months. The highest percentage of families living in poverty are those with a female householder and no husband present (33.9%), particularly those with related children aged <5 years only (53.9%). The percentage of Ohio families living below the poverty level increased from 2000 to 2009 for all family types (Table A.3). The percentage of Ohio's civilian noninstitutionalized population with no health insurance coverage was approximately 12% in 2009, including 6.4% of children aged <18 years (Table A.4).

**Table A.3 Percent of Families with Income in Past 12 Months Below Poverty Level – Ohio, 2009**

Social Characteristic	Number (%)	% change since 2000 <sup>2</sup>
<b>Family Type</b>		
<b>All Families<sup>1</sup></b>	11.1	42.3
• With related children aged < 18 years	18.7	53.3
• With related children aged < 5 years only	22.7	41.0
<b>Married couple families<sup>1</sup></b>	4.4	29.4
• With related children aged < 18 years	6.9	60.5
• With related children aged < 5 years only	5.9	7.3
<b>Families with female householder, no husband present<sup>1</sup></b>	33.9	28.9
• With related children aged < 18 years	43.6	26.0
• With related children aged < 5 years only	53.9	9.6

<sup>1</sup>2009 American Community Survey One –Year Estimates, U.S. Census, Bureau, 2009.

<sup>2</sup>Census 2000 Summary File 3 (SF 3) Sample Data, U.S. Census Bureau, 2000.

The percentage of Ohio's population aged  $\geq 16$  years who were unemployed in the civilian labor force increased 125% from 2000 (3.2%) to 2009 (7.2%). The leading occupation for the civilian labor force was management, professional, and related occupations (34.0%), followed by sales and office occupations (25.0%) (Table A.4). According to the Ohio Department of Jobs and Family Services, service-producing industries will account for the majority of job growth through 2018.

**Table A.4 Number and Percent of Population by Selected Economic Characteristics – Ohio, 2009**

Economic Characteristic	Number (%)	% change since 2000 <sup>2</sup>
<b>Health Insurance Coverage<sup>1</sup></b>		
Civilian noninstitutionalized population	11,351,905 (100)	–
• With health insurance coverage	9969267 (87.8)	–
- With private health insurance coverage	8020520 (70.7)	–
- With public health insurance coverage	3343433 (29.5)	–
• No health insurance coverage	1382638 (12.2)	–
Civilian noninstitutionalized population aged < 18 years	2,710,364 (100.0)	–
• No health insurance coverage	172,347 (6.4)	–
<b>Employment Status<sup>1</sup></b>		
Population aged $\geq 16$	9,151,209 (100.0)	
• In labor force	5,935,870 (64.9)	0.2
- Civilian labor force	5,920,413 (64.7)	0.0
- Employed	5,263,199 (57.5)	-6.5
- Unemployed	657,214 (7.2)	125.0
- Armed forces	15,457 (0.2)	100.0
• Not in labor force	3,215,339 (35.1)	-0.3
<b>Occupation<sup>1</sup></b>		
Civilian employed population aged $\geq 16$	5,263,199 (100.0)	
• Management, professional, and related	1,789,724 (34.0)	9.7
• Service	939,192 (17.8)	21.9
• Sales and office	1,317,890 (25.0)	-5.3
• Farming, fishing, and forestry	17,609 (0.3)	0.0
• Construction, extraction, maintenance, and repair	405,831 (7.7)	-11.5
• Production, transportation, and material moving	792,953 (15.1)	-20.5

<sup>1</sup>2009 American Community Survey One –Year Estimates, U.S. Census, Bureau, 2009.

<sup>2</sup>Census 2000 Summary File 3 (SF 3) Sample Data, U.S. Census Bureau, 2000.

– Not available

# LEADING CAUSES OF DEATH



## LEADING CAUSES OF DEATH

In Ohio, 109,898 residents died from all causes in 2009. The 2009 annual mortality rate due to all causes was 7% higher in Ohio (812.7 deaths per 100,000), compared with the United States (758.7 deaths per 100,000 in 2008). Chronic diseases, particularly heart disease, cancer, chronic lower respiratory disease (CLRD), stroke, and diabetes, along with unintentional injuries such as poisonings, motor vehicle traffic crashes, and falls, accounted for the majority of all deaths in Ohio in 2009 (Table 1.1). However, leading causes of death differ in a population depending on the age, sex, race/ethnicity, and socioeconomic status of individuals within that population. For example, the 2009 homicide mortality rate among blacks in Ohio was 8.5 times the rate among whites; whereas the suicide mortality rate was 50% lower among blacks, compared with whites (Table 1.2).

**Table 1.1 Annual Age-Adjusted Mortality Rates\* for the Leading Causes of Death – Ohio, 2009 and United States, 2008**

Cause of Death <sup>1,2</sup>	Ohio Rate	United States Rate
All causes (total deaths)	812.7	758.7
Diseases of heart	193.2	186.7
Malignant neoplasms (cancer)	190.3	175.5
Chronic lower respiratory diseases	50.4	44.0
Cerebrovascular diseases (stroke)	41.7	40.6
Unintentional injuries	38.8	38.6
Alzheimer's disease	28.3	24.4
Diabetes mellitis	25.9	21.8
Influenza and pneumonia	15.3	27.0
Nephritis, nephrotic syndrome, and nephrosis	14.4	14.8
Septicemia	11.5	11.1
Suicide	11.6	11.6
Chronic liver disease and cirrhosis	8.9	9.2
Parkinson's disease	6.9	6.4
Homicide	5.5	5.9

<sup>1</sup>Ohio source: Ohio Department of Health, Vital Statistics Program, Center for Public Health Statistics and Informatics, 2011

<sup>2</sup>U.S. source: National Center for Health Statistics, 2011

\* per 100,000 population

**Table 1.2 Black/White Ratio of Annual Age-Adjusted Mortality Rates\* for the Leading Causes of Death – Ohio, 2009 and United States, 2007**

Cause of Death <sup>1,2</sup>	Ohio Black / White Ratio	United States Black / White Ratio
All causes (total deaths)	1.3	1.3
Diseases of heart	1.2	1.3
Malignant neoplasms (cancer)	1.2	1.2
Chronic lower respiratory diseases	0.8	0.7
Cerebrovascular diseases (stroke)	1.4	1.5
Unintentional injuries	0.9	0.9
Alzheimer's disease	1.1	0.8
Diabetes mellitis	1.8	2.1
Influenza and pneumonia	1.0	1.2
Nephritis, nephrotic syndrome, and nephrosis	1.8	2.2
Septicemia	1.9	2.2
Suicide	0.5	0.4
Chronic liver disease and cirrhosis	1.2	0.8
Parkinson's disease	0.4	0.5
Homicide	8.5	7.4

<sup>1</sup>Ohio source: Ohio Department of Health, Vital Statistics Program, Center for Public Health Statistics and Informatics, 2011

<sup>2</sup>U.S. source: National Center for Health Statistics, 2011.

\* per 100,000 population

Another way to assess the effects of death and disease on a population is to calculate the years of potential life (YPLL) lost for each indicator. YPLL estimates the number of years lost for each cause of death and is a measure of premature mortality. Presented in Table 1.3 are the years of potential life lost (YPLL) prior to age 75 and age-adjusted YPLL rates per 1,000 people by cause of death in Ohio for 2009. The age-adjusted YPLL due to cancer in Ohio was 15.7 per 1,000 people in 2009, and diseases of the heart and unintentional injuries each resulted in 10.7 YPLL per 1,000 Ohioans (Table 1.3). These conditions, along with suicide, homicide, CLRD, and diabetes, are also the primary causes of both death and disability, contributing heavily to the burden of healthcare costs in Ohio.

**Table 1.3 Years of Potential Life Lost (Ypll) and Age-Adjusted Rates\* of Ypll by Cause of Death – Ohio, 2009**

Causes of death <sup>1</sup>	YPLL prior to age 75 years	Age-adjusted YPLL rate (0-74 years)
All causes (total deaths)	834,691	72.7
Malignant neoplasms (cancer)	192,667	15.6
Diseases of the heart	129,480	10.7
Unintentional injuries	112,142	10.7
Suicide	40,747	3.9
Homicide	25,724	2.5
Chronic lower respiratory disease	27,100	2.1
Diabetes mellitus	23,985	2.0
Stroke	20,720	1.7
Chronic liver disease and cirrhosis	17,875	1.5
Influenza and pneumonia	12,441	1.1
Septicemia	10,286	0.9
Nephritis, nephrotic syndrome and nephrosis	7,880	0.6
Hypertension (essential)	4,349	0.4
Parkinson's disease	770	0.1
Alzheimer's disease	1,459	0.1

<sup>1</sup> Ohio Department of Health, Vital Statistics Program, Center for Public Health Statistics and Informatics, 2011

\*per 1000 population

# CHRONIC DISEASES & CONDITIONS



## CHRONIC DISEASES & CONDITIONS

Chronic diseases (e.g., heart disease, stroke, diabetes, arthritis, asthma, and cancer) are among the most common, costly, and preventable of all health problems in both the United States and Ohio. These diseases, and the suffering and disability associated with them, are largely the result of four health behaviors: tobacco use, poor nutrition, lack of physical activity, and excessive alcohol use. In 2009, five of the seven leading causes of death in Ohio were attributed to chronic diseases (heart disease, cancer, CLRD, stroke, and diabetes), accounting for 61% of all deaths among Ohio residents. Chronic disease was estimated to cost Ohio approximately \$60 billion in health care costs and lost productivity in 2003, and without significant change these costs are projected to increase by nearly \$100 billion by 2023.<sup>1</sup>

The prevalence of many chronic diseases in Ohio is estimated using data from the Ohio Behavioral Risk Factor Surveillance System (BRFSS). ODH, in conjunction with the Centers for Disease Control and Prevention (CDC), annually conducts the BRFSS through household interviews of randomly selected adults aged ≥18 years. According to data from the Ohio BRFSS in 2009, an estimated 4.2% of Ohio adults have been told by a doctor that they had angina or coronary heart disease; 4.4% have had a heart attack; and 3.1% have had a stroke. Nearly one in three (30.8%) Ohio adults have had a diagnosis of arthritis, and one in 10 (9.9%) have asthma (Table 2.1).

In recent years, the prevalence of diabetes has increased substantially in both Ohio and the United States. In the past 15 years in Ohio, diabetes prevalence increased nearly two and a half times, from 4.2% in 1995 to 10.1% in 2009. Diabetes prevalence is similar among males (10.3%) and females (10.0%) but is greater among blacks (12.7%) and Hispanics (13.2%), compared with whites (9.9%) (Table 2.1).

**Table 2.1 Prevalence (Percent) and 95% Confidence Intervals (CI) of Selected Chronic Diseases and Conditions – Ohio and United States, 2009**

Chronic Disease <sup>1,2</sup>	Ohio % (95% CI)	United States % (95% CI)
Adults (18+) ever told had angina or coronary heart disease	4.2 (3.8-4.7)	3.8
Adults (18+) ever told had heart attack	4.4 (4.0-4.9)	4.0
Adults (18+) ever told had stroke	3.1 (2.6-3.5)	2.4
Adults (18+) ever told had arthritis	30.8 (29.6-32.1)	26.0
Adults (18+) who currently have asthma	9.9 (9.0-10.9)	8.8
Adults (18+) ever told had diabetes	10.1 (9.4-10.9)	8.3
• Male	10.3 (9.0-11.5)	8.8
• Female	10.0 (9.1-10.9)	8.2
• White	9.9 (9.1-10.7)	7.8
• Black	12.7 (10.0-15.3)	13.1
• Hispanic	13.2 (6.2-20.1)	7.3

<sup>1</sup> Ohio source: 2009 Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010

<sup>2</sup> U.S. Source: 2009 Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2010. The U.S. prevalence represents the median prevalence of the 50 states and District of Columbia

## ■ ■ ■ Cancer

Cancer surveillance in Ohio benefits from an additional tool to track disease incidence, the Ohio Cancer Incidence Surveillance System (OCISS), the central cancer registry for Ohio. Data from OCISS show that in 2007 a total of 58,079 new invasive cancer cases among Ohio residents were diagnosed and reported to OCISS. The Ohio cancer incidence rate for all types combined was 459.7 per 100,000 persons in 2007 and was similar to the Surveillance, Epidemiology, and End Results (SEER) Program national rate of 461.1 per 100,000 people. Incidence rates in Ohio were 32% greater among males (537.4 per 100,000), compared with females (407.7 per 100,000) and 7% greater among blacks (478.4 per 100,000), compared with whites (447.7 per 100,000). Cancer incidence increases with advancing age; in Ohio in 2007, the incidence rate among adults aged  $\geq 20$  years was 638.5 per 100,000, whereas the rate among children aged 0–19 years was 15.1 per 100,000 (Table 2.2).

In 2007, the four leading types of cancer in Ohio were lung and bronchus, colon and rectum, breast, and prostate. The incidence rate of lung and bronchus cancer was 20% greater in Ohio (71.0 per 100,000), compared with the United States (59.3 per 100,000). The leading type of cancer incidence among females in Ohio was breast cancer (117.7 per 100,000), and the leading type among males was prostate cancer (148.1 per 100,000). The stage (degree of spread) of cancer at diagnosis is highly related to the probability of survival; those cancers diagnosed at a later stage have the least favorable prognosis. The rate of late stage (defined as regional or distant spread) at diagnosis in Ohio in 2007 was 197.9 per 100,000, compared with 208.1 per 100,000 in the United States; however, this lower rate in Ohio is likely related to the higher rate of unstaged (insufficient data for staging)/unknown stage cancers reported in Ohio (44.3 per 100,000 versus 26.0 per 100,000 in Ohio and the United States, respectively) (Table 2.2).

**Table 2.2 Incidence Rate\* of Selected Cancer Types – Ohio and United States, 2007**

Cancer Type <sup>1,2</sup>	Ohio	United States (SEER)
All types combined <sup>1,2</sup>	459.7	461.1
• Male	537.4	536.6
• Female	407.7	407.2
• White	447.7	468.5
• Black	478.4	482.0
• Children (0–19)	15.1	16.7
• Adults (20+)	638.5	639.8
Lung and bronchus <sup>1,2</sup>	71.0	59.3
Colon and rectum <sup>1,2</sup>	47.6	44.7
Breast (female) <sup>1,2</sup>	117.7	124.7
Prostate <sup>1,2</sup>	148.1	165.8
Cervix <sup>1,2</sup>	7.5	6.4
Melanoma of the skin <sup>1,2</sup>	18.8	20.8
Late (regional and distant) stage at diagnosis <sup>1,2,3</sup>	197.9	208.1

<sup>1</sup> Ohio source: Ohio Cancer Incidence Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, data release March 2010

<sup>2</sup> U.S. Source: Surveillance, Epidemiology, and End Results Program, National Cancer Institute, April 2010.

<sup>3</sup> Note: The rate of unstages/unknown stage at diagnosis was 44.3 per 100,000 in Ohio and 26.0 per 100,000 in the U.S.

\* per 100,000 population

## ■ ■ ■ Mental Health

Mental illnesses and chronic diseases are closely related. Many of the associated factors for developing chronic disease are also associated with the development of mental health disorders. Chronic diseases can exacerbate mental health-related symptoms, and the successful treatment and management of chronic disease depends upon the successful treatment and management of concurrent mental illness.

According to 2008 BRFSS data, nearly one in five (19.3%) Ohio adults aged  $\geq 18$  years reported having been told by a doctor or other health professional they had a depressive disorder. The prevalence of having a depressive disorder was significantly greater among females (24.6%), compared with males (13.6%). Additionally, 13.7% of Ohio adults report having had an anxiety disorder, and 20.7% reported limitations in activities because of physical, mental, and/or emotional problems, according to 2008 and 2009 BRFSS data, respectively (Table 2.3).

**Table 2.3 Prevalence (Percent) and 95% Confidence Intervals (CI) of Selected Mental Health Conditions – Ohio and United States, 2009**

Mental Health Condition	Year	Ohio % (95% CI)	United States% (95% CI)
<b>Adults (18+) ever told had depressive disorder<sup>1</sup></b>	2008	19.3 (17.8-20.8)	–
• Male		13.6 (11.6-15.7)	–
• Female		24.6 (22.5-26.7)	–
• White		19.4 (17.8-20.9)	–
• Black		17.3 (12.2-22.3)	–
<b>Adults (18+) ever told anxiety disorder<sup>1</sup></b>	2008	13.7 (12.4-15.0)	–
<b>Adults (18+) limited in activities due to physical, mental, emotional problems<sup>2,3</sup></b>	2009	20.7 (19.6-21.9)	18.9

<sup>1</sup> Ohio source: 2008 Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2009

<sup>2</sup> Ohio source: 2009 Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010.

<sup>3</sup> U.S. source: 2009 Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2010. The U.S. prevalence represents the median prevalence of the 50 states and District of Columbia.

– Notavailable

# INFECTIOUS & COMMUNICABLE DISEASES



## INFECTIOUS & COMMUNICABLE DISEASES

The Ohio Department of Health (ODH), in conjunction with Ohio's local health departments, continuously monitors and responds to approximately 80 different specific infectious diseases that can be transmitted from infected humans, animals, food, water and the environment. In addition, ODH also responds to infectious disease outbreaks caused by all infectious disease agents, not just those routinely monitored. Infectious disease outbreaks are categorized into the following classifications: foodborne, waterborne, healthcare-associated, institutional, community, and zoonotic.

The disease and outbreak information in this section have been selected for presentation for different reasons. Some of the sexually transmitted infections are among the most commonly reported infectious diseases in Ohio. Infectious disease outbreaks are of increasing public health concern, with health care-associated outbreaks receiving great attention from both private and public health sectors. Foodborne diseases are commonly reported in Ohio, and food safety is an increasingly important national public health concern. Additionally, vaccine-preventable diseases have had recent outbreaks in Ohio (i.e. meningococcal disease, *Bordetella pertussis*) and continue to be a focus of the public health system.

### ■ ■ ■ HIV and AIDS

*Human Immunodeficiency Virus* (HIV), the virus that causes Acquired Immune Deficiency Syndrome (AIDS), remains a major public health concern in Ohio and the nation and requires ongoing prevention and testing interventions for high-risk populations.

### ■ ■ ■ Diagnoses of HIV Infection

Diagnoses of HIV infection includes reports of persons diagnosed with HIV (not AIDS), persons diagnosed with HIV subsequently diagnosed with AIDS, and persons concurrently diagnosed with HIV and AIDS. Males, persons aged 25–34 years, and blacks accounted for most of the newly reported diagnoses of HIV infection in Ohio in 2009 (Table 3.1). Seventy-nine percent (79%) of persons diagnosed with HIV in Ohio in 2009 were male. While approximately the same number and proportion of white and black males were diagnosed with an HIV infection in 2009 (439 and 39% white males, 406 and 36% black males); more than two times as many black females were diagnosed with an HIV infection compared with white females. Almost three times as many Hispanic males were diagnosed with an HIV infection compared with Hispanic females (Table 3.1). The true incidence of HIV infection in Ohio is not known, however, because many persons may be infected but have not been tested and do not know their HIV status.

### ■ ■ ■ Persons Living with a Diagnosis of HIV Infection

Persons living with a diagnosis of HIV infection are those with a diagnosis of HIV and/or AIDS who are not known to have died at the time the prevalence estimate was calculated. Males, persons aged 45–54 years, and whites accounted for the majority of persons living with a diagnosis of HIV infection in Ohio in 2009. Although more whites than blacks are living with an HIV infection, the rate per 100,000 among blacks is six times greater, and the rate among Hispanics is almost three times greater, compared with whites living with a diagnosis of HIV infection (Table 3.1). Additional Ohio HIV and AIDS data are available at: <http://www.odh.ohio.gov/healthStats/disease/hivdata/hivcov.aspx>

**Table 3.1 New Diagnosis of Human Immunodeficiency Virus (Hiv) Infection and Persons Living with a Diagnosis Of HIV Infection, By Sex, Age, and Race/Ethnicity – Ohio, 2009**

Characteristic	New diagnosis of HIV infection <sup>1</sup>		Persons living with a diagnosis of HIV infection <sup>2</sup> in Ohio	
	Number	%	Number	Rate per 100,000 population <sup>3</sup>
Sex				
Males	895	79	12,208	217.9
Females	234	21	3,234	55.0
Unknown	–	–	–	*
Age(years)				
<13	7	1	55	2.8
13—14	–	–	26	8.4
15—24	261	23	523	33.3
25—34	304	27	2,059	140.7
35—44	274	24	4,631	297.7
45—54	201	18	5,588	319.1
55—64	74	7	2,112	158.5
65+	8	1	448	28.5
Race/ethnicity				
White, not Hispanic	502	44	7,643	80.1
Black, not Hispanic	558	49	6,765	478.7
Hispanic	46	4	712	235.7
Asian/Pacific Islander	9	1	71	36.5
American Indian/Alaska Native	–	–	20	66.4
Unknown	14	1	231	*
Race by sex				
White, not Hispanic males	439	39	6,581	141.1
White, not Hispanic females	63	6	1,062	21.7
Black, not Hispanic males	406	36	4,862	722.7
Black, not Hispanic females	152	13	1,903	257.0
Hispanic Males	34	3	515	327.9
Hispanic Females	12	1	197	135.8
Asian/Pacific Islander males	7	1	60	62.5
Asian/Pacific Islander females	2	<1	11	11.2
American Indian/Alaska Native males	–	–	13	87.2
American Indian/Alaska Native females	–	–	7	46.0
Unknown	14	1	231	*
<b>Total</b>	<b>1,129</b>	<b>–</b>	<b>15,442</b>	<b>134.4</b>

<sup>1</sup>Diagnoses of HIV infection include persons with a diagnosis of HIV (not AIDS), a diagnosis of HIV and a later AIDS diagnosis, and concurrent diagnoses of HIV and AIDS in 2009 reported to ODH as of June 30, 2010.

<sup>2</sup>Persons living with a diagnosis of HIV infection includes persons with a diagnosis of HIV and/or AIDS who are not known to have died as of December 31, 2009.

<sup>3</sup>The rate is the number of persons living with a diagnosis of HIV infection per 100,000 population calculated using 2008 U.S. Census population estimates.

Asterisk (\*) indicates rates were not calculated because Census data is not applicable to the respective category.  
– indicates no cases were reported for the given category.

Data reported through December 31, 2010.

Source: Ohio Department of Health HIV/AIDS Surveillance Program.

## ■ ■ ■ Chlamydia

In Ohio from 2005 to 2009, the number of reported *Chlamydia trachomatis* infections increased 15%, with 48,493 cases reported in 2009. The case rate increased from 366.6 per 100,000 in 2005 to 422.2 in 2009. More than half of those diagnosed with Chlamydia were those aged 15-24 years (Table 3.2). Rates in this age range were more than five times higher than the state rate (Table 3.2), and the rate among blacks is nearly 12 times that of whites (Table 3.2). Ethnicity was not reported for more than half of the cases. Approximately three-fourths of the cases were female and the rate for females was three times the rate for males (Table 3.2).

**Table 3.2 Chlamydia Cases and Case Rates by Age, Race, Ethnicity, and Sex—Ohio, 2009<sup>1</sup>**

Indicator	Number of Cases	Case Rate <sup>2</sup>
Chlamydia (Total) Incidence	48,493	422.2
Age		
0 – 9	40	2.7
10–14	780	102.7
15–19	19,438	2,402.2
20–24	17,039	2,234.5
25–29	6,364	821.7
30–34	2,575	373.8
35–39	1,088	143.3
40–44	444	55.7
45–54	380	21.7
55–64	68	5.1
65+	16	1.0
Not Specified	261	–
Race		
American Indian	48	134.4
Asian/Pacific Islander	100	50.4
Black	19,275	1,338.3
White	11,745	119.7
Other <sup>3</sup>	1,424	–
Not Specified	15,901	–
Ethnicity		
Hispanic	945	312.8
Non-Hispanic	17,211	153.9
Not Specified	30,337	–
Sex		
Male	11,066	197.5
Female	37,198	632.4
Not Specified	229	–

<sup>1</sup>Year of diagnosis is defined as the date the specimen was collected by the provider.

<sup>2</sup>Rates are shown per 100,000 population and were calculated using 2008 census estimates.

<sup>3</sup>Cases are included in the Other race category if multiple races are chosen or if the case did not fit into any of the listed categories.

Dash (-) rates were not calculated because census data is not applicable to the respective category.

Small numbers are unstable and should be interpreted with caution.

Numbers subject to change when additional information is gained.

Source: Ohio Department of Health, STD Surveillance. Data reported through March 5, 2011.

## ■ ■ ■ Gonorrhea

The number of persons diagnosed with a *Neisseria gonorrhoeae* infection in Ohio decreased by 20% from 2005 to 2009, with 16,075 cases of gonorrhea reported in 2009, resulting in a case rate of 140.0 per 100,000. As with Chlamydia, more than half of those with gonorrhea are aged 15–19 years and 20–24 years (Table 3.3). Rates in this age range were nearly five times the state rate (Table 3.3). More than half of those diagnosed with gonorrhea in Ohio were black, and blacks were more than 24 times that of whites

**Table 3.3 Gonorrhea Cases and Case Rates by Age, Race, Ethnicity, and Sex – Ohio, 2009<sup>1</sup>**

Indicator	Number of Cases	Case Rate <sup>2</sup>
Gonorrhea (Total) Incidence	16,075	140.0
Age		
0–9	20	1.4
10–14	219	28.8
15–19	5,179	640.0
20–24	5,233	686.3
25–29	2,546	328.7
30–34	1,281	185.9
35–39	680	89.6
40–44	366	46.0
45–54	396	22.6
55–64	80	6.0
65+	21	1.3
Not Specified	54	–
Race		
American Indian	15	42.0
Asian/Pacific Islander	28	14.1
Black	9,006	625.3
White	2,512	25.6
Other <sup>3</sup>	390	–
Not Specified	4,124	–
Ethnicity		
Hispanic	182	60.2
Non-Hispanic	6,071	54.3
Not Specified	9,822	–
Sex		
Male	6,129	109.4
Female	9,881	168.0
Not Specified	65	–

<sup>1</sup>Year of diagnosis is defined as the date the specimen was collected by the provider.

<sup>2</sup>Rates are shown per 100,000 population and were calculated using 2008 census estimates.

<sup>3</sup>Cases are included in the Other race category if multiple races are chosen or if the case did not fit into any of the listed categories.

Dash (-) rates were not calculated because census data is not applicable to the respective category.

Small numbers are unstable and should be interpreted with caution.

Numbers subject to change when additional information is gained.

Source: Ohio Department of Health, STD Surveillance. Data reported through March 5, 2011.

## ■ ■ ■ Syphilis

From 2005 to 2009, the number of syphilis cases in Ohio increased by 66%. Previously, most of the syphilis cases occurred among older ( $\geq 35$  years) persons, but in recent years this has changed, and now nearly half of the cases occur in persons aged  $< 30$  years. In 2009, blacks were 10 times as likely to be diagnosed with syphilis, compared to whites, and nearly five times the state rate (Table 3.4). Approximately 2-4% of syphilis cases reported in Ohio in 2009 occurred in Hispanics, yet the rate was slightly higher for Hispanics

**Table 3.4 Syphilis Cases and Case Rates by Age, Race, Ethnicity, and Sex – Ohio, 2009<sup>1</sup>**

Indicator	Number of Cases	Case Rate <sup>2</sup>
Syphilis (Total) Incidence	829	7.2
Age		
0 – 9	8	0.5
10–14	3	0.4
15–19	91	11.2
20–24	177	23.2
25–29	137	17.7
30–34	96	13.9
35–39	99	13.0
40–44	83	10.4
45–54	100	5.7
55–64	29	2.2
65+	6	0.4
Not specified	0	–
Race		
American Indian	2	5.6
Asian/Pacific Islander	6	3.0
Black	477	33.1
White	308	3.1
Other <sup>3</sup>	28	–
Not specified	8	–
Ethnicity		
Hispanic	27	8.9
Non-Hispanic	789	7.1
Not specified	13	–
Sex		
Male	624	11.1
Female	204	3.5
Not specified	1	–

<sup>1</sup>Year of diagnosis is defined as the date the specimen was collected by the provider.

<sup>2</sup>Rates are shown per 100,000 population and were calculated using 2008 census estimates.

<sup>3</sup>Cases are included in the Other race category if multiple races are chosen or if the case did not fit into any of the listed categories.

Dash (-) rates were not calculated because census data is not applicable to the respective category.

Small numbers are unstable and should be interpreted with caution.

Numbers subject to change when additional information is gained.

Source: Ohio Department of Health, STD Surveillance. Data reported through March 5, 2011.

■ ■ ■ Syphilis (contd.)

**Table 3.5 Congenital Syphilis, Primary and Secondary Syphilis, and Tuberculosis Cases and Case Rates – Ohio, 2009<sup>1</sup>**

Indicator	Number of Cases	Case Rate <sup>2</sup>
Congenital syphilis incidence	8	5.4
Primary and secondary syphilis incidence	371	3.2
Tuberculosis incidence	180	1.6

<sup>1</sup>Year is defined as the year the specimen was collected by the provider for syphilis and as the year the case met the CDC Surveillance Case Definition for TB.

<sup>2</sup>Rates are shown per 100,000 population. The primary and secondary syphilis rate was calculated using 2008 census estimates and the congenital syphilis rate using 2008 live birth estimates. The tuberculosis rate was calculated using 2009 estimates.

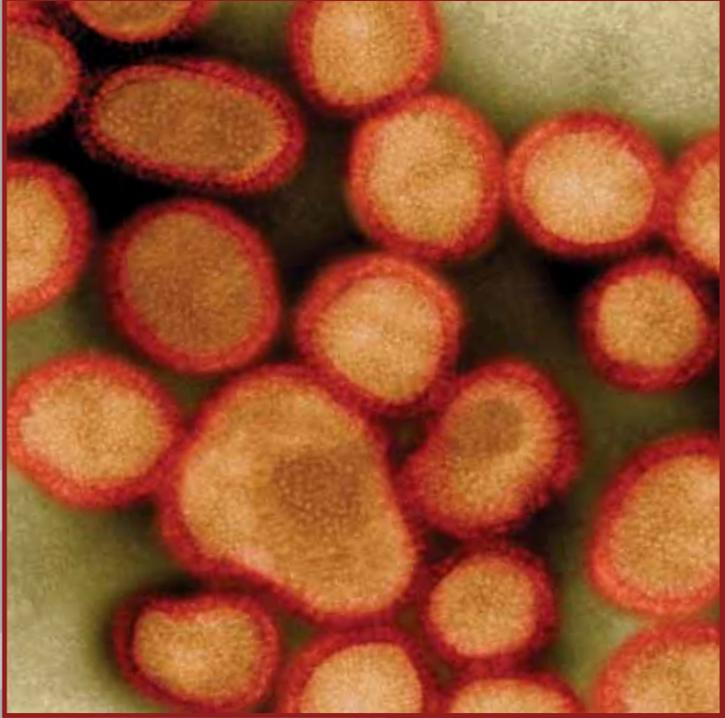
Small numbers are unstable and should be interpreted with caution.

Numbers subject to change when additional information is gained.

Syphilis data source: Ohio Department of Health, STD Surveillance. Data reported through May 10, 2011.

Tuberculosis data source: Ohio Department

# INFECTIONOUS DISEASE OUTBREAKS



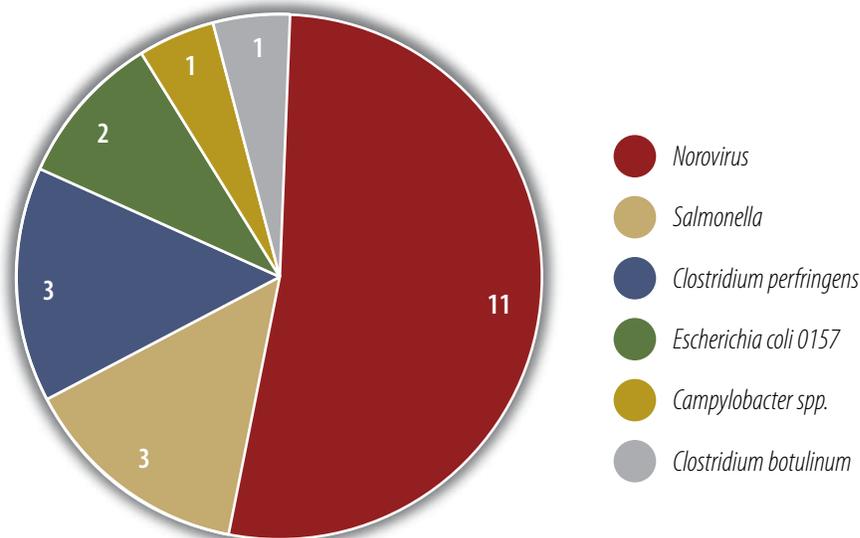
## Infectious Disease Outbreaks

In 2009, ODH assisted local health jurisdictions in the investigation of 212 outbreaks in 53 counties throughout the state. The number of Ohioans known to be ill from these outbreaks was 3,120. The outbreaks were classified as: institutional (64), foodborne (56), healthcare-associated (55), community (26), zoonotic (9) and waterborne (2). Causative agents identified during the outbreak investigations included: *Acinetobacter baumannii*, *Bordetella pertussis*, *Campylobacter spp.*, *Clostridium botulinum*, *Clostridium perfringens*, *Cryptosporidium spp.*, *Enterococcus faecium* (vancomycin-resistant), *Escherichia coli* O157:H7, *Hepatitis A virus*, *Histoplasma capsulatum*, *Legionella pneumophila*, *Norovirus genotypes GI and GII*, *Pseudomonas aeruginosa*, *Salmonella spp.*, *Sarcoptes scabiei* (scabies mite), *Shigella sonnei*, *Staphylococcus aureus* (including methicillin-resistant), *Staphylococcus epidermidis* (methicillin-resistant), group B *Streptococcus*, *Streptococcus pyogenes*, *Streptococcus salivarius* and *Varicella Zoster virus*.

### ■ ■ ■ Foodborne Outbreaks

Additional information is presented in the Environmental Health section. In 2009, 21 of the 56 foodborne outbreaks reported were confirmed foodborne disease outbreaks. For these 21 foodborne outbreaks, the causative agent was identified as follows: *Norovirus* (11), *Salmonella spp.* (3), *C. perfringens* (3), *E. coli* O157 (2), *Campylobacter spp.* (1) and *C. botulinum* (1), (Figure 3.1).

.....  
**Figure 3.1 Confirmed Foodborne Outbreaks by Etiologic Agent – Ohio, 2009**  
.....



Source of outbreak data: Ohio Disease Reporting System.  
.....

## Healthcare-Associated Outbreaks

Healthcare-associated outbreaks are a public health problem that has been receiving increased attention from both the private and the public medical sectors. There were 55 healthcare-associated outbreaks reported in 2009, 32 with a confirmed, specific causative agent identified.

### Healthcare-Associated Outbreaks, Ohio, 2009

Month of Onset	Setting	Causative Agent	# Ill
August 2008	Hospital	<i>Pseudomonas aeruginosa</i>	8
November 2008	Dialysis center	<i>Methicillin-resistant Staphylococcus epidermidis</i>	9
November 2008	Long term care facility	<i>Hepatitis A virus</i>	4
November 2008	Long term care facility	<i>Sarcoptes scabiei</i>	23
December 2008	Long term care facility	<i>Norovirus GII</i>	19
January 2009	Long term care facility	<i>Norovirus</i>	103
January 2009	Long term care facility	<i>Norovirus GII</i>	34
January 2009	Hospital	<i>Norovirus</i>	18
January 2009	Assisted living facility	<i>Norovirus GII</i>	11
February 2009	Hospital	<i>Coagulase-negative Staphylococcus</i>	13
February 2009	Long term care facility	<i>Sarcoptes scabiei</i>	2
February 2009	Long term care facility	<i>Sarcoptes scabiei</i>	2
February 2009	Assisted living facility	<i>Norovirus GII</i>	25
February 2009	Assisted living facility	<i>Norovirus GII</i>	51
March 2009	Long term care facility	<i>Norovirus GII</i>	18
March 2009	Hospital	<i>Norovirus GII</i>	15
March 2009	Assisted living facility	<i>Norovirus GII</i>	36
March 2009	Rehabilitation facility	<i>Sarcoptes scabiei</i>	23
March 2009	Long term care facility	<i>Sarcoptes scabiei</i>	5
March 2009	Hospital	<i>Vancomycin-resistant Enterococcus faecium</i>	3
April 2009	Hospital	<i>Norovirus</i>	26
April 2009	Long term care facility	<i>Sarcoptes scabiei</i>	3
April 2009	Long term care facility	<i>Sarcoptes scabiei</i>	25
May 2009	Long term care facility	<i>Sarcoptes scabiei</i>	6
May 2009	Hospital	<i>Streptococcus salivarius</i>	2
June 2009	Hospital	<i>Pseudomonas aeruginosa</i>	11
June 2009	Hospital	<i>Acinetobacter baumannii</i>	4
July 2009	Hospital	<i>Sarcoptes scabiei</i>	5
July 2009	Hospital	<i>Group B Streptococcus in newborns</i>	3
October 2009	Rehabilitation facility	<i>Sarcoptes scabiei</i>	5
October 2009	Long term care facility	<i>Sarcoptes scabiei</i>	14
December 2009	Hospital	<i>Methicillin-resistant Staphylococcus aureus</i>	6

Source of outbreak data: Ohio Disease Reporting System

Institutional Outbreaks

In 2009, 64 institutional outbreaks were reported. Of these, 44 were confirmed with a specific causative agent identified for the outbreak.

## Healthcare-Associated Outbreaks (contd.)

### Institutional Outbreaks, Ohio 2009

Causative Agent	Setting	# Ill Individuals	# Outbreaks
<i>Bordetella pertussis</i>	School	16	(2)
<i>Histoplasma capsulatum</i>	College/university	3	(1)
<i>Methicillin-resistant Staphylococcus aureus</i>	Correctional facility	25	(4)
<i>Norovirus</i>	Day care center	128	(3)
<i>Norovirus</i>	Hotel/motel	19	(1)
<i>Norovirus</i>	MRDD facility	17	(1)
<i>Norovirus</i>	School	70	(1)
<i>Shigella sonnei</i>	Day care center	195	(23)
<i>Shigella sonnei</i>	School	11	(1)
<i>Streptococcus pyogenes</i>	MRDD facility	19	(1)
<i>Varicella Zoster virus</i>	School	55	(6)

Source of outbreak data: Ohio Disease Reporting System.

### ■ ■ ■ Specific Selected Infectious Diseases

Several specific infectious disease case rates are shown in Table 3.6.

**Table 3.6** Number and rate\* of selected infectious diseases – Ohio, 2009

Disease	Number	Rate
Campylobacteriosis	1,262	10.9
Hepatitis A	34	0.3
Meningococcal disease	42	0.4
Salmonellosis	1,377	11.9
Shigellosis	1,050	9.1
Pertussis	1,100	9.5

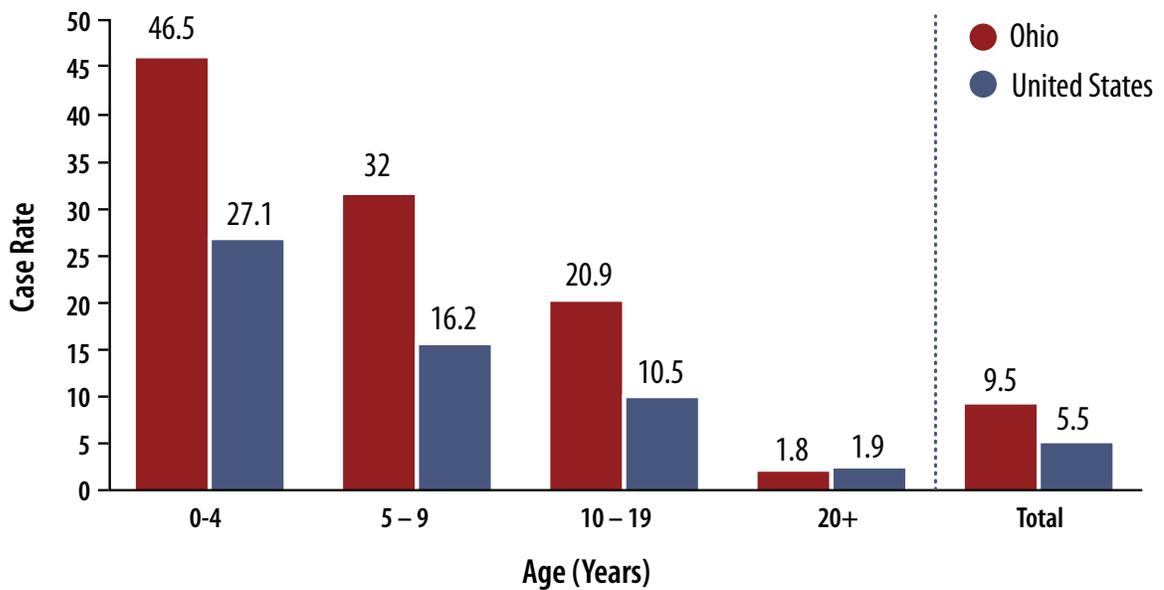
Source: The Annual Summary of Infectious Diseases, Ohio, 2009 provides an overview of the incidence of selected notifiable diseases. The sources of these data are individual cases and laboratory reports submitted to the Ohio Department of Health (ODH) by hospitals, infection prevention specialists, health-care providers, laboratories, and city, county, and combined health districts throughout the state and entered into the Ohio Disease Reporting System (ODRS).

\*Rates use U.S. census midpoint estimates and are per 100,000 population.

■ ■ ■ ■ **Pertussis**

The number of cases of *Bordetella pertussis* reported in Ohio has fluctuated during the last five years. The year 2009 had the highest number of reported cases (1100 cases) and 2006 had the lowest number of reported cases (594 cases). The majority of cases in 2009 occurred in persons aged <5 years (Figure 3.7).

**Figure 3.7 Pertussis rates by age – Ohio\* and United States\*\*, 2009**



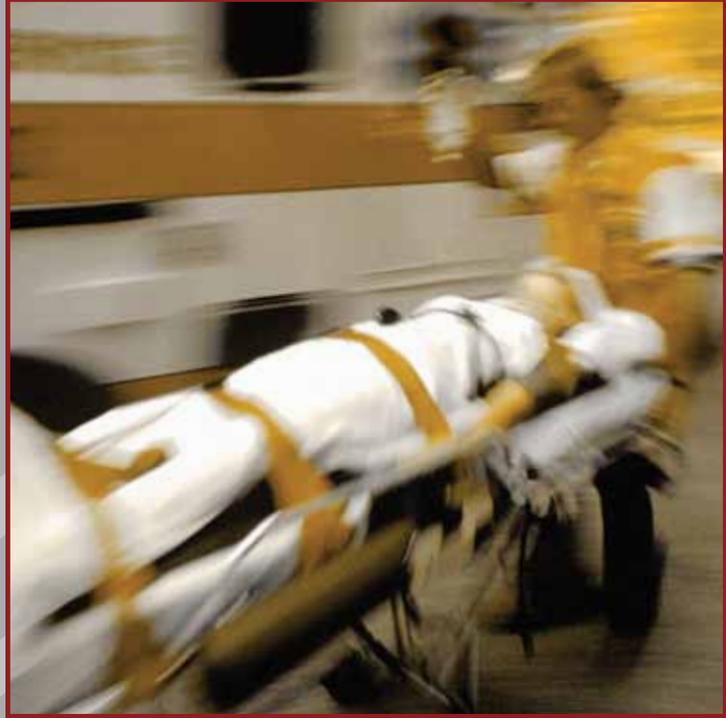
*The Annual Summary of Infectious Diseases, Ohio, 2009 provides an overview of the incidence of selected notifiable diseases. The sources of these data are individual cases and laboratory reports submitted to the Ohio Department of Health (ODH) by infection preventionists, health care providers, laboratories and city, county and combined health districts throughout the state and entered into the Ohio Disease Reporting System (ODRS).*

Source of population data: 2000 U.S. Census.

\*2009 total Ohio rate calculated from U.S. Census midpoint estimates and are per 100,000 population.

\*\*2009 total U.S. rate calculated from 2009 Final Surveillance Report from the Centers for Disease Control and Prevention (CDC) and are per 100,000 population.

# INJURY PREVENTION



## INJURY

Injury is a substantial public health problem in Ohio, and unintentional injury is the leading cause of death for Ohioans aged 1–44 years and the fifth-leading cause of death overall. With suicide and homicide deaths included, injury becomes the third-leading cause of overall death for Ohioans.

From 2006-2009 in Ohio, unintentional poisoning, suicide, motor vehicle crashes (MVC) and falls were the four leading causes of injury-related death (Table 4.1). Although the risk of specific mechanism of injury changes as one ages, injuries remain an important public health concern throughout the entire life-span (Table 4.1), a unique characteristic of injury compared with other health concerns/diseases.

From 2006-2009, unintentional poisoning was the leading cause of injury death for all age groups (Table 4.1) in Ohio. Unintentional drug poisonings (overdoses) account for more than 95% of these poisoning deaths on average. Drug poisonings increased from 327 annual deaths in 1999 to 1,423 in 2009, an increase of 335 percent (data not shown), and in 2007, for the first time on record, unintentional drug poisoning surpassed MVC and suicide as the overall leading cause of injury death in Ohio (data not shown). Among the leading causes of injury death by age, falls are ranked first for Ohioans aged  $\geq 65$  years, fourth for ages 55–64 years, and fifth for ages 35–54 years (data not shown). Falls are the leading cause of injury-related inpatient hospitalization at both ends of the age spectrum in both Ohio and the United States (Table 4.1). For children aged  $\leq 14$  years and adults aged  $\geq 45$  years, falls lead to more hospitalizations than any other injury and are also the second-leading cause of injury-related hospitalizations for ages 35–44 years and the fourth for ages 15–24 years (Table 4.1). They were also the leading cause of injury-related emergency department (ED) visits for all age groups except ages 10–24-years (Table 4.1).

---

Age Group	1st Leading Cause	2nd Leading Cause
< 1 year	Suffocation	Homicide
1 to 4	Homicide	Motor vehicle traffic
5 to 24	Motor vehicle traffic	Homicide
25 to 34	Motor vehicle traffic	Poisoning
35 to 54	Poisoning	Suicide
55 to 64	Suicide	Poisoning
65 and older	Falls	Motor vehicle traffic
All ages	Poisoning	Motor vehicle traffic

---

**Table 4.1** Leading causes of injury-related deaths by mechanism<sup>1</sup> and intent<sup>2</sup> and injury-related hospital inpatient discharges and emergency department visits by age-group – Ohio residents, 2006-2009

Age Group	Deaths by Mechanism (Unintentional, Intentional and Undetermined Intent)	Deaths by Intent (Unintentional unless Homicide/Suicide)	Hospital Inpatient Discharges	Emergency Department Visits
< 1	Suffocation (246) Other specified/Not specified (22 ea) MV traffic (17) Fire/burn (9)	Suffocation (228) Homicide (54) Undetermined (18) MV traffic (17)	Falls (433) Assault (330) Other specified (135) Fire/burn (133)	Falls (14,520) Struck by/against (3,609) MV traffic (2,299) Other specified (1,739)
1 - 4	Fire/burn (44) Drowning (44) MV traffic (39) Suffocation (29) Other specified (23)	Homicide (84) Drowning (42) MV traffic (39) Fire/burn (32)	Falls (1,226) Poisoning (890) Fire/burn (479) Natural environment (396)	Falls (101,809) Struck by/against (42,305) Other Specified (21,715) Ntl Environment (19,746)
5 - 9	MV traffic (52) Fire/burn (32) Firearm (16) Drowning (15)	MV traffic (52) Homicide (33) Fire/burn (25) Drowning (14)	Falls (1,296) MV traffic (592) Natural environment (314) Struck by/against (288)	Falls (79,468) Struck by/against (52,264) Cut/pierce (18,286) Ntl Environment (18,257)
10 - 14	Suffocation (58) MV traffic (54) Firearm (30) Drowning (21)	MV traffic (54) Suicide (49) Homicide (26) Drowning (21)	Falls (1,052) Self-harm (921) MV traffic (680) Struck by/against	Struck by/against (97,644) Falls (85,072) Overexertion (36,341) Cut/pierce (22,824)
15 - 19	MV traffic (514) Firearm (350) Suffocation (158) Poisoning (114)	MV traffic (514) Suicide (288) Homicide (245) Poisoning (96)	Self-harm (4,372) MV traffic (2,679) Assault (1,414) Falls (1,239)	Struck by/angst (108,304) Falls (67,863) MV traffic (57,022) Overexertion (51,088)
20 - 24	Firearms (542) MV traffic (528) Poisoning (428) Suffocation (161)	MV traffic (528) Suicide (405) Homicide (389) Poisoning (375)	Self-harm (4,020) MV traffic (2,860) Assault (2,121) Falls (1,412)	Struck by/against (76,996) Falls (69,448) MV traffic (59,317) Overexertion (55,381)
25 - 34	Poisoning (1,334) Firearm (910) MV traffic (767) Suffocation (332)	Poisoning (1,168) Suicide (829) MV traffic (767) Homicide (663)	Self-harm (7,029) MV traffic (4,064) Falls (3,308) Assault (2,980)	Falls (134,661) Overexertion (115,940) Struck by/against (114,123) MV traffic (84,583)
35 - 44	Poisoning (1,832) Firearms (709) MV traffic (702) Suffocation (366)	Poisoning (1,528) Suicide (1,033) MV traffic (702) Homicide (419)	Self-harm (7,379) Falls (5,515) MV traffic (3,777) Assault (2,373)	Falls (127,520) Overexertion (93,316) Struck by/against (81,959) MV traffic (65,226)
45 - 54	Poisoning (2,269) Firearms (774) MV traffic (764) Suffocation (354)	Poisoning (1,862) Suicide (1,228) MV traffic (764) Homicide (337)	Falls (10,763) Self-harm (6,090) MV traffic (3,929) Poisoning (3,046)	Falls (135,317) Overexertion (68,794) Struck by/against (59,295) MV traffic (55,118)

**Table 4.1 (contd.)**

Age Group	Deaths by Mechanism (Unintentional, Intentional and Undetermined Intent)	Deaths by Intent (Unintentional unless Homicide/Suicide)	Hospital Inpatient Discharges	Emergency Department Visits
55 - 64	Poisoning (788) MV traffic (573) Firearms (494) Fall (325)	Suicide (771) MV traffic (573) Poisoning (572) Falls (310)	Falls (14,504) MV traffic (2,693) Poisoning (2,094) Self-harm (2,070)	Falls (98,243) MV traffic (29,663) Overexertion (29,015) Struck by/against (26,034)
65 - 74	Falls (484) MV traffic (342) Firearms (278) Suffocation (160)	Falls (482) Suicide (360) MV traffic (342) Suffocation (118)	Falls (20,271) MV traffic (1,692) Poisoning (1,433) Not specified (1,109)	Falls (75,144) MV traffic (13,643) Overexertion (12,325) Struck by/against (11,677)
75 - 84	Falls (1,218) MV traffic (349) Not specified (332) Suffocation (252)	Falls (1,217) MV traffic (349) Not specified (313) Suicide (274)	Falls (40,391) Not specified (1,531) MV traffic (1,523) Poisoning (1,156)	Falls (92,537) Struck by/against (8,682) MV traffic (7,961) Overexertion (7,292)
85 +	Falls (1,582) Not specified (632) Suffocation (293) MV traffic (147)	Falls (1,580) Not specified (620) Suffocation (276) MV traffic (147)	Falls (39,452) Not specified (1,146) MV traffic (575) Poisoning (555)	Falls (69,464) Struck by/against (4,477) Overexertion (2,608) Cut/pierce (2,157)
<b>Totals*</b>	Poisoning (7,104*) MV traffic (4,848*) Firearms (4,435*) Falls (4,082*)	Poisoning (5,813*) Suicide (5,350*) MV traffic (4,848*) Falls (3,991*)	Falls (140,952*) Self-harm (32,297*) MV traffic (25,379*) Poisoning (15,208*)	Falls (1,150,388*) Struck by/against (576,311*) Overexertion (492,395*) MV traffic (409,935*)

<sup>1</sup>Includes all injury deaths for this leading cause, whether unintentional, suicide/self-inflicted, homicide, pending investigation or could not be determined

<sup>2</sup>Intent: The state of mind of persons involved in an injury episode which forms the basis for categorizing an injury as unintentional (traditionally termed accidental), as homicide/assault, as suicide/self-inflicted or as unable to be determined

Source for deaths: Ohio Dept. of Health, Office of Vital Statistics

Source for hospitalizations and emergency room visits: Ohio Hospital Association

\* Totals include those of unknown age

## ■ ■ ■ ■ Unintentional Injuries

In 2009, the rate of all unintentional injuries resulting in an emergency department visit was highest in those 85 years and older in the United States, however in Ohio the rate was highest in those aged 15–24 years (Table 4.2). In Ohio, those aged  $\geq 75$  years had the highest rate of unintentional injuries resulting in a hospitalization, and those aged 5–14 years had the lowest (Table 4.3). Falls surpass all other mechanisms of injury as a cause of ER visits, hospitalization, and death for older adults (Table 4.2, Table 4.3). In 2009, in Ohio the rate of unintentional falls resulting in an emergency department visit was highest among those aged  $\geq 85$  years (Table 4.2), with females at greater risk than males (Table 4.2, Table 4.3).

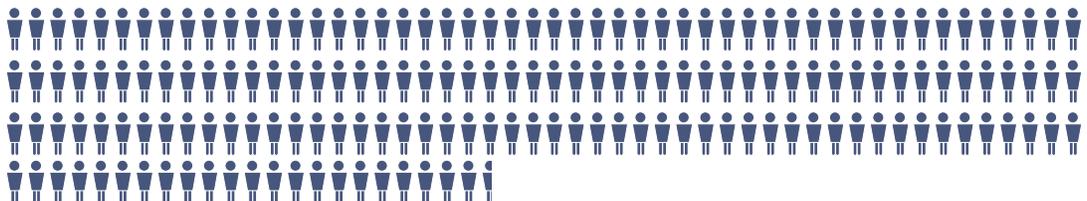
In Ohio in 2009, those aged 1–4 years had the highest rate of unintentional poisonings resulting in an emergency department visit (Table 4.2). Those aged 35–44 years had the highest rate of poisonings resulting in hospitalization, with the lowest rates in children aged 5–14 years (Table 4.3).

Prescription opioids (including methadone, oxycodone and hydrocodone) have contributed significantly to the rise in unintentional drug poisonings. In 2009, males and females in Ohio had comparable rates (8.4 per 100,000) of prescription opioid-related poisonings resulting in an ED visit (Figure 4.1). Ohioans aged 15–34 years had the highest rate of prescription opioid poisoning resulting in an ED visit among all age groups. Those aged 45–54 years had the highest rate of opioid-related poisonings resulting in hospitalization, followed by those aged 25–34 years (Figure 4.2).

In 2009, females and those aged 15–34 years had the highest rates of MVC resulting in an emergency department visit (Table 4.2). Rates of MVC resulting in hospitalization were highest among those aged 15–24 years in Ohio and lowest in those aged 0–4 years (Table 4.3). Rates were higher for females than males (Table 4.3).

.....  
**Prescription opioids (including methadone, oxycodone and hydrocodone) have contributed significantly to the rise in unintentional drug poisonings.**  
.....

172.6



183.5



**Table 4.2 Rate\* of total unintentional injuries, falls, poisonings, and motor vehicle crashes (MVC) resulting in emergency department visit by sex and age – Ohio and United States, 2009**

	All Unintentional Injuries		Falls		Poisonings		MVC	
	Ohio	United States	Ohio	United States	Ohio	United States	Ohio	United States
<b>Total</b>	<b>8,317.1</b>	<b>9,058.6</b>	<b>2,666.3</b>	<b>2,831.3</b>	<b>178.2</b>	<b>299.2</b>	<b>886.5</b>	<b>863.0</b>

**Sex**

Male	8,748.4	9,814.1	2,440.4	2,681.7	172.6	333.3	806.5	760.8
Female	7,839.2	8,234.7	2,854.9	2,933.3	183.5	265.8	967.9	968.2

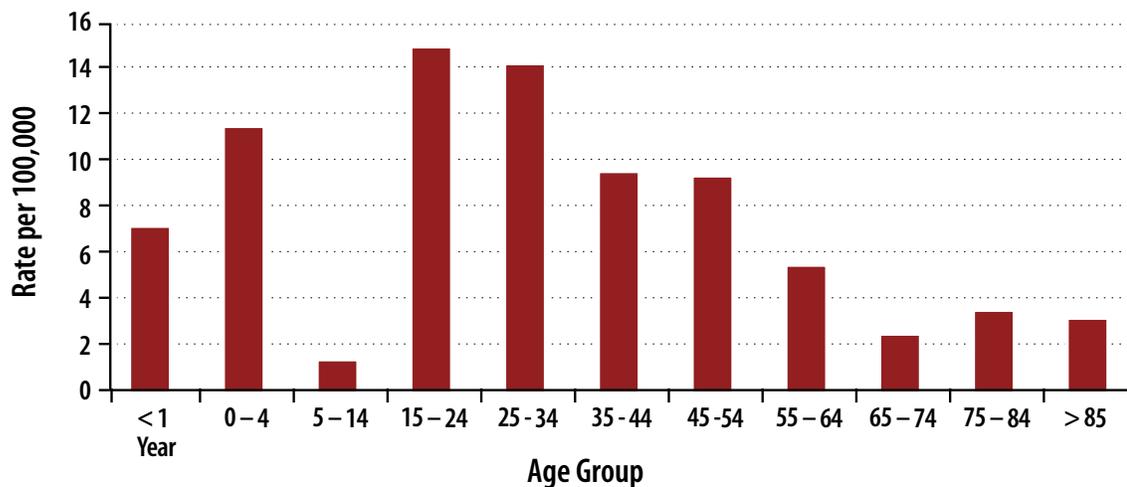
**Age (years)**

<1 year	5,270.6	5,848.0	2,695.5	3,456.1	156.4	99.0	381.1	116.0
1–4	10,877.1	12,360.9	4,597.7	5,607.3	449.0	242.2	366.5	203.4
5–14	9,131.6	9,421.2	2,809.7	3,071.5	123.5	54.2	398.5	329.6
15–24	11,244.3	11,762.3	2,328.3	2,129.1	305.3	419.9	1,782.4	1,720.5
25–34	10,288.2	9,682.7	2,487.3	1,904.5	230.4	352.6	1,411.6	1,332.0
35–44	8,057.9	8,387.4	2,205.4	1,914.1	171.7	405.2	1,021.4	1,010.3
45–54	6,331.3	7,524.1	2,085.1	2,081.8	128.6	441.2	766.8	815.2
55–64	4,826.2	6,095.6	1,970.8	2,247.5	75.0	253.7	555.2	623.8
65–74	4,710.2	6,341.5	2,450.5	3,206.5	59.8	168.9	408.7	497.4
75–84	6,631.2	9,188.3	4,461.4	6,318.1	66.2	194.1	358.4	411.5
>85	10,711.9	15,526.9	8,521.2	12,514.2	58.5	182.1	222.5	310.5

\*Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population

Source: Ohio Hospital Association

**Figure 4.1** Rate\* of prescription drug opioid-related poisonings<sup>†</sup> resulting in emergency department visits by age – Ohio, 2009

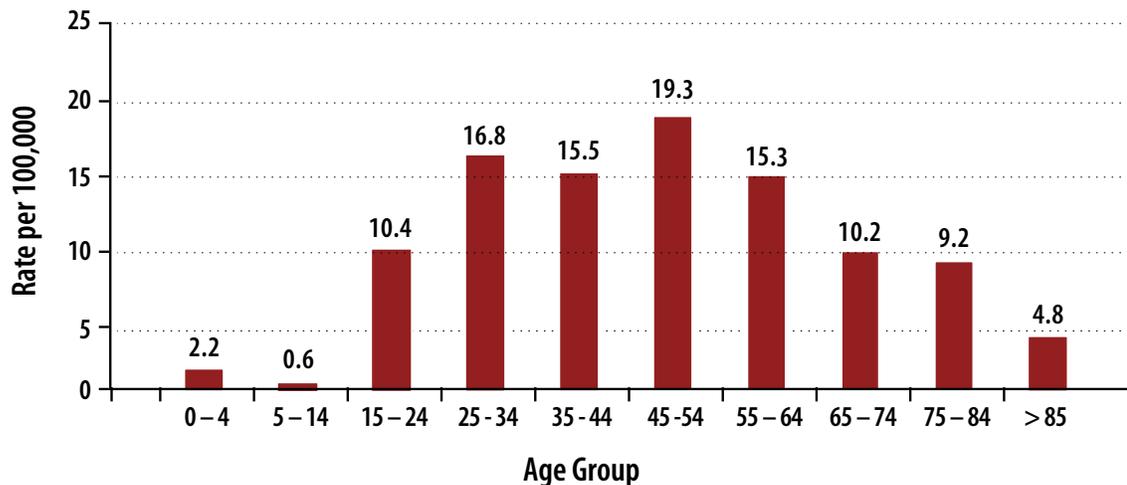


<sup>†</sup>ED-treated poisonings that included prescription opioid use among diagnoses

\*Per 100,000 population

Source: Ohio Hospital Association

**Figure 4.2** Rate\* of prescription opioid-related poisonings resulting in hospitalization by age – Ohio 2009



\*Per 100,000 population

Source: Ohio Hospital Association

**Table 4.3** Rate\* of total unintentional injuries, falls, poisonings, and motor vehicle crashes (MVC) resulting in hospitalization by sex and age – Ohio, 2009 and United States, 2005

	All Unintentional Injuries		Falls		Poisonings		MVC	
	Ohio	United States	Ohio	United States	Ohio	United States	Ohio	United States
<b>Total</b>	<b>302.1</b>	–	<b>184.2</b>	<b>239.4</b>	<b>79.3</b>	<b>74.9</b>	<b>49.1</b>	<b>77.9</b>

**Sex**

Male	299.2	–	151.7	198.3	72.5	67.6	62.9	97.9
Female	291.0	–	202.1	259.3	86.1	82.0	35.7	57.1

**Age (years)**

0–4	140.6	–	44.1	79.4	30.2	35.1	10.8	21.4
5–14	94.3	–	29.4	63.8	9.4	15.3	22.8	35.3
15–24	172.8	–	29.7	44.6	106.8	94.5	77.8	130.7
25–34	156.9	–	35.0	54.0	113.0	102.7	61.5	96.7
35–44	178.5	–	57.3	74.3	120.3	106.3	58.0	79.4
45–54	230.1	–	105.7	125.9	110.3	100.1	48.6	78.2
55–64	292.7	–	181.7	222.1	64.0	60.1	43.1	71.5
65–74	519.0	–	398.4	516.8	43.6	50.4	41.2	71.5
75–84	1,362.4	–	1,190.9	1,551.9	46.9	62.4	56.6	96.0
>85	3,385.8	–	3,151.9	3,801.4	43.5	65.7	58.9	87.3

\* Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population  
Source: Ohio Hospital Association

## ■ ■ ■ Intentional Injuries

In 2009, rates of assault resulting in an emergency department visit were highest in males (data not shown) and those aged 15–24 years in both Ohio and the United States (Table 4.4), and lowest in those  $\geq 85$  years (Table 4.4). Similarly, assaults resulting in hospitalization were highest in males (Table 4.5) and those aged 15–24 years, with the lowest rates in children aged 5–14 years (Table 4.5).

In Ohio in 2009, females were more likely than males to intentionally cause self-harm resulting in an emergency department visit (Table 4.4), but both males and females were equally likely to intentionally cause self-harm resulting in hospitalization (Table 4.5). Overall rates of self-harm incidents resulting in hospitalizations were highest in Ohioans aged 35–44 years and in those aged 25–34 years in the United States (Table 4.5).

**Table 4.4 Rate\* of total intentional injury, assault, and self-harm incidents resulting in emergency department visit by sex and age – Ohio and United States, 2009**

	All Intentional Injuries		Assaults		Self-Harm	
	Ohio	United States	Ohio	United States	Ohio	United States
<b>Total</b>	<b>505.8</b>	<b>663.3</b>	<b>413.1</b>	<b>511.4</b>	<b>82.7</b>	<b>38.5</b>
<b>Sex</b>						
Male	580.0	775.8	488.6	626.0	74.3	31.73
Female	431.5	547.5	337.2	393.3	91.4	45.42
<b>Age (years)</b>						
<1 year	16.2	95.1	15.6	95.1	0.7	0
1–4	27.9	105.6	26.2	104.9	1.5	0.05
5–14	196.1	313.8	155.1	274.7	39.4	15.41
15–24	1,339.0	1,647.6	1,075.9	1,306.6	243.4	104.95
25–34	993.8	1,164.9	835.1	904.5	135.1	66.68
35–44	573.1	774.5	465.6	562.8	93.0	43.00
45–54	358.0	531.2	292.3	374.0	57.6	29.42
55–64	113.0	206.7	94.6	149.8	15.7	12.83
65–74	38.4	90.8	32.3	62.5	5.1	4.76
75–84	21.2	57.2	15.7	40.0	4.6	0.68
>85	18.0	53.0	14.5	35.5	2.6	5.27

\*Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population

Source: Ohio Hospital Association

**Table 4.5 Rate\* of total intentional injury, assault, and self-harm incidents resulting in hospitalizations by sex and age—Ohio, 2009 and United States, 2005**

	All Intentional Injuries		Assaults		Self-Harm	
	Ohio	United States	Ohio	United States	Ohio	United States
<b>Total</b>	<b>71.6</b>	–	<b>21.4</b>	<b>25.7</b>	<b>49.3</b>	<b>51.2</b>

Sex						
Male	80.2	–	36.5	43.3	42.3	43.9
Female	63.0	–	6.3	7.2	56.3	58.7

Age (years)						
0–4	8.7	–	8.7	9.5	0	0
5–14	7.4	–	2.1	3.9	5.4	6.76
15–24	129.8	–	48.3	58.8	80.1	84.42
25–34	120.8	–	40.3	49.2	79.1	86.63
35–44	113.7	–	27.8	31.5	84.5	82.81
45–54	88.4	–	20.4	22.7	67.1	69.17
55–64	38.8	–	8.2	9.3	30.2	27.24
65–74	13.6	–	3.0	5.2	10.1	14.35
75–84	14.2	–	2.2	4.4	11.3	9.66
>85	11.4	–	4.8	6.7	5.7	11.46

\*Rates are per 100,000 population and are age-adjusted to the 2000 U.S. standard population

Source: Ohio Hospital Association

# HEALTH RISK BEHAVIORS



## HEALTH RISK BEHAVIORS

### ■ ■ ■ Health Risk Behaviors

Health-related behaviors are those behaviors that can either improve health or increase risk for disease or disability. While many behaviors have some impact on health, a handful are alone responsible for the vast majority of the leading causes of death in Ohio, including tobacco use, excessive alcohol use, sedentary living, poor nutritional intake, drinking and driving, and lack of seatbelt use. While these behaviors are considered modifiable, it is important to remember that individual behavior is influenced at several levels, including the interpersonal (family and community), organizational (schools and workplace), and systemic (policy and infrastructure) levels. Without adequately addressing these external influences, behavior change is difficult and unsustainable.

### ■ ■ ■ Tobacco and Alcohol Use

Despite the known health risks, an estimated one in five (20.3%) Ohio adults were current cigarette smokers in 2009 (Table 5.1). The prevalence of current cigarette smoking was higher in Ohio compared with the U.S. median prevalence of 17.9%. Smoking prevalence among Ohio adults did not differ substantially by sex or race. In addition to cigarette smoking, 3.1% of Ohio adults reported using smokeless tobacco, and 6.4% reported using Snus or Taboka, two newer types of tobacco products on the market. Heavy drinking (two or more drinks per day for males, one or more drinks per day for females) and binge drinking (five or more drinks on one occasion for males, four or more drinks on one occasion for females) were reported by 5.3% and 16.1% of Ohio adults, respectively.

### ■ ■ ■ Physical Activity and Fruit and Vegetable Intake

More than one half (51.5%) of Ohio adults in 2009 had a lack of sufficient physical activity (defined as 30 or more minutes per day of moderate physical activity, five or more days per week; or 20 or more minutes per day of vigorous physical activity, three or more days per week). The prevalence of insufficient physical activity was found to be significantly greater among blacks than whites in Ohio (58.0% versus 50.6%, respectively). More than three-quarters (79.0%) of Ohio adults did not consume the recommended five or more servings of fruits and vegetables daily in 2009 (Table 5.1).

### ■ ■ ■ Injury-Related Behaviors

In 2008, 2.7% of adults reported driving after having too much to drink in the past 30 days (Table 5.1). The prevalence of drinking and driving was not found to differ substantially by sex or race. Nearly one in ten (9.1%) Ohio adults reported they sometimes, seldom, or never use seatbelts. Lack of seatbelt use among Ohio adults was about two times higher among males (12.3%), compared with females (6.2%) and blacks (16.1%), compared with whites (8.4%); differences by sex and race were found to be statistically significant.

**Table 5.1** Prevalence (percent) and 95% confidence intervals (CI) of selected modifiable behaviors by sex, race, and ethnicity – Ohio, 2008–2009 and United States, 2007 and 2009

Modifiable Health Behavior	Ohio		United States	
	Year	Percent (%) and 95% CI or Rate	Year	Percent (%) and 95% CI or Rate
<b>Adults (18+) Who Are Current Cigarette Smokers<sup>1,2</sup></b>	2009	20.3 (19.1-21.6)	2009	17.9
• Male		21.2 (19.2-23.2)		19.6
• Female		19.5 (18.0-21.0)		16.7
• White		20.1 (18.8-21.5)		17.3
• Black		22.0 (18.2-25.8)		20.5
• Hispanic		NA		15.7
<b>Adults (18+) Who Currently Use Smokeless Tobacco<sup>1,3</sup></b>	2009	3.1 (2.4-3.9)	2007	3.3
<b>Adults (18+) Who Currently Use Snus or Taboka<sup>1</sup></b>	2009	6.4 (2.4-10.4 )	–	–
<b>Adults (18+) Who are Heavy Drinkers<sup>1,2</sup></b>	2009	5.3 (4.5-6.0)	2009	5.1
<b>Adults (18+) Who are Binge Drinkers<sup>1,2</sup></b>	2009	16.1 (14.8-17.3)	2009	15.8
<b>Adults (18+) With Insufficient Physical Activity<sup>1,2</sup></b>	2009	51.5 (49.9-53.0)	2009	49.0
• Male		49.5 (47.1-52.0)		46.6
• Female		53.3 (51.4-55.2)		51.4
• White		50.6 (48.9-52.3)		48.2
• Black		58.0 (52.8-63.2)		57.0
• Hispanic		NA		53.5
<b>Adults (18+) Who Consume &lt;5 Fruits/Vegetables Per Day<sup>1,2</sup></b>	2009	79.0 (77.8-80.1)	2009	76.6
<b>Adults (18+) Who Drove After Having Too Much to Drink Past 30 Days<sup>4</sup></b>	2008	2.7 (1.8-3.5)	–	–
• Male		3.3 (2.1-4.5)	–	–
• Female		1.9 (0.7-3.1)	–	–
• White		2.6 (1.7-3.5)	–	–
• Black		2.5 (0.0-5.0)	–	–
• Hispanic		NA	–	–
<b>Adults (18+) Who Sometimes/Seldom/Never Use Seatbelts<sup>4</sup></b>	2008	9.1 (8.3-9.9)	–	–
• Male		12.3 (10.8-13.7)	–	–
• Female		6.2 (5.4-7.0)	–	–
• White		8.4 (7.6-9.3)	–	–
• Black		16.1 (12.3-19.9)	–	–
• Hispanic		14.5 (6.7-22.2)	–	–

<sup>1</sup>Ohio Source: 2009 Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010.

<sup>2</sup>U.S. Source: 2009 Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2010. The U.S. prevalence represents the median prevalence of the 50 states and District of Columbia.

<sup>3</sup>U.S. Source: Results From the 2007 National Survey on Drug Use and Health: Detailed Tables. Rockville (MD): Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2007. Note: Data are for persons 12+.

<sup>4</sup>Ohio Source: 2008 Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2009.

– = Not applicable. Prevalence was not calculated if the unweighted sample size was <50 and/or the confidence interval half width was <10.

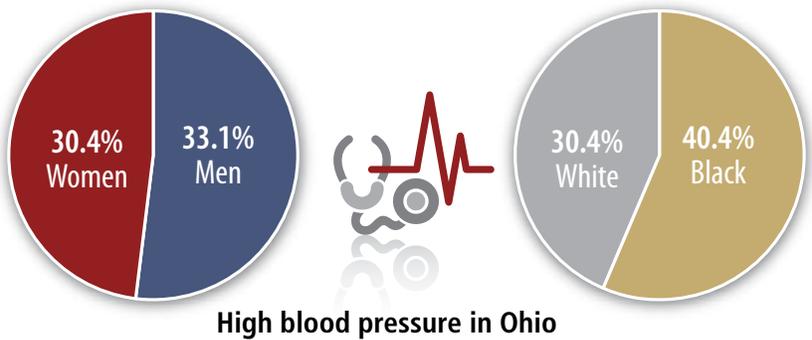
# CLINICAL RISK FACTORS



## CLINICAL RISK FACTORS

Clinical risk factors can be described as physiological attributes which at certain levels might be associated with an increased risk of certain diseases or death. They typically require some form of clinical assessment through anthropometric (height, weight, etc.) measurement or biological analysis. Examples of common clinical risk factors are high blood pressure, high cholesterol, and overweight/obesity.

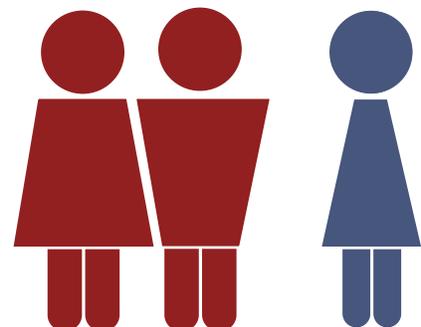
In 2009, nearly one-third of Ohio adults (31.7%) aged  $\geq 18$  years were ever told by a doctor that they had high blood pressure. High blood pressure was more commonly reported among Ohio adult males (33.1%), compared with females (30.4%) and significantly more so in blacks (40.4%), compared with whites (31.1%). Nearly 40% of Ohio adults in 2009 reported they had been told they have high cholesterol, with males having a significantly higher prevalence of high cholesterol (42.7%), compared with females (36.8%). The prevalence of both high blood pressure and high cholesterol were greater in Ohio than in the United States (Table 6.1).



The prevalence of overweight/obesity is increasing in both Ohio and the United States. In 2009 in Ohio, 37% of adults were overweight (body mass index [BMI] of 25.0–29.9), and an additional 29.8% were obese (BMI of 30.0 or greater)—meaning two of three Ohio adults have a weight status that puts them at risk for chronic diseases and conditions, including heart disease, stroke, diabetes, arthritis, and several cancers. Furthermore, obesity is associated with a host of other medical conditions, can severely lower quality of life, and often reduces productivity and increases days lost from work. Among adults in Ohio, males had a significantly greater prevalence of overweight (43.5%), compared with females (30.6%), and blacks (42.9%) had a significantly higher prevalence of obesity compared with whites (28.8%). The prevalence of both overweight and obesity was greater in Ohio, compared with the U.S. median prevalence (Table 6.1).

**2 out of 3**

Ohio adults weight status puts them at risk for chronic health conditions.



**Table 6.1** Prevalence (percent) and 95% confidence intervals (CI) of selected clinical risk factors by sex, race, and ethnicity – Ohio and United States, 2009

Clinical Risk Factor	Year	Ohio % (95% CI)	United States% (95% CI)
<b>Adults (18+) Ever Told Had High Blood Pressure<sup>1,2</sup></b>	2009	31.7 (30.4-33.0)	28.7
• Male		33.1 (31.0-35.3)	29.8
• Female		30.4 (28.9-31.9)	27.8
• White		31.1 (29.7-32.5)	29.2
• Black		40.4 (35.7-45.1)	38.3
• Hispanic		NA	18.4
<b>Adults (18+) Ever Told Had High Cholesterol<sup>1,2</sup></b>	2009	39.6 (38.1-41.1)	37.5
• Male		42.7 (40.4-45.1)	39.7
• Female		36.8 (35.0-38.6)	36.2
• White		40.3 (38.7-41.9)	38.5
• Black		34.0 (29.3-38.7)	34.5
• Hispanic		NA	34.1
<b>Adults (18+) Who are Overweight (BMI 25.0-29.9)<sup>1,2,3</sup></b>	2009	37.0 (35.5-38.4)	36.2
• Male		43.5 (41.1-45.8)	42.6
• Female		30.6 (28.9-32.4)	29.8
• White		37.8 (36.2-39.4)	36.3
• Black		31.6 (27.0-36.2)	33.4
• Hispanic		NA	36.9
<b>Adults (18+) Who are Obese (BMI 30.0+)<sup>1,2,3</sup></b>	2009	29.8 (28.4-31.2)	26.9
• Male		30.7 (28.5-32.9)	28.6
• Female		28.9 (27.2-30.6)	26.0
• White		28.8 (27.3-30.3)	26.5
• Black		42.9 (37.9-48.0)	38.7
• Hispanic		NA	29.2

<sup>1</sup> Ohio Source: 2009 Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010.

<sup>2</sup> U.S. Source: 2009 Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2010. The U.S. prevalence represents the median prevalence of the 50 states and District of Columbia.

<sup>3</sup> BMI = Body Mass Index

NA = Not applicable. Prevalence was not calculated if the unweighted sample size was <50 and/or the confidence interval half width was <10.

# SCREENING & RECOMMENDED CARE



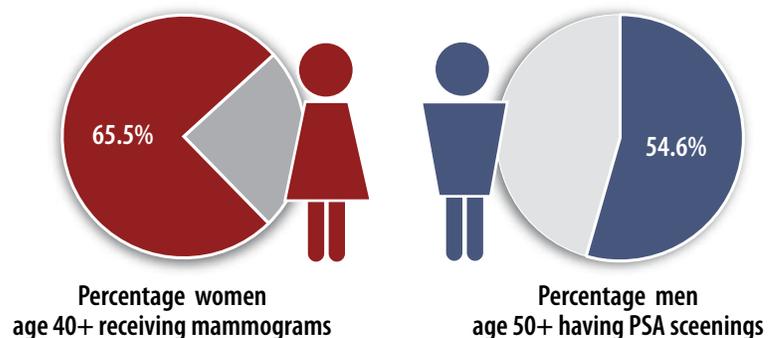
## SCREENING & RECOMMENDED CARE

Screening is designed to identify disease in a population at the earliest possible stage, allowing for definitive diagnosis and initiation of treatment in the hope to reduce death and disability from a disease. While many chronic diseases and conditions have screening tests, recommendations for their use vary based on the governing body issuing the recommendations. The following screening and recommended care data presented here are based on the survey question at the time of collection and therefore may not match current recommendations.

### ■ ■ ■ Cancer Screenings

Cancer screening tests are perhaps the most powerful tools in the prevention, early detection, and successful treatment of cancer. Regular screening examinations by a health care professional can result in the detection of cancer at earlier stages leading to improved long-term survival. Screening tests currently have been developed for cancers of the breast; cervix; colon and rectum; lung and bronchus; oral cavity and pharynx; prostate; skin; and testis.

According to self-reported data from 2008, 75.8% of Ohio women aged  $\geq 40$  years received an annual screening mammogram for breast cancer in the past two years. An even greater majority (82.7%) of women aged  $\geq 18$  years reported having a Pap test in the past three years to detect cervical cancer. Only three of five (60.8%) Ohio adults aged  $\geq 50$  years reported ever having had a colonoscopy or sigmoidoscopy to detect colon and rectum cancer. Two screening tests are commonly used to detect prostate cancer—the prostate-specific antigen (PSA) test and digital rectal exam (DRE); however, the American Cancer Society recommends that asymptomatic men discuss with their health care provider the benefits and risks of prostate cancer screening. About one in two males (54.6%) aged  $\geq 50$  years received a PSA test in the past two years, and about one in two males (48.7%) aged  $\geq 50$  years received a DRE in the past year. The prevalence of mammography, Pap testing, colonoscopy/sigmoidoscopy, and PSA screening in Ohio was not found to differ significantly by race/ethnicity in 2008. In addition, the prevalence of these screenings in Ohio was similar to the U.S. median (Table 7.1).



**Table 7.1 Prevalence (percent) and 95% confidence intervals (CI) of selected cancer screenings by sex, race, and ethnicity – Ohio and United States, 2008**

Cancer Screening	Year	Ohio % (95% CI)	United States% (95% CI)
<b>Mammography Screening Past Two Years (Females, 40+)</b> <sup>1,2,3</sup>	2008	75.8 (74.4-77.2)	76.0
• White		75.8 (74.3-77.3)	76.1
• Black		79.5 (74.6-84.4)	79.4
• Hispanic		NA	73.5
<b>Pap Test Past Three Years (Females, 18+, Intact Cervix)</b> <sup>1,2</sup>	2008	82.7 (81.1-84.3)	82.9
• White		82.4 (80.6-84.1)	83.0
• Black		86.8 (81.0-92.5)	86.5
• Hispanic		86.0 (77.3-94.7)	85.5
<b>Ever Had a Colonoscopy/Sigmoidoscopy (50+)</b> <sup>1,2</sup>	2008	60.8 (59.4-62.3)	62.2
• Male		59.5 (57.2-61.9)	61.9
• Female		61.9 (60.2-63.6)	61.9
• White		61.2 (59.7-62.7)	64.0
• Black		60.5 (54.5-66.4)	58.6
• Hispanic		NA	49.5
<b>Prostate-Specific Antigen Test Past Two Years (Males, 40+)</b> <sup>1,2</sup>	2008	54.6 (52.4-56.9)	54.8
• White		55.0 (52.7-57.4)	57.0
• Black		54.2 (44.3-64.2)	58.9
• Hispanic		–	41.0
<b>Digital Rectal Exam Past Year (Males, 50+)</b> <sup>1,2</sup>	2008	48.7 (46.4-51.1)	–

<sup>1</sup> Ohio Source: 2008 Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2009.

<sup>2</sup> U.S. Source: 2008 Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2009. The U.S. prevalence represents the median prevalence of the 50 states and District of Columbia.

<sup>3</sup> The American Cancer Society recommends that women at average risk of developing breast cancer receive an annual mammography screening starting at 40. Women at exceptionally high risk should begin annual mammography screening at 30. In 2009, the United States Preventive Services Task Force released new breast cancer screening guidelines, recommending that women receive screening mammograms every two years, beginning at 50.

– = Not applicable. Prevalence was not calculated if the unweighted sample size was <50 and/or the confidence interval half width was <10.

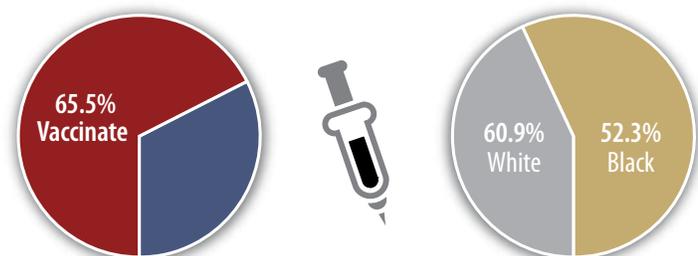
## RECOMMENDED CARE

Screening is designed to identify disease in a population at the earliest possible stage, allowing for definitive diagnosis and initiation of treatment in the hope to reduce death and disability from a disease. While many chronic diseases and conditions have screening tests, recommendations for their use vary based on the governing body issuing the recommendations. The following screening and recommended care data presented here are based on the survey question at the time of collection and therefore may not match current recommendations.

### ■ ■ ■ Immunizations

The CDC recommends everyone aged  $\geq 6$  months receive a vaccine against influenza (against influenza A and B and H1N1 strains) each year. People at high risk of serious complications due to influenza include young children, pregnant women, people with chronic health conditions, and people aged  $\geq 65$  years. In 2009, approximately two-thirds (67.5%) of Ohio adults aged  $\geq 65$  years reported they received a flu shot in the past 12 months, however only 52.3% of black adults aged  $\geq 65$  years reported receiving a flu shot in the past year, compared with 69.0% of white adults.

The CDC also recommends that all adults aged  $\geq 65$  years, as well as high-risk people aged  $\geq 2$  years, receive the pneumococcal polysaccharide vaccine. In 2009, 67.4% of Ohio adults aged  $\geq 65$  years reported ever receiving the pneumococcal vaccine (Table 7.2).



Percentage of flu vaccinations

### ■ ■ ■ Diabetes Care

Appropriate self-care for diabetes mellitus (DM) can have a tremendous impact on long-term morbidity and mortality, yet is often a time-consuming and difficult challenge. Recommended care for persons with DM includes daily blood glucose monitoring, regular doctor visits, hemoglobin A1c testing (an average blood glucose measurement recommended every 2-3 months in most people with DM), and yearly dilated eye and foot exams. In Ohio in 2009, 65.0% of Ohio adults with DM aged  $\geq 18$  years reported monitoring their blood glucose daily. Daily blood glucose monitoring was statistically similar in both females (68.3%) and males (61.6%), and between whites (71.7%) and blacks (65.2%). The same reported data from 2009 showed that in the past 12 months: 85.0% of Ohio adults with diabetes reported visiting a doctor; 69.6% reported receiving two or more A1c tests, 65.6% received a dilated eye exam, and 69.2% received a foot exam (Table 7.2).

**Table 7.2** Prevalence (percent) and 95% confidence intervals (CI) of selected recommended care indicators by sex, race, and ethnicity – Ohio, 2009 and United States, 2008–2009

Recommended Care	Year	Ohio % (95% CI)	Year	United States% (95% CI)
<b>Flu Shot Past 12 Months (65+)<sup>1,2</sup></b>	2009	67.5 (65.4-69.5)	2009	70.1
• Male		70.4 (67.1-73.8)		70.4
• Female		65.4 (62.8-68.0)		69.5
• White		69.0 (66.9-71.2)		72.1
• Black		52.3 (43.8-60.8)		57.5
• Hispanic		–		65.3
<b>Ever Received Pneumonia Vaccine (65+)<sup>1,2</sup></b>	2009	67.4 (65.3-69.5)	2009	68.5
<b>Adults (18+) With Diabetes Who Monitor Blood Glucose Daily<sup>1,3</sup></b>	2009	65.0 (61.4-68.6)		63.5
• Male		61.6 (55.8-67.4)		60.8
• Female		68.3 (64.0-72.6)		66.4
• White		65.2 (61.3-69.1)		64.0
• Black		71.7 (60.7-82.7)		65.2
• Hispanic		–		59.6
<b>Adults (18+) With Diabetes Who Visited Doctor Past 12 Mo.<sup>3,4</sup></b>	2009	85.0 (83.8-86.2)	2008	86.7
<b>Adults (18+) With Diabetes Who Received 2+ A1c Tests Past 12 Mo.<sup>3,4</sup></b>	2009	69.6 (68.2-71.0)	2008	68.5
<b>Adults (18+) With Diabetes Who Received Dilated Eye Exam Past 12 Mo.<sup>3,4</sup></b>	2009	65.6 (64.3-66.9)	2008	62.2
<b>Adults (18+) With Diabetes Who Received Foot Exam Past 12 Mo.<sup>3,4</sup></b>	2009	69.2 (67.8-70.6)	2008	67.2

<sup>1</sup> Ohio Source: 2009 Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010.

<sup>2</sup> U.S. Source: 2009 Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2010. The U.S. prevalence represents the median prevalence of the 50 states and District of Columbia.

<sup>3</sup> U.S. Source: National Surveillance Data. National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation, Centers for Disease Control and Prevention. Available at: <http://www.cdc.gov/diabetes/statistics/index.htm>. Retrieved 2/24/11. Note: Data are age adjusted.

<sup>4</sup> Ohio Source: Ohio Surveillance Data. National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation, Centers for Disease Control and Prevention. Available at: <http://apps.nccd.cdc.gov/DDTSTRS/default.aspx>. Retrieved 2/24/11. Note: Data are age adjusted and based on a rolling two-year average.

– = Not applicable. Prevalence was not calculated if the unweighted sample size was <50 and/or the confidence interval half width was <10.

# MATERNAL & CHILD HEALTH



## MATERNAL & CHILD HEALTH

Maternal and child health is a specialized area of public health focusing on specific population groups, primarily infants, children, and reproductive-aged women, rather than on singular illnesses or conditions. Therefore, this section is organized into four subsections: Preconception, Perinatal, Infant, and Child/Adolescent, with available indicators arranged correspondingly. Any trend data presented in the text below is described as increased, decreased, or changed if there was a statistically significant change.

### ■ ■ ■ Preconception

Preconception health is the health of a woman before she becomes pregnant and is recognized as a key determinant for both a healthy pregnancy and a woman's overall reproductive health. Addressing maternal health concerns before pregnancy can result in a healthier pregnancy, can prevent poor birth outcomes, and often has life-long benefits for both the mother and child. Furthermore, as nearly half of all pregnancies in Ohio are unplanned, and because the first few weeks of pregnancy (before many women know they are pregnant) are so crucial to pregnancy and birth outcomes, ensuring preconception health is the most effective strategy for improving pregnancy outcomes. A selection of preconception health indicators in Ohio and the United States are presented in Table 8.1.1.

SUGGESTION for GRAPH?

**Table 8.1.1 Prevalence or incidence of selected preconception health indicators – Ohio, 2006-2009 and United States, 2006-2008**

Preconception health indicator	Ohio		United States	
	Year	Percent (%) and 95% CI or Rate	Year	Percent (%) and 95% CI or Rate
Women aged 18–44 years having a live birth who reported having an unintended pregnancy <sup>1</sup>	2006-2008	45.0 (43.0 -47.0)	–	–
Women aged 18–44 years having a live birth who were not trying to get pregnant at the time of conception and neither they nor their partners were using any contraceptive method to avoid pregnancy <sup>1</sup>	2006-2008	57.1 (54.3 -59.8)	–	–
Adolescent girls (grades 9–12) having had sexual intercourse for the first time before age 13 years <sup>2</sup>	2007	4.1 (3. –5.6)	2007	3.1 (2.7 - 3.6)
Women in need of publicly funded contraception <sup>3</sup>	2008	27.4	2008	26.4
Abortion rate per 1000 females <sup>4</sup>	2009	11.8/1000	2006	16.1/1000
Women aged 18–44 years having a live birth who had <18 months between their previous live birth and their current live birth <sup>5</sup>	2009	13.1	–	–
Women aged 18–44 years having a live birth who took a multi-vitamin, prenatal vitamin or folic acid supplement every day of the month before pregnancy <sup>1</sup>	2006-2008	29.0 (27.2 -30.8)	–	–
Mothers who smoked in the 3 months before pregnancy <sup>5</sup>	2009	24.8	–	–
Mothers who were overweight before pregnancy <sup>5</sup>	2009	24.1	–	–
Mothers who were obese before pregnancy <sup>5</sup>	2009	23.9	–	–
Women aged 18–44 years who had a routine checkup in past year <sup>6</sup>	2004-2008	61.4 (59.4-63.4)	–	–
Women aged 18–44 years having a live birth who had health coverage during the month before pregnancy <sup>1</sup>	2006-2008	75.8 (73.9 – 77.5)	–	–

<sup>1</sup>Ohio Source: 2006–2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010.

<sup>2</sup>2007 Ohio Youth Risk Behavior Survey (YRBS), Ohio Department of Health, 2010

<sup>3</sup>Ohio and US Source: 2008 Alan Guttmacher Institute. Numbers and percents are estimates based on 2008 U.S. Census Data, The 2002 National Survey of Family Growth and the 2008 Current Population Survey.

<sup>4</sup>Ohio Source: Induced Abortions in Ohio, 2009 Annual Report. U.S. Source: "US: Abortion Surveillance—United States, 2006", MMWR Surveillance Summaries, Nov. 27, 2009, 58(SS08).

<sup>5</sup>Ohio Source: 2009 Vital Statistics, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010.

<sup>6</sup>Ohio Source: Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010.

– Not Available

## ■ ■ ■ Perinatal

The perinatal period comprises a woman's pregnancy, delivery, and the immediate weeks following birth. Maternal health risks and access to appropriate healthcare during this time can both positively and negatively affect pregnancy outcomes. Important adverse pregnancy outcomes include infants born prematurely or with low birth weight (LBW).

## ■ ■ ■ Low and Very Low Birth Weight

Newborns' weight at birth is closely related to their risk of early death and long-term morbidity. LBW is defined as a weight of <2,500 grams (about 5.5 pounds) at birth and is associated with cerebral palsy, autism, developmental delay, vision and hearing impairments, and other developmental disabilities in children. LBW infants have longer hospital stays and require more specialized care compared with normal weight infants, and national expenditures for the care of these infants total more than half of the cost incurred for all newborns combined.

Very low birth weight (VLBW) is a weight of <1,500 grams (about 3.3 pounds) at birth. Although infants weighing <1,500 grams are a small percentage of births, they account for up to half of the deaths of newborns. Nearly 90% of the very smallest infants (<500 grams) die within the first year of life. VLBW infants who do survive are at substantially increased risk for severe health problems, including physical and visual difficulties, developmental delays, and cognitive impairment. Conditions associated with both LBW and VLBW births all require increased levels of medical, educational, financial and caregiver support.

Maternal factors associated with increased risk of having a LBW and VLBW baby include minority status, age, poverty, low level of educational attainment, number of previous pregnancies, previous pregnancy outcome, lack of adequate prenatal care, inadequate weight gain in pregnancy, twin/multiple births, perinatal infection, stress, smoking, other substance abuse, and chronic health problems. LBW and VLBW are usually associated with preterm birth and the risk factors causing premature birth typically overlap.

The LBW rate is expressed as the percentage of infants born in a given year with birth weight <2,500 grams among all live births in that year. In Ohio in 2009, the LBW rate was 8.5%, higher than the national rate of 8.2% in 2008 (Table 8.2.1). Ohio's overall LBW rate increased significantly from 7.5% in 1994 to 8.8% in 2006 then remained unchanged through 2008. In 2009, black infants were twice as likely as white infants in Ohio to be born LBW, which paralleled national data. The LBW percentage among blacks increased significantly between 1994 and 2008 in Ohio, while the rate among whites increased from 6.4% in 1994 to 7.6 % in 2006, then remained constant through 2008. The Hispanic LBW percentage did not change between 2004 and 2008 and was similar to that of whites in 2009.

The VLBW rate is the percentage of infants born with birth weight <1,500 grams among all live births in a given year. In 2009, the overall Ohio VLBW rate was 1.6%, which was greater than the national rate of 1.5% in 2008. The VLBW rate significantly increased in Ohio from 1994 through 2008. Among whites the rate increased from 1.0% in 1994 to 1.3% in 2008, and the rate among blacks increased from 2.9 % in 1994 to 3.2% in 2008. VLBW was two and one half more times as common among blacks infants compared with white infants. Because of the relatively small numbers of births among Hispanics, there was greater variation in the VLBW rate from one year to the next, and no statistically significant change occurred from 2004 to 2008.

### ■ ■ ■ Preterm Birth

Defined as a live birth percent of live births occurring before 37 weeks completed gestation among all live births. In 2009, 12.1% of Ohio live births were classified as preterm (Table 8.2.1). The overall rate of preterm births increased from 10.7% in 1994 to 11.8% in 2002 and to a greater degree from 11.8% in 2002 to 13.1% in 2006. Preterm birth rates have stayed unchanged through 2008.

Blacks experienced the highest preterm birth rate in Ohio of all groups examined, whereas the rate for Hispanics was slightly elevated compared to that of whites. The percentage of preterm births in blacks decreased from 1994 (17.2%) to 2001 (16.4%), increased to 18.3% in 2006 then remained stable through 2008. The Hispanic preterm birth rate increased from 11.6% in 1994 to 12.2% in 2008, while a substantial increase in white preterm births was observed from 2002 (11.0%) to 2006 (12.1%), with no significant change thereafter.

### ■ ■ ■ Births to Adolescents (15-17)

Maternal age can affect the overall health and wellbeing of both mother and child. Pregnancy in teens results in higher risk for pregnancy and birth complications, and both teen mothers and their children are more likely to drop out of school and attain a lower education, further increasing the risk for adverse health outcomes. Nearly two thirds of births to women aged <18 years in the United States were unintended in 2009, and in Ohio, pregnant women aged <17 years had a higher proportion of LBW infants (11.2%) compared with pregnant women aged ≥18 years.

The birth rate to adolescents is defined as the number of births per 1,000 girls aged 15-17 years. In 2009, teens aged 15–17 years had a live birth rate of 18.7 per 1,000 in Ohio (Table 8.2.1), compared with 20.1 per 1,000 in the United States. The overall Ohio live birth rate among girls aged 15–17 years fell from 1994 (14.0%) through 2003 (13.0%) then dropped significantly by 5% from 2007 to 2009. These drops follow the national trend in decreasing teen birth rates.

Yet, in Ohio in 2009, black (41.0) and Hispanic (39.7) teens aged 15–17 years each experienced a live birth rate almost 3 times that of white teens (14.4). The white teen birth rate declined from 26.3 in 1994 to 14.5 in 2004 and has since been stable, whereas the black teen birth rate declined significantly from 84.1 in 1994 to 46.3 in 2002 but has remained unchanged since 2002. The Hispanic rate of live births among those aged 15–17 years did not change during 1994 to 2008.

**Table 8.2.1 Prevalence or incidence of selected perinatal indicators—Ohio, 2006–2009 and United States, 2006–2008**

Perinatal Indicator	Ohio		United States	
	Year	Percent (%) and 95% CI or Rate	Year	Percent (%) and 95% CI or Rate
Women with a live birth who lacked 1st trimester prenatal care <sup>1</sup>	2009	29.8	2008	29.0
Premature Births (<37 weeks gestation) <sup>1</sup>	2009	12.1	2008	12.3
White		11.0		11.4
Black		17.3		17.3
Asian and Pacific Islander		10.7		10.7
Hispanic		12.6		12.1
Very premature births (<32 weeks gestation) <sup>1</sup>	2009	2.2	2008	2.0
Moderately premature births (32-36 weeks gestation) <sup>1</sup>	2009	10.0	2008	10.3
Low birth weight (<2500 grams) <sup>1</sup>	2009	8.5	2008	8.2
White		7.4		7.1
Black		13.7		13.4
Asian and Pacific Islander		8.2		8.2
Hispanic		7.6		7.0
Very low birth weight (<1500 grams) <sup>1</sup>	2009	1.6	2008	1.5
Cesarean section for low risk moms having their first baby <sup>2</sup>	2009	27.4	–	–
Mothers who smoked during pregnancy <sup>1</sup>	2009	–	–	–
At any time		19.2		–
1st Trimester		18.8		–
2nd Trimester		16.3		–
Last 3 Months		15.5		–
Percentage of women ages 18-44 having a live birth who experienced depressive symptoms after pregnancy <sup>3</sup>	2006–2008	11.1 (9.9 - 12.4)	–	–
Multiple birth rate per 1,000 births <sup>1</sup>	2009	35.1/1,000	2008	33.7/1,000
Births to adolescents (15–17 years) per 1,000 population <sup>1</sup>	2009	18.7/1,000	2008	21.7/1,000
White		14.4/1,000		11.5/1,000
Black		41.0/1,000		34.8/1,000
Asian and Pacific Islander		5.7/1,000		7.9/1,000
Hispanic		39.7/1,000		46.1/1,000
Pregnancies to Adolescents (15–17 years) per 1,000 population <sup>4</sup>	2009	37.2/1,000	2006	38.9/1,000

## ■ ■ ■ Infant

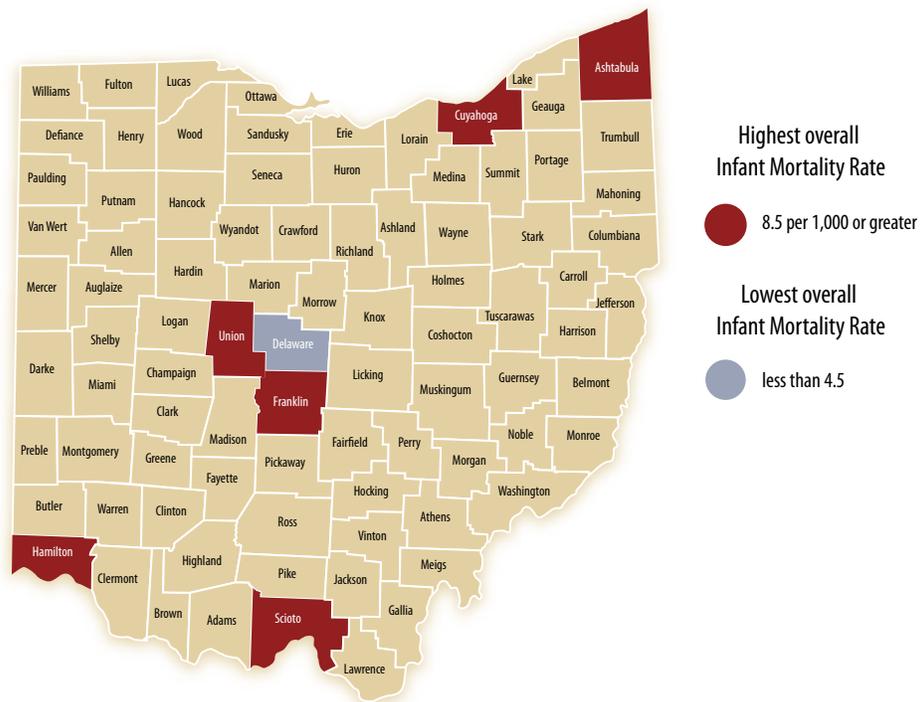
Infants are defined here as babies from the time of a live birth until the first birthday.

## ■ ■ ■ Infant Mortality

Infant mortality is the death of an infant aged <1 year. The leading causes of infant death nationally are congenital malformations (one-fifth of all infant deaths), prematurity-related disorders and low birth weight, and sudden infant death syndrome (SIDS). According to the 2010 Ohio Child Fatality Review, prematurity and congenital anomalies accounted for 68% of all infant deaths from medical causes and 58% of infant deaths from all causes in Ohio.

The infant mortality rate (IMR) is the number of deaths per 1,000 live births in a given year. In 2009, 1,109 infants in Ohio died before their first birthday. This represents an IMR of 7.7, higher than the national rate of 6.8 in 2007 (Table 8.3.1). From 1990 through 1997 the IMR significantly decreased 3% per year, however, from 1997 to 2009 no further change occurred and in 2007, Ohio had the twelfth highest IMR in the United States. For Ohio counties with 20 or more infant deaths during 2006–2008, the highest overall IMR (8.5 per 1,000 or greater) were reported in the following counties: Hamilton, Cuyahoga, Franklin, Union, Ashtabula, and Scioto. The county with at least 20 deaths but with the lowest overall IMR (less than 4.5) was Delaware.

For the past decade, a black infant born in Ohio has been about two and one half times as likely to die in the first year of life compared with a white infant. The 2009 IMR for black infants was 14.2 compared with 6.4 for white infants. This ratio mirrors 2008 U.S. IMR data with black infants (13.2) being 2.4 times more likely to die than white infants (5.6). The 2009 Ohio IMR for Hispanic infants was 7.4 compared with 7.7 for all non-Hispanic infants, but was slightly greater than the 2007 U.S. IMR for Hispanic infants (5.7) (Table 8.3.1).



<sup>4</sup>Kung HC, Hoyert DL, Xu JQ, Murphy, SL. E-stat deaths: preliminary data for 2005 health E-stats. Hyattsville, MD: US Department of Health and Human Services, CDC; 2007. Accessed at <http://www.cdc.gov/nchs/products/pubs/pubd/hestats/prelimdeaths05/prelimdeaths05.htm>.

<sup>5</sup>Ohio Child Fatality Review. Accessed at <http://www.childdeathreview.org/reports/OH2010.pdf>.

**Table 8.3.1 Fetal, infant, and perinatal mortality rates\*– Ohio, 2008–2009 and United States, 2005–2007**

Perinatal Indicator	Ohio		United States	
	Year	Percent (%) and 95% CI	Year	Percent (%) and 95% CI
Infant mortality rate (<1 year) per 1,000 live births <sup>1</sup>	2009	7.7	2007	6.8
White		6.4		5.6
Black		14.2		13.2
Asian and Pacific Islander		2.6		4.8
Hispanic		7.4		5.7
Perinatal mortality rate (28 weeks gestation to <7 days) per 1,000 live births and fetal deaths >28 weeks gestation <sup>3</sup>	2009	6.6	2005	6.6
Neonatal mortality Rate (<28 days) per 1,000 live births <sup>1</sup>	2009	5.2	2007	4.4
Fetal mortality rate per 1,000 live births <sup>3</sup>	2008	6.0	2005	6.2

<sup>1</sup> Ohio Source: Ohio Vital Statistics, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2011.

U.S. Source: Mathews TJ, MacDorman MF. Infant mortality statistics from the 2007 period linked birth/infant death data set. National vital statistics reports; vol 59 no 6. Hyattsville, MD: National Center for Health Statistics. 2011.

<sup>2</sup> Does not meet standard of statistical reliability and precision, interpret with caution (based on fewer than 20 events).

<sup>3</sup> Ohio Source: Ohio Vital Statistics, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2011.

U.S. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Accessed at <http://205.207.175.93/VitalStats/TableViewer/tableView.aspx?ReportId=21511> on Oct 17, 2011.

\*Per 1,000 live births

**Table 8.3.2 Prevalence of selected infant health indicators – Ohio, 2006–2009 and United States, 2007**

Clinical Risk Factor	Ohio		United States	
	Year	Percent (%) and 95% CI	Year	Percent (%) and 95% CI
Baby breastfed at discharge <sup>1</sup>		64.6		–
White		66.4		–
Black	2009	51.5	–	–
Asian and Pacific Islander		83.0		–
Hispanic		70.3		–
Breastfeeding at ages 3, 6, and 12 months <sup>2</sup>		–		–
Ever	2007	64.8 (57.4-72.2)	2007	75.0 (73.8-76.2)
6 months		37.5 (30.7-44.3)		43.0 (41.7-44.3)
12 months		20.3 (15.1-25.5)		22.4 (21.3-23.5)
Infant mortality rate (birth to 1 year) <sup>1</sup>		7.7		6.8
White		6.4		5.6
Black	2009	14.2	2007	13.2
Asian and Pacific Islander		2.6		4.8
Hispanic		7.4		5.7
Infants exposed to second hand smoke <sup>3</sup>	2006–2008	7.0 (6.0 - 8.2)	–	–

<sup>1</sup> Ohio Source: 2009 Vital Statistics, Center for Public Health Statistics and Informatics, Ohio Department of Health.

<sup>2</sup> Ohio and U.S. Source: Division of Nutrition, Physical Activity and Obesity, National Center for Chronic Disease Prevention and Health Promotion. [http://www.cdc.gov/breastfeeding/data/NIS\\_data/](http://www.cdc.gov/breastfeeding/data/NIS_data/)

<sup>3</sup> Ohio Source: 2006-2008 Ohio Pregnancy Risk Assessment Monitoring System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010. (Defined as mother reports smoking being allowed in the home).

– Not available

## ■ ■ ■ Child / Adolescent

Data in this section focus on childhood, beginning at age 1 year, through adolescence, defined here as ages 15–19 years. Expanded child mortality data are presented in the text below with additional child and adolescent health data presented in table format only.

## ■ ■ ■ Child Mortality

The child mortality rate is used to assess the overall health of children. In 2007, the U.S. mortality rate for children was 19.0 per 100,000 (Table 8.4.1). Unintentional injuries accounted for 30% of all deaths in children aged 5–14 years; the second leading cause of death was malignant neoplasms (16%) followed by congenital anomalies and homicide.

In 2009, the overall mortality rate for children aged 1–14 years in Ohio was 18.2 per 100,000, similar to the national rate of 19.0 in 2007. Unintentional injuries accounted for 33.1% of all mortality in children during 2005–2007. Motor vehicle crashes were the leading cause of death from unintentional injury, accounting for 48% of fatalities, followed by accidental exposure to smoke, fire and flames; accidental drowning and submersion; and other and unspecified, non-transport-related injuries.

The 2009 Ohio child mortality rate among black children aged 1–14 years was 30.4 per 100,000. Black children were approximately twice as likely to die as their white counterparts, whereas the rate for Hispanic children was 15.1 per 100,000 and comparable to that of white children at 15.9 deaths per 100,000 (Table 8.4.1). These rates were comparable with 2007 rates in the United States.

**Table 8.4.1 Child and adolescent mortality rates\* by race, ethnicity, and sex – Ohio, 2009 and United States, 2007**

Mortality Rate	Ohio		United States	
	Year	Percent (%) and 95% CI	Year	Percent (%) and 95% CI
Children (ages 1–14 years) <sup>1</sup>	2009	18.2	2007	19.0
White		15.9		17.3
Black		30.4		29.0
Asian and Pacific Islander <sup>2</sup>		15.9		–
Hispanic		15.1		21.9
Male		20.1		19.9
Female		16.3		18.0
Adolescents (ages 15–19 years) <sup>1</sup>		2009		47.4
White	44.8		58.6	
Black	62.3		83.4	
Asian and Pacific Islander <sup>2</sup>	32.5		32.7	
Hispanic	29.6		57.9	
Male	67.3		86.8	
Female	26.7		35.7	

<sup>1</sup> Ohio Source: Ohio Vital Statistics, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2011. U.S. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Compressed Mortality File 1999-2007. CDC WONDER On-line Database compiled from Compressed Mortality File 1999-2007 Series 20 No. 2M, 2010. Accessed at <http://wonder.cdc.gov/cmfi-icd10.html> on Oct 19, 2011.

<sup>2</sup> Does not meet standard of statistical reliability and precision, interpret with caution (based on fewer than 20 events.)

\*Per 100,000 population

– Not available.

**Table 8.4.2 Prevalence of child and adolescent health indicators of overweight, obesity, and related behaviors – Ohio, 2006–2010 and United States, 2007–2008**

Child and Adolescent Health Indicators	Ohio		United States	
	Year	Percent (%) and 95% CI	Year	Percent (%) and 95% CI
Children aged 2–5 years on WIC who are overweight <sup>1</sup>	2009	15.7	2008	16.5
Children aged 2–5 years on WIC who are obese <sup>1</sup>	2009	12.3	2008	14.8
3rd grade children who are overweight <sup>2</sup>	2009–2010	16.3 (15.4-17.4)	–	–
3rd grade children who are obese <sup>2</sup>	2009–2010	18.3 (16.7-20.2)	–	–
3rd grade children who drank two or more sugar-sweetened beverages per day <sup>2</sup>	2009–2010	39.3 (37.34-41.2)	–	–
3rd grade children who watch more than 2 hours of television per school day <sup>2</sup>	2006–2009	21.1 (18.9-23.2)	–	–
Ohio adolescents (grades 9–12) who have adequate physical activity <sup>3</sup>	2007	44.7 (42.4 - 47.1)	2007	34.7 (32.5 -37.0)
Ohio adolescents (grades 9–12) who eat recommended fruits and vegetables <sup>3</sup>	2007	15.5 (13.8 -17.5)	2007	21.4 (19.8 - 23.1)

<sup>1</sup> Ohio Source: 2009 Ohio Pediatric Nutrition Surveillance System, Division of Family and Community Health Services, Ohio Department of Health, 2010. U.S. Source: 2008 Pediatric Nutrition Surveillance System, Centers for Disease Control and Prevention. Contributors included 43 states, the District of Columbia, 6 Indian Tribal Organizations, and 2 U.S. territories.

<sup>2</sup> Oza-Frank R, Norton A, Scarpitti H, Wapner A, Conrey E (2011 March). A Report on the Body Mass Index of Ohio’s Third Graders: 2009-10. Ohio Department of Health, Columbus, OH.

<sup>3</sup> Ohio Source: 2007 Ohio Youth Risk Behavior Survey (YRBS), Ohio Department of Health. US Source: CDC Youth Risk Behavior Surveillance System <http://www.cdc.gov/HealthyYouth/yrbs/index.htm>

– Not available

**Table 8.4.3 Prevalence of indicators of access to health care and quality of health care among children and adolescents – Ohio, 2007–2010 and United States, 2007–2008**

Adolescent Health Indicators	Ohio		United States	
	Year	Percent (%) and 95% CI	Year	Percent (%) and 95% CI
3rd grade children with untreated dental caries <sup>1</sup>	2009–2010	18.7 (17.05-20.31)	–	–
Access to health care that meets AAP definition of a medical home <sup>2</sup>	2007	66.2 (62.8 - 69.6)	2007	57.5 (56.7 - 58.4)
Children who visited a doctor in the past year <sup>3</sup>	2008	79.6 (78.6-80.3)	–	–
Children who visited a dentist in the past year <sup>3</sup>	2008	67.1 (66.0-68.2)	–	–
Children with unmet dental care needs <sup>3</sup>	2008	4.5 (4.0-5.0)	–	–
Children with unmet vision care needs <sup>3</sup>	2008	1.1 (0.8-1.3)	–	–
Children who visited an eye doctor in the past year <sup>3</sup>	2008	43.8 (42.6-44.9)	–	–
Children uninsured for medical care <sup>4</sup>	2008	4.0 (3.6-4.5)	2008	9.9
Children uninsured for dental care <sup>3</sup>	2008	18.3 (17.4-19.1)	–	–

<sup>1</sup> 2009-2010 Make Your Smile Count Oral Health and BMI Survey of Ohio Third Grade Schoolchildren conducted by the Ohio Department of Health. Data collected as part of an open-mouth screening conducted by licensed dentists and hygienists.

<sup>2</sup> Child and Adolescent Health Measurement Initiative. 2005/06 National Survey of Children with Special Health Care Needs, Data Resource Center for Child and Adolescent Health website [www.childhealthdata.org](http://www.childhealthdata.org).

<sup>3</sup> Ohio Source; Ohio Family Health Survey, 2008.

<sup>4</sup> Ohio Source; Ohio Family Health Survey, 2008. U.S. Source; U.S. Census Bureau, 2009 Annual Social & Economic Supplement.

– Not available

**Table 8.4.4 Prevalence of selected indicators of child and adolescent health – Ohio and United States, 2006–2009**

Child and Adolescent Health Indicators	Ohio		United States	
	Year	Percent (%) and 95% CI	Year	Percent (%) and 95% CI
Youth current cigarette smoking <sup>1</sup>		–		–
Grades 6–8	2008	5.0 (3.7 -6.3)	2009	5.2
Grades 9–12		19.4 (17.3 – 21.5)		17.2
Youth current smokeless tobacco use <sup>1</sup>		–		–
Grades 6–8	2008	3.9 (2.6 –5.2)	2009	2.6
Grades 9–12		10.0 (8.4 – 11.6)		6.7
Children who currently have asthma <sup>2</sup>	2009	9.4 (8.1 – 10.8)	2009	9.0
Elevated blood lead levels in children <6 years of age <sup>3</sup>	2009	1.5	–	–
Children <18 years of age in foster care <sup>4</sup>	2006	9.2	2006	10
Child maltreatment (rate per 1,000 children <18 years) <sup>4</sup>	2008	9/1000	–	–
Crime arrests in juveniles 0-18 years of age (rate per 1,000 children <18 years) <sup>5</sup>	2008	16/1000	–	–

<sup>1</sup> Ohio Source: 2008 Ohio Youth Tobacco Survey, Tobacco Use Prevention and Cessation Program, Office of Healthy Ohio, Ohio Department of Health. U.S. Source: CDC. Tobacco Use Among Middle and High School Students --- United States, 2000—2009. MMWR 2010;59:1063-1068. Accessed at <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5933a2.htm> on October 19, 2011.

<sup>2</sup> Ohio Source: 2009 Ohio Behavioral Risk Factor Surveillance System, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2010. U.S. Source: 2009 Behavioral Risk Factor Surveillance System, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 2010. The U.S. prevalence represents the median prevalence of the 50 states and District of Columbia.

<sup>3</sup> Ohio Source: Lead Surveillance Program, Ohio Department of Health.

<sup>4</sup> Source: Annie E Casey Foundation, Kids Count Data Center. Accessed at <http://datacenter.kidscount.org> on October 19, 2011.

<sup>5</sup> Ohio Criminal Justice Statistical Reports. Violent and property crime against person.

– Not available

**Table 8.4.5 Prevalence of selected health indicators among children with special health care needs (CSHCN) compared with children without special healthcare needs – Ohio and United States, 2007-2010**

Indicator	Year	Ohio		United States	
		CSHCN % and 95% CI	non-CSHCN % and 95% CI	CSHCN % and 95% CI	non-CSHCN % and 95% CI
Access to health care that meets AAP definition of a medical home	2007	58.8 (50.9 – 66.7)	68.4 (64.7 – 72.1)	49.8 (48.0 - 51.6)	59.4 (58.4 – 60.3)
CSHCN (aged 12–17 years) who receive the services necessary to make transitions to adult health care, work, and independence <sup>1</sup>	2007	48.5 (42.0 – 54.9)	–	41.2 (39.9 – 42.5)	–
Health insurance always allows child to see health care providers needed <sup>1</sup>	2007	78.7 (71.6 – 85.8)	86.3 (83.6 – 89.0)	76.3 (74.7 – 78.0)	84.5 (83.8 – 85.3)
Current health insurance not adequate to meet child's needs <sup>1</sup>	2007	28.1 (21.1 – 35.1)	20.1 (17.7 – 23.1)	29.4 (27.6 – 31.1)	22.1 21.3 – 22.9)
Health insurance never or only sometimes covers services that meet needs <sup>1</sup>	2007	6.9 (3.7 – 10.1)	4.6 (3.0 – 6.1)	9.8 (8.6 – 10.9)	6.5 (6.0 – 7.1)
Lives in household with income below the federal poverty level <sup>1</sup>	2007	26.4 (18.9 – 34.0)	14.5 (11.5 – 17.5)	20.2 (18.7 – 21.7)	18.2 (17.4 – 19.0)
Parent felt stress from parenting during past month <sup>1</sup>	2007	18.4 (11.8 – 25.0)	5.2 (3.7 – 6.8)	20.0 (18.4 – 21.5)	18.2 (17.4 – 19.0)
Problems paying or unable to pay for medical bills <sup>2</sup>	2010	48.7 (40.2 – 57.1)	35.2 (32.3 – 38.2)	–	–
Used up most of personal savings <sup>2</sup>	2010	35.2 (26.9 – 43.4)	21.8 (19.2 – 24.4)	–	–

<sup>1</sup> Child and Adolescent Health Measurement Initiative. 2007 National Survey of Children's Health, Data Resource Center for Child and Adolescent Health. Accessed at [www.childhealthdata.org](http://www.childhealthdata.org) on October 19, 2011.

<sup>2</sup> Ohio Family Health Survey, 2010. Based on children with complex health conditions and children without complex health conditions.

– Not available

.....  
**Table 8.4.6 Incidence and rate\* for indicators of select sexually transmitted diseases among children and adolescents by age – Ohio, 2009**  
 .....

Child and Adolescent Health Indicators	Count	Rate
Chlamydia incidence by years <sup>1</sup>	–	–
10–14	778	100.7
15–19	19390	2,388.9
Gonorrhea incidence by years <sup>1</sup>	–	–
10–14	218	28.2
15–19	5153	634.9
HIV incidence by years <sup>2</sup>	–	–
10–14	0	–
15–19	251	–
Syphilis incidence by years <sup>1</sup>	–	–
10–14	3	0.4
15–19	82	10.1

<sup>1</sup> Source: Ohio Department of Health HIV/AIDS Surveillance Program. For additional Ohio HIV surveillance data visit: [www.odh.ohio.gov/healthStats/disease/hivdata/hivcov.aspx](http://www.odh.ohio.gov/healthStats/disease/hivdata/hivcov.aspx)

<sup>2</sup> Source: Ohio Department of Health, STD Surveillance. Data reported through May 14, 2010.

\* per 100,000 population

– Not available

.....

# HEALTH STATUS & ACCESS TO CARE



## HEALTH STATUS & ACCESS TO CARE

Providing access to high-quality health care is recognized as a significant step toward improving the health status of Ohioans. Having a relationship with a primary care provider improves disease outcomes and reduces other health care system use, and research indicates that primary care physicians can help reduce hospital admission and overall health care costs. Yet, many Ohioans do not have adequate access to the existing primary care workforce, including many residents with multiple chronic conditions and those at risk for developing them. Barriers to access include economic, geographic, or a combination of the two.

Economically, people earning lower incomes are more likely to be uninsured. In Ohio, the number of people living below 200% of the federal poverty level increased by 20% in the last decade to more than 3.5 million Ohioans in 2009, and 1.87 million were enrolled in Medicaid. The number of uninsured people in Ohio was estimated to be 1.33 million in 2008; however, according to preliminary data from the 2010 Ohio Family Health Survey, this number rose by 158,000 in the following two years. Approximately 1.88 million Ohioans are Medicare beneficiaries. Health status and access to care indicators are presented in Table 9.1.

Geographic barriers arise from the uneven distribution of providers throughout the state. To address this, the U.S. Public Health Service Act established the Health Professional Shortage Area (HPSA) designation in 1980 as a means of identifying areas underserved for primary care, dental, and mental health services. The designation considers the ratio of people to providers in a specific service area as well as available healthcare resources in surrounding areas. According to these HSPA criteria, more than 1.38 million (12%) Ohioans have limited or no access to primary care (Table 9.2). These populations include people living in both rural and urban areas who are disproportionately poor and/or minorities. A total of 139 primary care HPSAs are designated within Ohio, and an additional 140 primary care physicians are needed to remove these primary care HPSA designations

<sup>7</sup>American College of Physicians, How is a Shortage of Primary Care Physicians Affecting the Quality and Cost of Medical Care? Philadelphia: American College of Physicians; 2008: White Paper. (Available from American College of Physicians, 190 N. Independence Mall West, Philadelphia

<sup>8</sup>ASPE Issue Brief, Overview of the Uninsured in the United States: A Summary of the 2011 Current Population Survey; ASPE Office of Health Policy, DHHS, September 13, 2011

<sup>9</sup>The American Community Survey 3-Year Estimates for 2007 – 2009, U.S. Census Bureau, Table S1701. Last accessed at [http://factfinder.census.gov/servlet/STTable?\\_bm=y&-qr\\_name=ACS\\_2009\\_3YR\\_G00\\_S1701&-ds\\_name=ACS\\_2009\\_3YR\\_G00\\_&-state=st&-lang=en](http://factfinder.census.gov/servlet/STTable?_bm=y&-qr_name=ACS_2009_3YR_G00_S1701&-ds_name=ACS_2009_3YR_G00_&-state=st&-lang=en) on October 25, 2011

<sup>10</sup>Ohio Department of Job and Family Services. Public Assistance Monthly Statistics Report: Calendar Year 2009. <http://jfs.ohio.gov/PAMS>

<sup>11</sup>Ohio Colleges of Medicine Government Resource Center. Preliminary Findings from the 2010 Ohio Family Health Survey. March 8, 2011 Presentation at the Mid-Ohio Food Bank: Grove City, Ohio

<sup>12</sup>Ibid

<sup>13</sup>Henry J. Kaiser Family Foundation. Kaiser Family Foundation analysis of the CMS State/County Market Penetration file. Ohio Total Number of Medicare Beneficiaries. May 2010. <http://www.statehealthfacts.org/>

<sup>14</sup>For more information on HPSA designation criteria, see <http://bhpr.hrsa.gov/shortage/>

<sup>15</sup>HRSA Geospatial Data Warehouse, Designated HPSA Statistics, Total Population of Designated HPSAs as of February 16, 2011

**Table 9.1 Selected health status and access to care indicators by age, sex, and race – Ohio and United States, 2008**

Clinical Risk Factor	Ohio	United States
	Percent (%) and 95% CI	Percent (%) and 95% CI
Adults uninsured for medical care <sup>1</sup>	14.1 (13.7–14.6)	17.2
Age (Years)	–	–
18–64	17.0 (16.5–17.6)	20.3
65+	0.7 (0.5–0.9)	1.7
Sex	–	–
Male (18–64)	19.2 (18.2–20.1)	22.6
Female (18–64)	15.0 (14.2–15.7)	18.0
Race	–	–
Black (18–64)	27.3 (25.3–29.3)	25.3
White (18–64)	15.3 (14.7–15.9)	19.1
Other	23.1 (20.4–25.7)	23.9
Adults uninsured for dental care <sup>1</sup>	40.6 (40.0–41.3)	–
Age (Years)	–	–
18–64	36.4 (35.7–37.1)	–
65+	60.1 (58.9–61.3)	–
Sex	–	–
Male (18–64)	38.8 (37.7–39.9)	–
Female (18–64)	34.1 (33.2–35.0)	–
Race	–	–
Black (18–64)	38.2 (36.1–40.4)	–
White (18–64)	36.0 (35.2–36.7)	–
Other	40.5 (37.5–43.5)	–
Adult usual source of medical care <sup>1,2</sup>	40.6 (40.0–41.3)	–
Age (Years)	–	–
18–64	72.4 (71.7–73.0)	–
65+	86.1 (85.2–86.9)	–
Sex	–	–
Male (18–64)	67.0 (65.9–68.0)	–
Female (18–64)	77.7 (76.8–78.5)	–
Race	–	–
Black (18–64)	59.3 (57.2–61.5)	–
White (18–64)	74.6 (73.8–75.3)	–
Other	64.7 (61.8–67.7)	–
Adults with unmet dental care needs <sup>1</sup>	13.1 (12.7–13.6)	–
Adults with unmet vision care needs <sup>1</sup>	7.1 (6.7–7.4)	–
Adults Who visited doctor in past year <sup>1</sup>	79.3 (78.8–79.9)	–
Adults Who visited dentist in past year <sup>1</sup>	57.1 (56.5–57.7)	–
Adults who are Medicare beneficiaries <sup>1,3</sup>	19.0 (18.6–19.5)	18.7

<sup>1</sup> Source: Ohio Department of Health HIV/AIDS Surveillance Program. For additional Ohio HIV surveillance data visit: [www.odh.ohio.gov/healthStats/disease/hivdata/hivcov.aspx](http://www.odh.ohio.gov/healthStats/disease/hivdata/hivcov.aspx)

<sup>2</sup> Source: Ohio Department of Health, STD Surveillance. Data reported through May 14, 2010.

\* per 100,000 population

– Not available

**Table 9.2 Primary care HPSA designated population totals – Ohio and United States, 2009–2011**

	Year	Ohio	United States
Total population <sup>1</sup>	2009	11,542,645	307,006,556
Total population of designated HPSAs <sup>2</sup>	2011	1,389,892	66,794,946
Percentage of the population residing in designated HPSAs <sup>3</sup>	2011	12.0	21.8

<sup>1</sup> Source: 2009 American Community Survey 1–Year Estimates, U.S. Census Bureau.

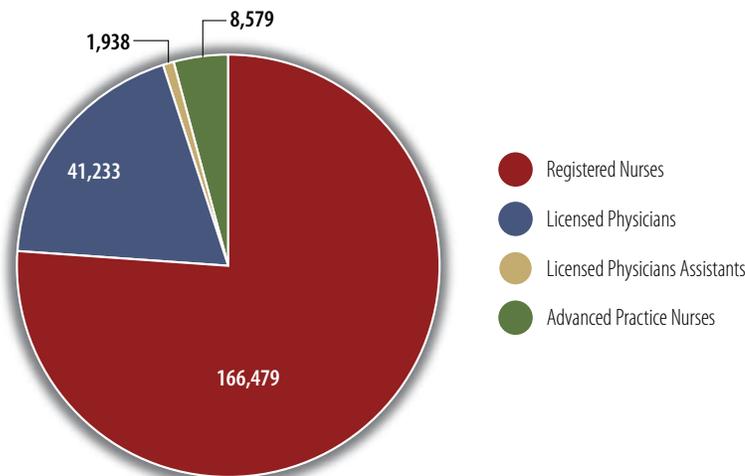
<sup>2</sup> Source: HRSA Geospatial Data Warehouse, Designated HPSA Statistics, Population of Designated HPSAs as of February 16, 2011.

<sup>3</sup> Calculated based on the total population from the U.S. Census Bureau 2009 American Community Survey, and on the total population of designated HPSAs from the HRSA Geospatial Data Warehouse, Designated HPSA Statistics as of February 16, 2011.

### Healthcare Providers

Ohio lacks a single source of comprehensive workforce data for health care providers in practice in the state. Available data sources include Ohio’s health professional licensure boards and the American Medical Association (AMA) and American Osteopathic Association (AOA). The number of health care providers includes the total number of active Ohio licenses and certificates for physicians, physician assistants, and advanced-practice and registered nurses (Figure 9.1). Additionally, in 2008 the number of active physicians in both patient care and primary care per 100,000 people is roughly the same in Ohio as in the United States (Figure 9.2).

**Figure 9.1 Total active Ohio licenses and certificates for physicians<sup>1</sup>, physician assistants<sup>2</sup>, advanced practice nurses<sup>3</sup>, and registered nurses<sup>4</sup> – Ohio, 2009**



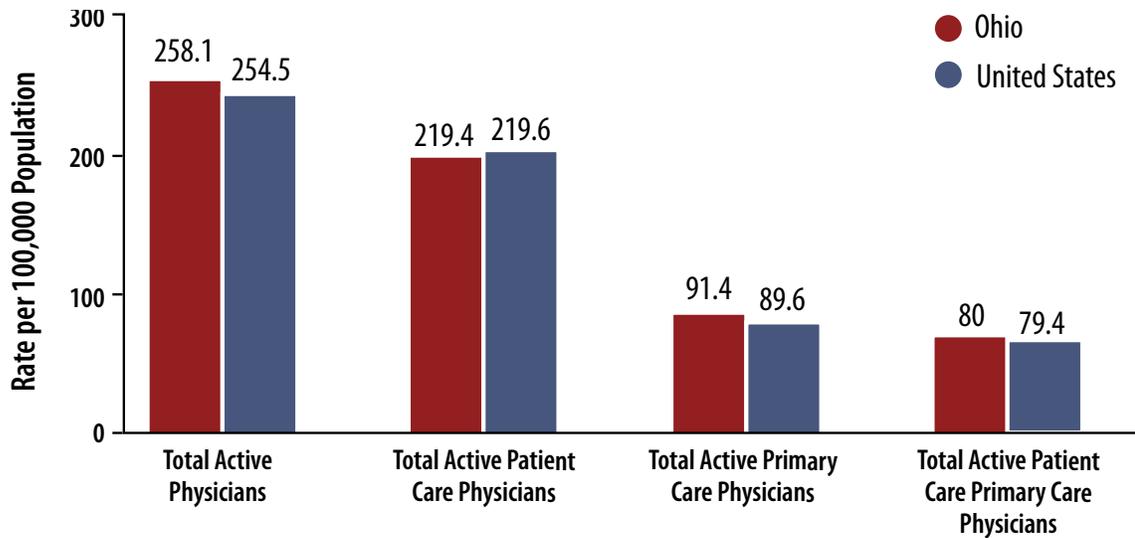
<sup>1</sup> Source: State Medical Board of Ohio Annual Report FY09, Number of total licensed physicians for State Fiscal Year 2009, including all specialties. Total includes Medical Doctors (MDs) and Doctors of Osteopathic Medicine (DOs). Total includes Ohio licensees with an Ohio address and with an out-of-state address.

<sup>2</sup> Source: State Medical Board of Ohio Annual Report FY09, Number of total licensed physician assistants for State Fiscal Year 2009. Total includes Ohio licensees with an Ohio address and with an out-of-state address.

<sup>3</sup> Source: Ohio Board of Nursing Annual Report for FY09, Advanced Practice Nurses Certificates of Authority as of June 30, 2009.

<sup>4</sup> Source: Ohio Board of Nursing Annual Report for FY09, Total Registered Nurses (RNs) as of June 30, 2009.

**Figure 9.2 Rate\* of active physicians in patient care and primary care – Ohio and United States, 2008<sup>1</sup>**



### Local Health Departments

There are 125 local health departments (LHD) in the state of Ohio. Direct health care is provided by many LHDs through Personal Health programming. Managed by a Director of Nursing, Personal Health staff may include physicians, nurses, dietitians, public health educators, dentists, nutritionists, and support staff. A 2010 survey of LHDs showed that of the 95 LHDs responding to the survey, more than 90% (92.6%) reported providing direct patient care, with half (50.5%) reporting providing health services regarding family medicine, internal medicine, pediatrics, or obstetrics and gynecology through physicians, physician assistants, nurse practitioners, or nurse midwives.

### Federally Qualified Health Centers

Thirty-six Federally Qualified Health Center (FQHC) organizations operate statewide in approximately 160 clinic locations in 46 counties. Required to provide care to all patients regardless of insurance status or ability to pay, FQHCs provided care to approximately 475,000 Ohio residents accounting for approximately 1.9 million patient visits in 2009, with 71% of patients being either uninsured or enrolled in Medicaid (data not shown).

### Free Clinics

Forty-one free clinics serve patients in 51 counties in Ohio. Free clinics are nonprofit, community-based organizations providing care at little or no charge to low-income, uninsured, and underinsured people. Each clinic is designed to meet its community's specific needs, and care is provided by volunteer healthcare professionals and through partnerships with other health providers. In 2008, nearly 5,000 free clinic volunteers provided care to 55,000 uninsured and underinsured Ohio residents with approximately 106,000 visits.

### ■ ■ ■ Rural Health Clinics

Ohio has 21 Rural Health Clinics (RHC) located in 12 rural counties. The RHC Program at ODH is designed to improve access to primary care specifically in underserved rural areas. RHCs utilize a team approach consisting of physicians and other practitioners including nurse practitioners, certified nurse midwives, and physician assistants.

### ■ ■ ■ School-Based Health Centers

School-Based Health Centers (SBHC) are centers that provide a variety of health care services for students and located either directly in schools, in adjacent buildings, or by a mobile unit. These 34 centers in Ohio fill a much-needed health care gap for children and youth, and provide primary care, dental care, and mental health services, depending on the needs of the community and size of the clinic. SBHCs are most often run by traditional health care partners (e.g. hospitals, FQHC's, or LHD's that have established satellite centers) and are typically staffed by nurse practitioners in partnership with physicians.

### ■ ■ ■ Critical Access Hospitals

Critical access hospitals (CAH) are small, geographically-remote facilities that provide outpatient and inpatient hospital services to people living in rural areas. The CAH designation was established under the federal Medicare program and specifies that hospitals be located in a rural area; provide 24-hour emergency services; have 25 beds or less and an average length-of-stay for its patients of 96 hours or less; be located more than 35 miles from the nearest hospital (or more than 15 miles in areas with mountainous terrain) or be designated by its State as a "necessary provider." In 2010, CAH's in Ohio discharged more than 50,000 patients (51,420 from 32 hospitals; Data not shown.).

What about a MAP of OHIO where we denote the counties where all the Clinics and Access Hospitals are located... can use symbol or colored circle to identify type????

I can create map - just need a list.

**Table 9.5 Hospitals by type – Ohio, 2009 and 2011**

Child and Adolescent Health Indicators	Year	Ohio Number
Total number of Ohio registered hospitals <sup>1</sup>	2009	239
Total number of center for Medicare and Medicaid	2011	224
State registered general medical/surgical hospitals <sup>1</sup>	2009	178
CMS certified critical access hospitals (CAH) <sup>2,3</sup>	2011	34
CMS certified acute care hospitals <sup>2</sup>	2011	141
CMS certified and state registered children's hospitals <sup>1,2</sup>	2009	6
State registered psychiatric hospitals <sup>1</sup>	2009	10
CMS certified psychiatric hospitals <sup>2</sup>	2011	14
State registered physical rehab hospitals <sup>1</sup>	2009	4
CMS certified physical rehab hospitals <sup>2</sup>	2011	3
State registered alcohol/drug abuse hospitals <sup>1</sup>	2009	2
State registered Long Term Acute Care (LTAC) hospitals <sup>1</sup>	2009	32
CMS certified long term hospitals <sup>2</sup>	2011	25
State registered Burn hospitals <sup>1</sup>	2009	1
Other type of hospitals <sup>1</sup>	2009	6

<sup>1</sup> Data are taken from the Annual Hospital Registration system for calendar year 2009.

<sup>2</sup> Data are taken from the CMS certification system and are updated daily.

<sup>3</sup> The 34 CAH receive 101% Medicare cost based reimbursement. Eleven CAHs are located in Appalachian areas. Ohio began designating CAHs in 2001 and designated the last CAH in December 2005 (due to the change in the necessary provider criteria rule). All of Ohio CAHs were designated with the necessary provider criteria. Each CAH must meet at least one of the following criteria:

- Hospital is located in a Health Professional Shortage Area (HPSA), or a Medically Underserved Area (MUA).
- Hospital is in a county where the percent of families with incomes less than 100% of the federal poverty level is higher than the state for families with incomes less than 100%.
- Hospital is located in a county with an unemployment rate that exceeds the state overall unemployment rate.
- Hospital is located in a county where the percentage of the population age 65 or older exceeds the state average.
- Hospital is located in a community that lacks 24 hour public transportation to the nearest hospital.

**Table 9.6 Hospital type by bed type – Ohio, 2009**

Child and Adolescent Health Indicators	Ohio Number	Child and Adolescent Health Indicators	Ohio Number
State registered general medical/surgical	178	State registered physical rehab	4
Adult medical/surgical	25,786	Adult medical/surgical	40
Adult special care (ICU/CCU)	3,544	Alcohol/chemical dependency	29
Alcohol/chemical dependency	335	Long term care	22
Burn	42	Physical rehabilitation	218
Hospice	30	<b>State registered alcohol/drug abuse</b>	<b>2</b>
Long term care	1,198	Adult medical/surgical	8
Neonatal – level 1	2,645	Alcohol/chemical dependency	155
Neonatal – level 2	397	<b>State registered long term acute care (LTAC)</b>	<b>32</b>
Neonatal – level 3	537	Adult medical/surgical	54
Obstetrics – level 1	896	Adult special care (ICU/CCU)	6
Obstetrics – level 2	911	Long term care	418
Obstetrics – level 3	764	LTAC–LTA less than 30 days stay	1,357
Pediatric medical/surgical	1,309	Physical rehabilitation	116
Pediatric special care	82	State registered burn	1
Physical rehabilitation	1,456	Burn	30
Psychiatric	2,538	Other	6
Special skilled nursing	176	Adult medical/surgical	181
<b>State registered children's</b>	<b>6</b>	Physical rehabilitation	52
Burn	25		
Long term care	22		
Neonatal – level 2	18		
Neonatal – level 3	260		
Pediatric medical/surgical	766		
Pediatric special care	117		
Physical rehabilitation	34		
Psychiatric	36		
State registered psychiatric	10		
Alcohol/chemical dependency	41		
Psychiatric	497		

<sup>1</sup> Data are taken from the Annual Hospital Registration system for calendar year 2009.

**\*\***Cuyahoga and Franklin counties account for 17% of all Ohio hospitals. Cuyahoga county has the largest number of hospitals at 23. Seven percent of all Ohio counties (Cuyahoga, Franklin, Hamilton, Lucas, Montgomery, and Summit) account for 38% of all Ohio hospitals. Nine Ohio counties (Carroll, Meigs, Monroe, Morgan, Noble, Perry, Preble, Putnam, and Vinton) do not have any hospitals.

## ■ ■ ■ Immunizations

Childhood immunization rates are often used as an indirect measure of health care access for children. To monitor rates, the CDC conducts the National Immunization Survey (NIS) on an ongoing basis. The NIS provides immunization rates for the United States, as well as CDC-funded project areas such as Ohio. At this time, the most commonly used measure of infant immunization rates is the 4:3:1:3:3:1 series (4 diphtheria, tetanus, and pertussis; 3 polio; 1 measles, mumps, and rubella; 3 haemophilus influenzae type b; 3 hepatitis B; 1 varicella), typically completed between 19 and 35 months of age. Ohio's rates have been consistently above the national average for several years and in 2009, the Ohio average for successful completion of the 4:3:1:3:3:1 series was 73.8% compared to the U.S. average of 69.9% (Table 9.7).

**Table 9.7 Vaccination coverage rates\* among children aged 19–35 months by poverty level† – Ohio and United States, 2009‡**

	Total		Federal Poverty Level			
			Below		At or Above	
	Ohio	United States	Ohio	United States	Ohio	United States
<b>Vaccines</b>						
DTP or DTaP > 3 doses	94.6%	95.0%	–	94.1%	–	95.6%
DTP or DTaP > 4 doses	83.3%	83.9%	83.6%	80.1%	84.0%	85.7%
Polio	92.6%	92.8%	93.1%	92.0%	93.2%	93.3%
MMR > 1 doses	89.4%	90.0%	89.0%	88.8%	89.7%	90.6%
Hib > 3 doses	–	83.6%	92.1%	82.0%	91.5%	84.3%
Hepatitis B** > 3 doses	91.5%	92.4%	87.8%	92.3%	93.8%	92.7%
Varicella (Chicken-pox) > 1 dose	87.1%	89.6%	89.8%	89.0%	87.5%	90.2%
PCV7 > 4 doses	82.1%	80.4%	–	74.8%	85.0%	83.2%
4:3:1:3	76.7%	–	–	–	–	–
4:3:1:3:3	75.4%	–	–	–	–	–
4:3:1:3:3:1	73.8%	69.9%	–	68.4%	–	70.4%
4:3:1:3:3:1:4	–	63.6%	–	60.7%	–	64.8%

**Abbreviations:** DTP/DTaP = diphtheria, tetanus toxoids, and pertussis vaccines, diphtheria, tetanus toxoids, and acellular pertussis vaccine; Hib = Haemophilus influenzae type b vaccine; MMR = measles, mumps, and rubella vaccine; PCV = pneumococcal conjugate vaccine.

\* Coverage rates based on a 95% Confidence Interval.

\*\* Hepatitis B vaccine administered between birth and age 3 days.

† Poverty level was determined for all children. Children were classified as below poverty if their total family income was less than the poverty threshold specified for the applicable family size, and number of children aged <18 years. All others were classified as at or above poverty. Poverty thresholds reflect yearly changes in the CPI. Thresholds and guidelines available at <http://www.census.gov/hhes/www/poverty.html>

‡ Children in the 2009 National Immunization Survey were born during January 2006–July 2008.

4:3:1:3 Series, referred to as routine, includes >4 doses of DTP/DT/Dtap, > 3 doses of poliovirus vaccine, >1 doses of measles-containing vaccine, and >3 doses of Hib vaccine.

4:3:1:3:3 Series, referred to as routine, includes >4 doses of DTP/DT/Dtap, > 3 doses of poliovirus vaccine, >1 doses of measles-containing vaccine, >3 doses of Hib vaccine, and >3 doses of hepatitis B vaccine.

4:3:1:3:3:1:4 Series, referred to as routine, includes >4 doses of DTP/DT/Dtap, > 3 doses of poliovirus vaccine, >1 doses of measles-containing vaccine, >3 doses of Hib vaccine, >3 doses of hepatitis B vaccine, >1 doses of varicella vaccine, and >4 doses of PCV.

– Not available.

**Table 9.8 Vaccination coverage rates\* among adolescents aged 13–17 years by poverty level<sup>†</sup> – Ohio and United States, 2009<sup>‡</sup>**

	Total		Federal Poverty Level			
	Ohio	United States	Below		At or Above	
Ohio			United States	Ohio	United States	
<b>Vaccines</b>						
<b>Adolescent catch-up vaccines</b>						
> 2 MMR	94.4%	89.1%	88.7%	87.8%	95.2%	89.3%
> 3 Hepatitis B**	91.1%	89.9%	87.0%	88.3%	91.4%	90.3%
>1 Varicella	82.9%	87.0%	–	82.9%	84.9%	87.6%
>2 Varicella	40.3%	48.6%	–	46.2%	40.8%	48.7%
<b>Routinely recommended for adolescents</b>						
> 1 Td or Tdap	67.7%	76.2%	64.0%	71.8%	67.7%	77.0%
> 1 Tdap	50.2%	55.6%	50.0%	52.8%	49.1%	56.1%
>1 MenACWY	53.7%	53.6%	52.9%	52.5%	52.4%	53.8%
>1 HPV***	40.6%	44.3%	–	51.9%	36.6%	42.5%

**Abbreviations:** Td or Tdap = Tetanus and diphtheria toxoids vaccine (Td); or tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap); or tetanus–unknown vaccine on or after age 10 years; MMR = measles, mumps, and rubella vaccine; MenACWY = Meningococcal conjugate vaccine or meningococcal–unknown type vaccine;

\*Coverage rates based on a 95% Confidence Interval.

\*\*Hepatitis B vaccine administered between birth and age 3 days.

\*\*\*Human papillomavirus vaccine, either quadrivalent or bivalent, among females.

<sup>†</sup>Adolescents were classified as below poverty level if their total family income was less than the federal poverty level specified for the applicable family size and number of children aged <18 years. All others were classified as at or above the poverty level. Additional information available at <http://www.census.gov/hhes/www/poverty.html>. Poverty status was unknown for 779 adolescents.

<sup>‡</sup>Adolescents in the 2009 NIS–Teen were born during January 1991–February 1997. National estimates do not include adolescents living in the United States Virgin Islands (i.e., St. Croix, St. Thomas, St. John, and Water Island).

– Not available

## Dental Care

Ensuring access to dental care is a critical part of improving and maintaining the oral health of Ohioans. Overall, the statewide dentist to population ratio is 1:1,654, with six counties having a county-level ratio of at least 1:7,000 (Monroe – 1:7,029, Morgan – 1:7,144, Hocking – 1:7,228, Meigs – 1:7,613, Harrison – 1:7,634, Preble – 1:8,284, and Morrow – 1:8,661), and one county having no licensed dentists (Noble).

Regionally, the ratio of dentists to people for Appalachian and rural, non-Appalachian counties (1:3,138 and 1:2,701 respectively) is greater than suburban and metropolitan counties (1:2,140 and 1:1,544 respectively). This disparity is greater yet when specialty dentists are excluded, leaving even suburban counties with

disproportionately fewer general and pediatric dentists than metropolitan counties. The ratio of only primary care dentists to people for Appalachian, rural non-Appalachian, and suburban counties (1:3,655, 1:3,341, and 1:2,667, respectively) is one and a half to two times the ratio for metropolitan counties (1:1,879).

Four counties with high ratios also do not have dental safety-net clinics that offer comprehensive dental care (Monroe, Morgan, Hocking, and Preble counties). In fact, 68% of all safety-net dental clinics are located in metropolitan counties, whereas only 16% are located in Appalachian counties, and 12% are located in rural, non-Appalachian counties.

**Table 9.9 Oral health workforce and capacity – Ohio, 2010–2011**

Child and Adolescent Health Indicators	Year	Ohio Number
Dentists licensed in Ohio <sup>1</sup>	2010	6,979
Dentists licensed in Ohio not practicing in Ohio <sup>2</sup>	2010	801
Dentists licensed in Ohio practicing in Ohio <sup>2</sup>	2010	6,178
Primary care dentists licensed in Ohio <sup>3</sup>	2010	5,094
Primary care dentists licensed in Ohio not practicing in Ohio <sup>2,3</sup>	2010	455
Primary care dentists licensed in Ohio practicing in Ohio <sup>2,3</sup>	2010	4,639
Safety-net dental clinics operating in Ohio <sup>4</sup>	2011	128
Dental hygiene schools <sup>5</sup>	2011	12
Dental schools	2011	9
FQHCs	2011	41
FQHC look-alikes	2011	4
Hospitals	2011	22
Local health departments	2011	12
Other (non-profits, faith-based, etc)	2011	26
School districts	2011	2
Clinics open full-time <sup>6</sup>	2011	77
Clinics open part-time <sup>7</sup>	2011	19
Clinics open limited hours <sup>8</sup>	2011	19
Clinics not open year round <sup>9</sup>	2011	13

<sup>1</sup>Data collected by the Ohio State Dental Board for the 2-year licensing period beginning in 2010.

<sup>2</sup>Data based upon the address in which the dentist registered with the Ohio State Dental Board. Dentists are instructed by the Ohio State Dental Board to register with the address of their practice, but ODH had found that not all dentists follow these instructions.

<sup>3</sup>Primary care dentists are defined as dentists who identify as general practice or pedodontics when applying for licensure. Specialty dentists such as oral surgeons, endodontists, orthodontists, prosthodontists, periodontists, and other specialties are not considering primary care dentists. Due to missing data in this data field, the Ohio Department of Health contacted dentists with no specialty listed in 2010 and coded them according to their self-identification.

<sup>4</sup>Data collected by the Ohio Department of Health. An up-to-date list of dental clinics can be found on the Ohio Dental Clinics website, [www.ohiodentalclinics.com](http://www.ohiodentalclinics.com).

<sup>5</sup>Dental hygiene school clinics only offer preventative services and do not provide comprehensive care to their patients.

<sup>6</sup>Full-time dental clinics are open to patients for more than 32 hours per week.

<sup>7</sup>Part-time dental clinics are open to patients 8 through 32 hours per week.

<sup>8</sup>Limited hours dental clinics are open to patients less than 8 hours per week.

<sup>9</sup>Clinics not open year round are open to patients only part of the calendar year. These clinics are mostly hygiene schools or school-based clinics that are only open to patients during the academic year.

# ENVIRONMENTAL HEALTH



## ENVIRONMENTAL HEALTH

Environmental public health indicators can be used to assess health status or risk as it relates to the environment. Although certain diseases have clear environmental etiologies, the effects of many environmental exposures are not defined as clearly. Indicators are selected based on an ability to measure hazard (potential for exposure to contaminant or hazardous condition), exposure (biological marker that identifies exposure to a potential hazard), effect on health (health-related results arising from the environmental exposure), or intervention (ability to prevent or minimize the hazard, exposure, or health effect). Measures selected for evaluation in this report included: key indicators as chosen by other agencies (i.e., the Council of State and Territorial Epidemiologists, the CDC and the World Health Organization) and additional data available in Ohio.

**Table 10.1 Selected environmental health indicators – Ohio, 2008–2010**

Environmental Health Indicator	Year	Ohio Number
<b>Outside Air</b>		
<b>Days exceeded national ambient air quality</b>		
• Sulfur dioxide <sup>1</sup>	2009	118
• Carbon monoxide <sup>1</sup>		0
• Nitrogen dioxide <sup>1</sup>		0
• Ozone <sup>1</sup>		23
• Particulate matter (10 μ) <sup>1</sup>		1
• Particulate matter (2.5 μ) <sup>1</sup>		3
<b>Number of days air quality index exceeded 100<sup>1</sup></b>		
<b>Toxic release inventory<sup>2</sup></b>		
• Pounds of hazardous chemicals released to air annually	2009	74.6
• Pounds of chemicals released annually to air, water, and land <sup>3</sup>		1,58.5
<b>Hospital discharge rate per 10,000 for primary diagnosis of asthma<sup>3</sup></b>		
• All	2009	16.9
• Age 0–4 years		30.1
• Age 5–17 years		12.1
<b>Food Safety</b>		
Reported outbreaks associated with food <sup>4</sup>	2009	56

Table continued on page 82

**Table 10.1 Selected environmental health indicators – Ohio, 2008–2010 (contd.)**

Environmental Health Indicator	Year	Ohio Number
<b>Water</b>		
Private water wells that test E Coli positive <sup>5</sup>	2009	9.2%
Private water systems constructed not in compliance with state standards <sup>5</sup>	2009	1%
Community systems meeting safe drinking water act <sup>6</sup>	2009	2%
<b>Recreational Water</b>		
% of recreational waters impacted by harmful algal blooms (HABs) <sup>7</sup>	2009	9.2%
% of recreational waters where a recreational waterborne illness is implicated <sup>7</sup>	2009	2%
<b>% of assessed large rivers &amp; watersheds meeting aquatic life, human health &amp; recreational water quality standards<sup>8</sup></b>		
• Aquatic life	2010	35%
• Human health		25 – 33%
• Recreational water quality standards		44% of Class A
<b>Healthy indoor environments</b>		
% of children with elevated blood lead levels <sup>10</sup>	2009	4%
Adults exposed to second hand smoke at home within past 7 days <sup>11</sup>	2008	17.0%
Middle school students exposed to second hand smoke in car or in a room	2008	52.5%
High school students exposed to second hand smoke in car or in a room	2008	65.2%
<b>Environmental public health workforce</b>		
CEU approved training opportunities offered annually	2009	328 CE414 applications reviewed

<sup>1</sup>Ohio Environmental Protection Agency (EPA); Division of Air Pollution Control; National ambient air quality standards attainment status.

<sup>2</sup>U.S. EPA; Toxic Release Inventory Data.

<sup>3</sup>Ohio Hospital Association.

<sup>4</sup>Ohio Department of Health, Bureau of Infectious Disease Outbreak Response and Bioterrorism Investigation Team.

<sup>5</sup>Surveys of Household Sewage Treatment Systems Operation & Failure Rates.

<sup>6</sup>Ohio EPA Divisions of Drinking & Ground Waters.

<sup>7</sup>Ohio Department of Health, Outbreak Response and Bioterrorism Investigation Team.

<sup>8</sup>Ohio EPA, Final 2010 Integrated Water Quality Monitoring and Assessment Report.

<sup>9</sup>U.S. EPA defines Class A waters as waters frequently used for recreational activity (Class B=occasional, Class C=infrequent). Examples of recreational activities in this context are swimming, boating, water skiing and canoeing.

<sup>10</sup>Ohio Department of Health, Childhood Lead Poisoning Prevention Program.

<sup>11</sup>Ohio Behavioral Risk Factor Surveillance System/Adult Tobacco Survey, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health, 2008.

<sup>12</sup>Ohio Youth Tobacco Survey, Tobacco Use Prevention and Cessation Program, Office of Healthy Ohio, Ohio Department of Health, 2009

<sup>13</sup>Ohio Board of Sanitarian Registration, 2011.

<sup>14</sup>Under Environmental Public Health Workforce, CE4 Applications are "Training Agency Applications for Approval of a Course," i.e., courses available for continuing education.



**Figure 10.2 United States EPA Toxic Release Inventory – Ohio, 2009**

Releases to Air for 2009*		Ohio	Top 10 Chemicals*		Ohio
County		Pounds	Chemical Name		Pounds
		10,201,234	1	Hydrochloric acid (aerosols)	34,037,167
2	Washington	10,045,263	2	Sulfuric acid (aerosols)	11,292,499
3	Ashtabula	6,171,769	3	Ammonia	7,645,710
4	Clermont	5,756,582	4	Carbonyl sulfide	5,991,289
5	Adams	5,251,431	5	Hydrogen fluoride	3,362,334
6	Gallia	3,950,119	6	Certain glyco ethers	1,627,770
7	Allen	3,839,402	7	Methanol	1,511,011
8	Hamilton	3,562,371	8	1-chloro-1, 1-difluoroethane	1,094,990
9	Lake	3,304,563	9	N-Hexane	1,077,115
10	Lorain	2,527,906	10	N-Butyl alcohol	1,074,257

Top 10 Facilities		Ohio
Facility / County		Pounds
1	American Electric Power - Muskingum River / Washington	7,421,385
2	First Energy W.H. Sammis Plant / Jefferson	5,892,136
3	DP & L J.M. Stuart Station / Adams	4,566,123
4	American Electric Power Cardinal Plant / Jefferson	4,291,005
5	Duke Energy, Beckjord Generating Station / Clermont	4,262,008
6	Millennium Inorganic Chemicals Plant 2 / Ashtabula	4,027,245
7	PCS Nitrogen of Ohio L.P. / Allen	3,192,214
8	FirstEnergy Eastlake Plant / Lake	3,008,604
9	Duke Energy Corp Miami Fort Generating Station / Hamilton	2,802,811
10	Ohio Valley Electric Corp. Kyger Creek Station	2,790,304

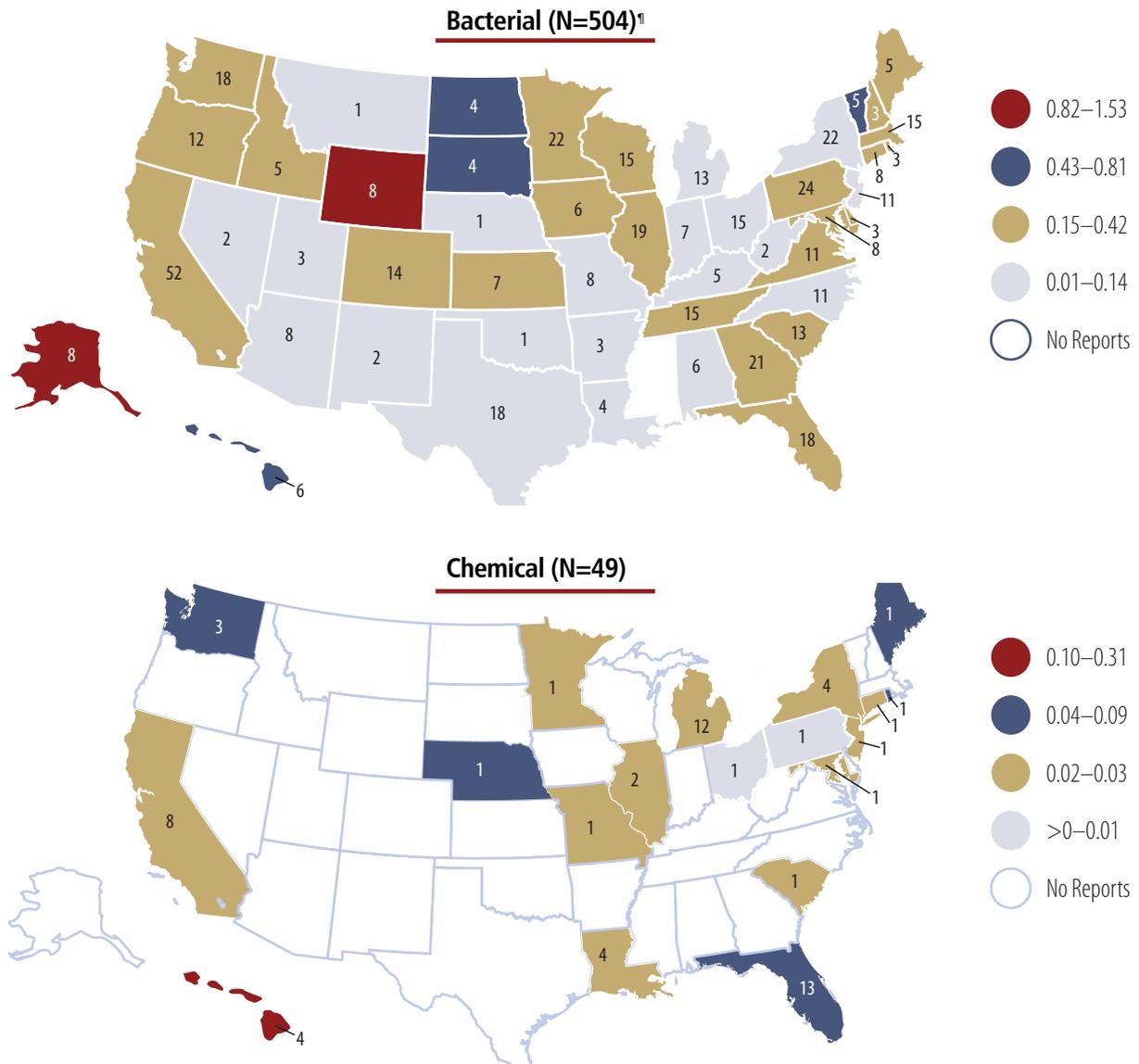
Source: Ohio Environmental Protection Agency Toxic Release Inventory, 2009.

\* All data included

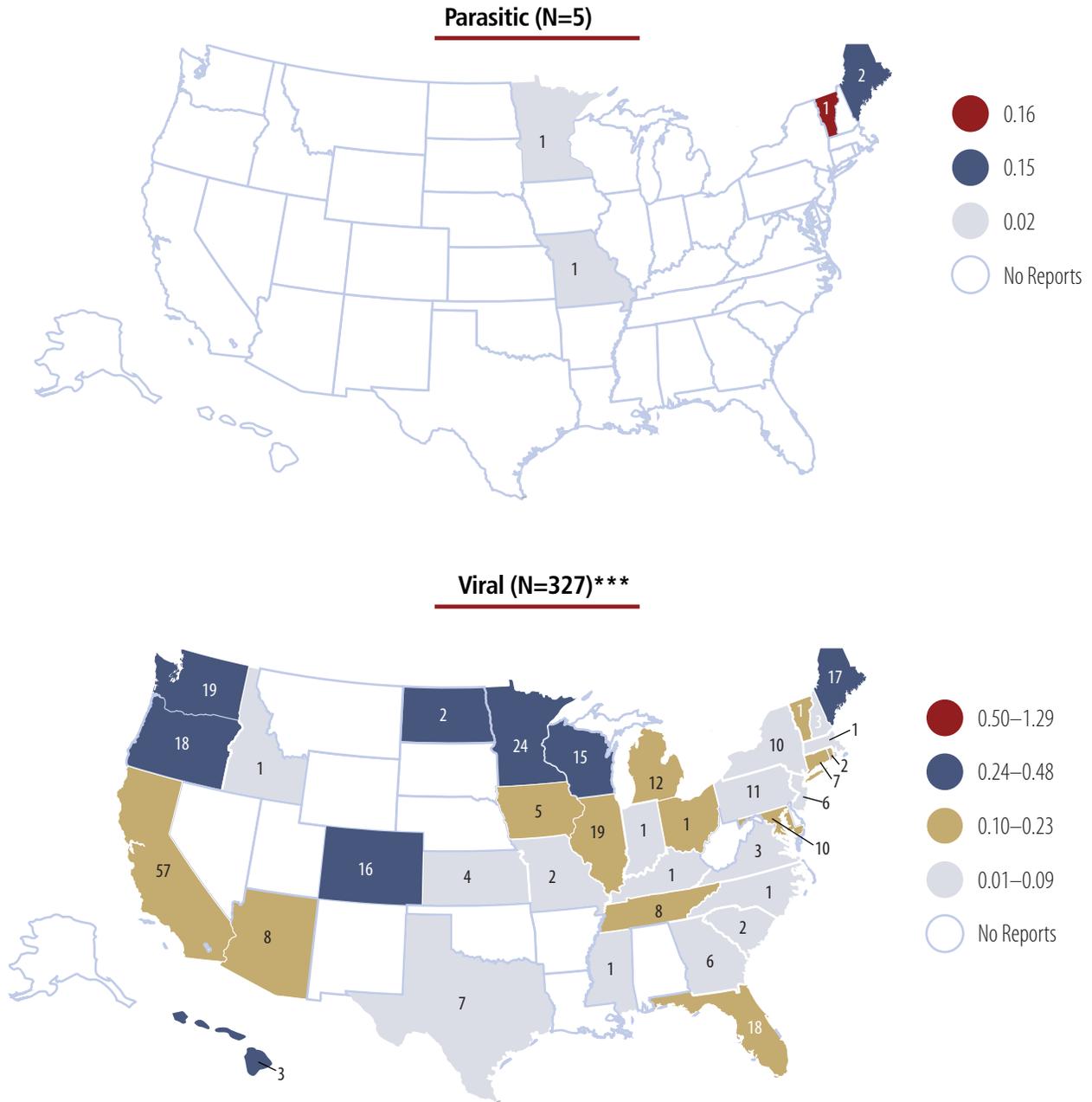
**Food Safety**

Foodborne illness outbreak surveillance provides insights into the causes of foodborne illness, types of implicated foods, and settings of foodborne infections that can be used in food-safety strategies to prevent and control foodborne disease. CDC collects data on foodborne disease outbreaks submitted from all states and territories, but only publishes these data intermittently. These outbreaks can be attributed to several etiologies (e.g., bacterial, parasitic, viral, and chemical). In 2009, approximately 1,000 Ohio residents were reported to have become ill as the result of contaminated food, although this figure is often an underestimate of true incidence, given the likelihood that many cases go unreported. In 2009, Ohio experienced 56 foodborne disease outbreaks, a decrease from 92 in 2008 (Figure 10.3).

**Figure 10.3. Rate\* of reported food borne disease outbreaks and number of outbreaks<sup>†</sup> by state and major etiology groups<sup>‡</sup> – United States, 2007 \*\*\***



**Figure 10.3. Rate\* of reported food borne disease outbreaks and number of outbreaks<sup>†</sup> by state and major etiology groups<sup>§</sup> – United States, 2007 \*\*\***



Per 100,000 standard population. Cutpoints for outbreak rate categories determined using Jenks Natural Breaks Optimization in ArcGIS.

<sup>†</sup> Number of reported outbreaks in each state.

<sup>§</sup> Analysis restricted to outbreaks attributed to a single confirmed or suspected etiology. Note that legend differs for each etiology.

<sup>\*</sup> Includes 17 multistate outbreaks, which are assigned as an outbreak to each state involved. An outbreak in Puerto Rico is not shown.

<sup>\*\*</sup> Includes one multistate outbreak, which is assigned as an outbreak to each state involved

<sup>\*\*\*</sup> Source: Surveillance for Food borne Disease Outbreaks – U.S. 2007, MMWR, August 13, 2010 / 59(31); 973-979.

### ■ ■ ■ Recreational Water

Harmful algal bloom (HAB) events regularly threaten human health and marine life, contaminate local fish and shellfish, and depress coastal tourist and recreational industries. HAB events can produce harmful toxins and create large dense “blooms” of algal cells and are most likely caused by a combination of both natural events and human activities. While many blooms are visible, others can threaten health even when they are not visible in the water. Nearly 10% of recreational waters were impacted by HAB events in 2009 (Table 10.1).

### ■ ■ ■ Sewage and Surface Water Quality

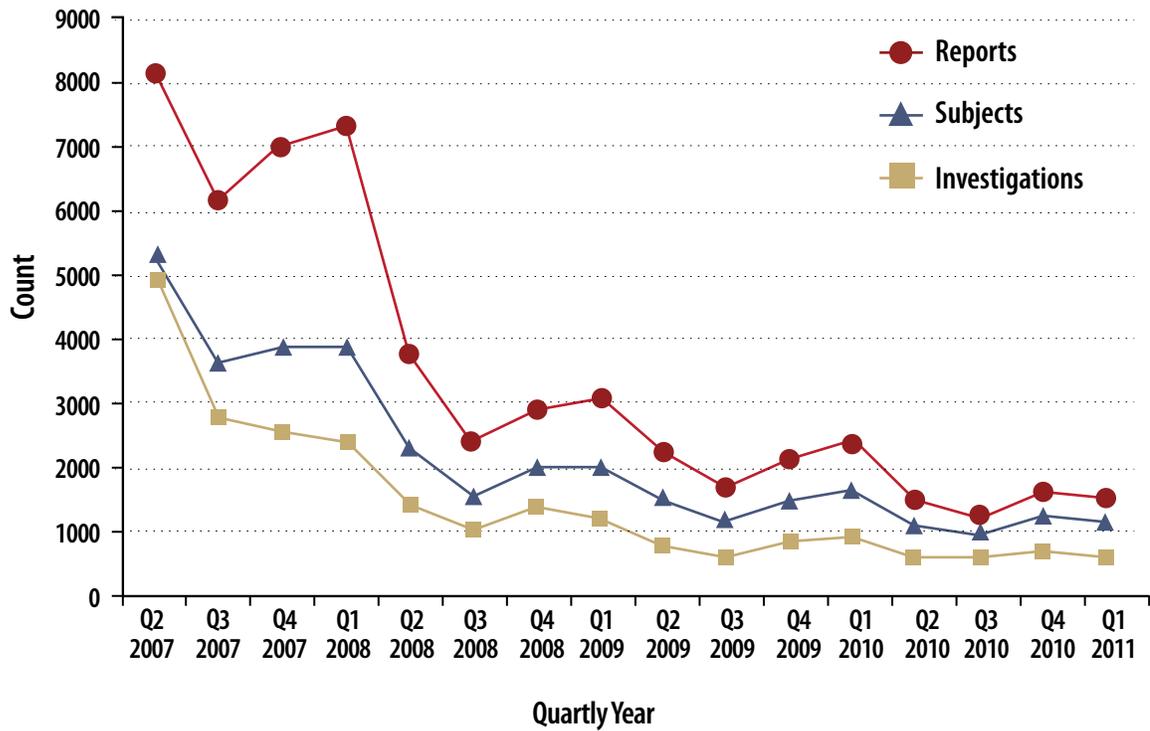
The Ohio EPA completes the annual Ohio Integrated Water Quality Monitoring and Assessment Report, which assesses the status of attaining quality standards of Ohio’s waters for aquatic life, human health (fish tissue), and recreational contact. From 2008 to 2010, aquatic life attainment for large river segments increased from 79% to 93% of segments assessed. Watershed units indicated an increase in attainment from 55% to 58%. Recreational use attainment, however, declined from 38% of the total 354 units assessed, to 13% of the total 1,576 units assessed. Human health attainment also declined from 87% of watersheds recording impairment (of the 31% assessed) in 2010 to 63% of watersheds documenting impairment (of the 47% assessed) in 2009.

A 2008 survey of the operation and failure rates of sewage treatment systems in Ohio was conducted by ODH. The survey collected information on the current number and types of existing and failing systems, the projected number of failing systems during the next 5 years, and the primary reasons identified for system failure. This information was reported in the Survey of Household Sewage Treatment Systems Operation and Failure Rates in Ohio, published by ODH. The survey reported that 23% of the sewage systems in existence are currently failing, and that 13% are projected to fail within the next 5 years. Local health districts also report quarterly data on the installation, replacement, and alteration of sewage treatment systems through permit data to ODH. In 2009, this data revealed a similar percentage of system replacements and alterations (21% and 13% respectively).

### ■ ■ ■ Healthy Indoor Environments

Smoking and smoke exposure represent one of the most important public health threats and one of the leading factors causing preventable death. In 2006, Ohio adopted a comprehensive law to protect employees and the public from secondhand tobacco smoke. The Ohio Smoke Free Workplace law is being actively enforced in all areas of Ohio, and a dramatic decrease in the number of reports of violations and in the number of investigations conducted since the inception of the law indicates increasing compliance (Figure 10.4).

**Figure 10.4** Reported smoke-free workplace law violations and investigations – Ohio, 2007–2011



\*Source: Smoke Free Workplace Program Web-Based Application, Ohio Department of health, 2011

Additionally, the Ohio Adult Tobacco Survey indicated that in 2008 17% of adults had been exposed to secondhand tobacco smoke in their homes during the past 7 days. More than 50% (52.5%) of middle school students and 65.2% of high school students reported being in a car or in the same room with someone who was smoking on one or more days in the week preceding the survey.<sup>20</sup>

<sup>20</sup> Surveillance of Tobacco Use Among Ohio Adults, 2008, Tobacco Surveillance, Chronic Disease and Behavioral Epidemiology, Center for Public Health Statistics and Informatics, Ohio Department of Health

# ECONOMIC IMPACT

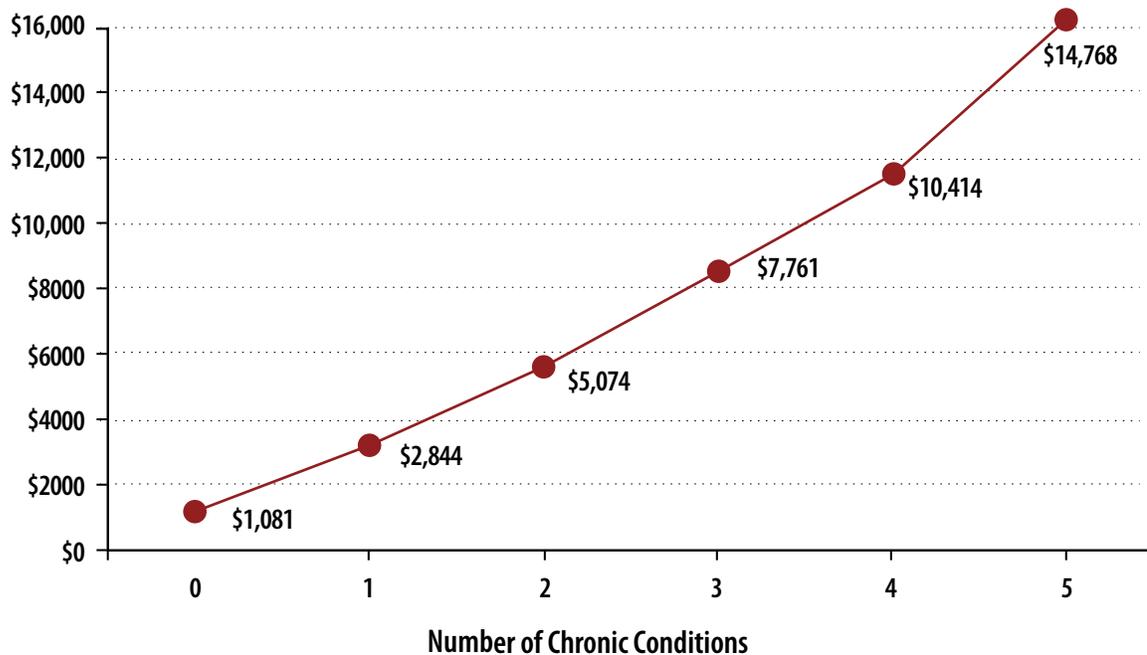


## ECONOMIC IMPACT

The data presented in this report document the burden of disease and disability on the citizens of Ohio – data critical for the maintenance of an engaged, responsive, and effective public health system. However, this burden affects all Ohioans, from state and local government agencies to private industry; from small, rural towns to large cities, as the cost of providing health care to Ohioans, and the nation, has become unsustainable. Given the immense task of controlling these costs, local and state decision makers are looking to not only reform how health care is delivered but also how to maximize the efforts of public health to prevent disease and disability from occurring in the first place and to improve the health of the most at-risk segments of the population.

A key factor in the rising costs of health care is the cost of chronic disease. Health care spending for someone with a single chronic condition is nearly three times that for someone without any chronic conditions and approximately 14 times greater for someone with five or more chronic conditions (Figure 11.1). In fact, as of 2010, 85 cents of every health care dollar is spent on people with chronic conditions. Yet, these costs are not being borne by the health care system alone, as the average annual out-of-pocket spending for someone with one or more chronic disease has increased nearly 30 percent over the last decade.<sup>1</sup>

**Figure 11.1** Average per capita yearly health care spending per number of chronic conditions – United States, 2006<sup>1</sup>



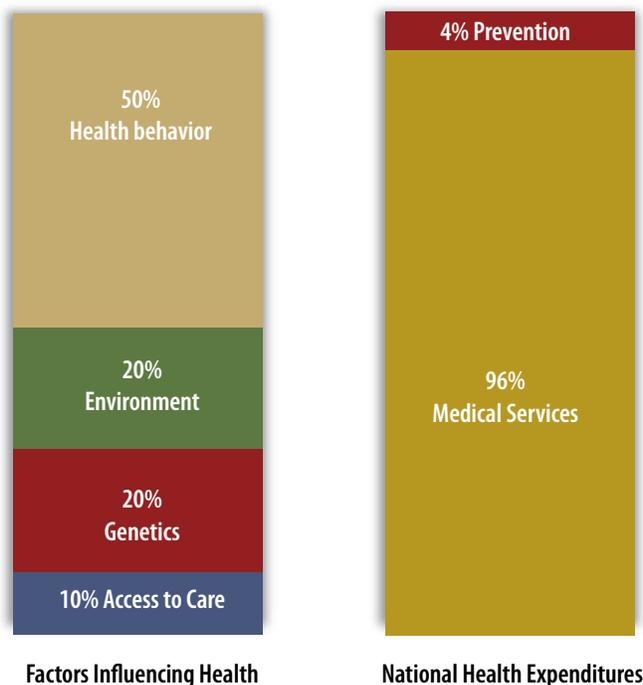
<sup>1</sup>Chronic Care: Making the Case for Ongoing Care. Robert Wood Johnson Foundation, February 2010. Last accessed 10/28/11 at <http://www.rwjf.org/files/research/50968chronic.care.chartbook.pdf>. Source: Medical Expenditure Panel Survey, Agency for Healthcare Research and Quality, August 2006.

<sup>20</sup> Chronic Care: Making the Case for Ongoing Care. Robert Wood Johnson Foundation, February 2010. Last accessed 10/28/11 at <http://www.rwjf.org/files/research/50968chronic.care.chartbook.pdf>.

In Ohio in 2004, health care expenses per capita and the average among persons with an expense were estimated to be \$4,093 and \$4,577 per year, respectively—among the highest in the nation.<sup>22</sup> While there are many reasons for these ballooning costs (e.g. lack of coordinated health care services, inappropriate ED use), much of the cost is related to the higher costs of treatment versus prevention. For example, in 2005 fatal drug poisonings cost Ohioans \$3.6 billion annually, while non-fatal, hospital-admitted drug poisonings cost an additional \$35.5 million.<sup>23</sup> Improvements in prescriber practices and increased education around opioid use could dramatically reduce both narcotic use and health system costs.<sup>24</sup>

Yet the power of prevention is most evident when looking at chronic disease. In 2003, the economic impact of chronic diseases in Ohio was estimated at nearly \$57 billion, of which slightly more than \$40 billion was estimated to be due to lost workdays and poor workplace productivity.<sup>25</sup> Many of these diseases are largely due to preventable causes (poor nutrition, lack of physical activity, and tobacco and alcohol use) and therefore have the most potential for cost reduction. These health behaviors are highly dependent on factors at the individual, community, organizational, and system levels. In fact, it is estimated that approximately 60% of the causes of disease are related to these behavioral and environmental influences; however, only about 4% of health care expenditures go to prevention efforts, such as improving opportunities for people to lead healthy lifestyles<sup>26</sup> (Figure 11.2), and as Table 11.1 shows, Ohio could save substantially by investing in proven prevention programs.<sup>27</sup>

**Figure 11.2 Discrepancy between health determinants and spending – United States\***



\*Adapted from Cohen, L., Davis, L., Cantor, R., et al., Reducing Health Care Costs Through Prevention. Prevention Institute, the California Endowment, and the Urban Institute; August 2007; Data from: Lambrew JM., A Wellness Trust to Prioritize Disease Prevention, The Hamilton Project, Brookings Institution, 2007. Discussion paper 2007-04: 1-36, University of California at San Francisco, Institute of the Future, 2000.

<sup>22</sup>Rohde, F., Estimates of Health Care Expenditures for the 10 Largest States, 2006; Statistical Brief #264; Agency for Healthcare Research and Quality, September 2009

<sup>23</sup>Children’s Safety Network Economics & Data Analysis Resource Center, at Pacific Institute for Research and Evaluation, 2005

<sup>24</sup>Unintentional Drug Poisoning in the United States, Centers for Disease Control and Prevention, July 2010. Last accessed on 10/31/2011 at [http://www.cdc.gov/HomeandRecreationalSafety/Poisoning/brief\\_full\\_page.htm](http://www.cdc.gov/HomeandRecreationalSafety/Poisoning/brief_full_page.htm)

<sup>25</sup>DeVol, R., Bedroussian, A., et al., An Unhealthy America: The Economic Burden of Chronic Disease, Milken Institute, October 2007

<sup>26</sup>Cohen, L., Davis, L., Cantor, R., et al., Reducing Health Care Costs Through Prevention. Prevention Institute, the California Endowment, and the Urban Institute; August, 2007. Last accessed at [http://www.preventioninstitute.org/index.php?option=com\\_jlibrary&view=article&id=79&Itemid=127](http://www.preventioninstitute.org/index.php?option=com_jlibrary&view=article&id=79&Itemid=127) on October 31, 2011

<sup>27</sup>Prevention for a Healthier America: Investments in Disease Prevention Yield Significant Savings, Strong Communities, July 2008. Trust for America’s Health.

**Table 11.1 Return on investment (ROI) of \$10 per person for disease prevention interventions<sup>1</sup> – Ohio, 2008**

<b>Total Annual Intervention Costs (at \$10 per person):</b>		<b>\$114,610,000</b>	
<b>Ohio ROI of \$10 per person</b>			
	<b>1 – 2 Years</b>	<b>5 Years</b>	<b>10 – 20 Years</b>
Total state savings	\$237,700,000	\$800,500,000	\$878,900,000
State net savings (Net savings = Total savings minus intervention costs)	\$123,000,000	\$685,900,000	\$764,300,000
ROI for state	1.07:1	5.99:1	6.67:1

**Indicative estimates of Ohio savings by payer: proportion of net savings for investment of \$10 per person**

	1 – 2 Years	5 Years	10 – 20 Years
Medicare net savings	\$33,200,000	\$185,200,000	\$206,300,000
Medicaid net savings (federal share)	\$7,150,000	\$39,800,000	\$44,400,000
Medicaid net savings (state share)	\$4,780,000	\$26,600,000	\$29,700,000
Private payer & out-of-pocket net savings	\$77,900,000	\$434,200,000	\$483,800,000

<sup>1</sup>Net Savings in 2004 dollars

\*Source: Trust For Americas Health calculations from preliminary Urban Institute estimates, based on national parameters applied to state spending data.

<sup>28</sup>PPSI Director Richard Spoth presents at The United Nations Office on Drugs and Crime: Technical Seminar on Drug Addiction Prevention and Treatment: From Research to Practice December 16, 2008; last accessed on 10/31/11 at <http://www.ppsi.iastate.edu/press/vienna.htm>

<sup>29</sup>Weintraub, W.S., Daniels, S.R., Burke, L.E., et al., Value of Primordial and Primary Prevention for Cardiovascular Disease: A Policy Statement from the American Heart Association, *Circulation*, July, 25 2011, 124:967-990

<sup>30</sup>Prevention for a Healthier America: Investments in Disease Prevention Yield Significant Savings, Stronger Communities. Washington, DC: Trust for America's Health; 2008.

---

**Specific examples of potential cost-savings through prevention include the following:**

- Substance abuse prevention programs have nearly a \$10 return for every \$1 invested.<sup>28</sup>
  - Comprehensive worksite wellness programs can reduce medical costs by approximately \$3.27 for every \$1 spent, while costs due to lost days at work can drop by \$2.73 for every \$1 spent.<sup>29</sup>
  - Community-based chronic disease prevention efforts can offer as much as a 6 to 1 return on investment within 5 years,<sup>30</sup> meaning that an investment of \$10 per person per year in evidence-based interventions aimed at increasing opportunities for communities to be physically active, eat healthy foods, and reduce the use and exposure to tobacco can save Ohio more than \$685 million annually, including \$185 million from Medicaid, by 2017.
- 

It is important to remember, that while disease screening, treatment, and management efforts are crucial to improving both outcomes and overall quality of life, they are most effective for those people at high risk for developing disease and disease complications. Prevention efforts stand to impact health across populations to a greater degree than nearly any other type of intervention. High-value screening programs; well-coordinated, efficient and effective health care; and community-based prevention efforts to improve opportunities for health together have the most potential to substantially improve population health across Ohio and can maximize Ohio's ability to bend the health care cost-curve.





[www.odh.ohio.gov](http://www.odh.ohio.gov)

Ohio Department of Health, 246 N. High St., Columbus, Ohio 43215