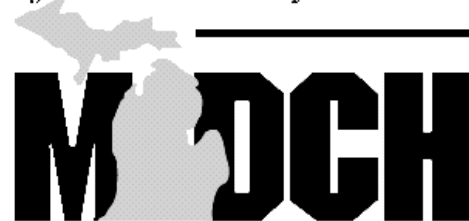




Michigan's Health Profile Chartbook

2011

*Michigan Department
of Community Health*



Rick Snyder, Governor
Olga Dazzo, Director

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STATE HEALTH PROFILE

Michigan’s Health Profile Chartbook 2011 is a compilation of health-related information about Michigan. The data in this profile reflects the health of Michigan residents from many different angles and highlights 46 indicators selected to describe health and wellbeing. The profile recognizes that a plethora of factors contribute to the populations’ health. Factors such as age, gender, race, ethnic origin, education, unemployment, poverty, access to care, and others contribute to overall health and wellness.

PROFILE PURPOSE

The purpose of this profile is to provide a statewide health snapshot for use by state, local, and community partners in setting priorities to improve health status. Presented in chartbook form is a data framework to assist public health partners and stakeholders in focusing efforts to improve the public’s health. Included are state-level data and, where practical, regional data are provided in the regional health profile chartbooks. Development and use of “*Michigan’s Health Profile Chartbook 2011*” is an integral part of a state health assessment process that will inform, plan, and implement a state-wide public health agenda, including a state health improvement plan.

DEVELOPMENT

To serve as catalyst for discussion, provide a current description of health and wellbeing across the state, and serve as an impetus for action, “*Michigan’s Health Profile Chartbook 2011*,” was developed during June-July 2011 by the Michigan Department of Community Health in partnership with the Michigan Health & Hospital Association, MPRO-Michigan’s Quality Improvement Organization, and the Michigan Association for Local Public Health. To guide and inform development, an Advisory Group was established; the participants are listed in Appendix B. The Advisory Group, after reviewing indicators and datasets used by a variety of state and local public health departments, determined that core indicators, common to Mobilizing for Action through Planning and Partnerships (MAPP) and the 2010 Michigan Critical Health Indicators, would provide a starting basis for Chartbook development. Additional data elements were included to capture needs identified by the Advisory Group. The Chartbook was funded, in part, through a grant from the Centers for Disease Control and Prevention’s, National Public Health Improvement Initiative.

STATE HEALTH ASSESSMENT

As of this writing, in tandem with Chartbook development, the Michigan Department of Community Health and partners have begun a state health assessment and improvement process.

To engage a broad array of stakeholders, eight regional meetings with opportunities for public comment and multiple key informant interviews are being held across the state. The results from these meetings and interviews will be organized into reports and become important components of the state health profile and assessment process. Locations for the eight regional meetings align with Michigan's eight public health preparedness regions. Local health departments in each region are facilitating the regional meetings by serving as host sites. Recognizing that all entities within a public health system contribute to the health and wellbeing of the community or state, over 100 participants will attend each of the eight meetings. Participants will be community members and include public health agencies, healthcare providers, public safety agencies, human service and charity organizations, education and youth development organizations, recreation and arts related agencies, economic and philanthropic organizations, and environmental agencies.

Public comment periods and key informant interviews conducted during or adjacent to regional meetings will further contribute to the state health assessment. The purpose of the regional meetings is to gather and interpret information from multiple and diverse sources in order to develop an understanding of the health priorities of communities across the state. It is a collaborative process that aims to advance community and organizational efforts to assess health needs and use results to develop strategies to improve health status — locally and state-wide.

CHARTBOOK ORIENTATION

The state-wide Chartbook contains 46 health indicators that begin to provide a health picture of Michigan from various perspectives. Each chart contains an indicator overview, a Healthy People 2020 Target (where available) and data source. Data sources for indicator overviews are located in Appendix A. Regional data are also provided for many indicators via regional health profile chartbooks.

Individual charts may refer to incidence, prevalence, or mortality, which are presented as rates; typically the number of events per 1,000, 10,000, or 100,000 population. A brief description of each follows.

Incidence refers to the frequency of development of a new illness in a population in a certain period of time, typically one year. When we say the incidence of a particular form of cancer has increased in past years, we mean that more people have developed this condition year after year (example: the incidence of thyroid cancer has been rising, with 45,000 new cases diagnosed during 2010 in the U.S.).

Prevalence refers to the current number of people living with an illness in a given year. This number includes all those who may have been diagnosed in prior years, as well as in the current year. (Example: A 20,000/year incidence of cancer with a prevalence of 80,000 means that there were 20,000 new cases diagnosed, and there are 80,000 people living in a specified area with this illness, 60,000 of whom were diagnosed in the past and are still living with the disease).

Mortality refers to a health event resulting in death. Mortality rate is a measure of the number of deaths (in general, or due to a specific cause) in some population, scaled to the size of that population, per unit of time. Mortality is typically expressed as a rate per

100,000 population (example: the cardiovascular disease mortality rate is used to describe the total number of deaths per 100,000 individuals that occur due to cardiovascular disease over a one-year period).

Most of the rates presented are *age-adjusted*, which takes into account the difference in age structures in differing populations (i.e., the given rates are those that would occur if the population of Michigan had the same age distribution as that of the United States). The age-adjusted rates include labels on the graphs which identify the rates as age-adjusted.

To help complete the health picture in Michigan, the following racial categories are used: White, Black, American Indian/Alaska Native (AIAN), Asian, Native Hawaiian and Other Pacific Islander (NHPI), Other, Multi, and Hispanic or Latino. The Hispanic or Latino category includes persons of Hispanic or Latino ethnicity regardless of their race. These categories help increase awareness about health disparities. The U.S. National Institutes of Health define health status disparities as differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions between specific population groups (NIH 2000). Reasons for health disparities include differences in risk factors, lack of access to health care, inadequately targeted prevention messages, and cultural differences between the health system and the populations it serves.

All data in this report, unless indicated otherwise, were compiled by the Michigan Department of Community Health, Health Policy and Planning Administration (Health Planning and Access to Care Division) and the Bureau of Local Health and Administrative Services, (Division of Vital Records and Health Statistics).

Population Distribution by Age

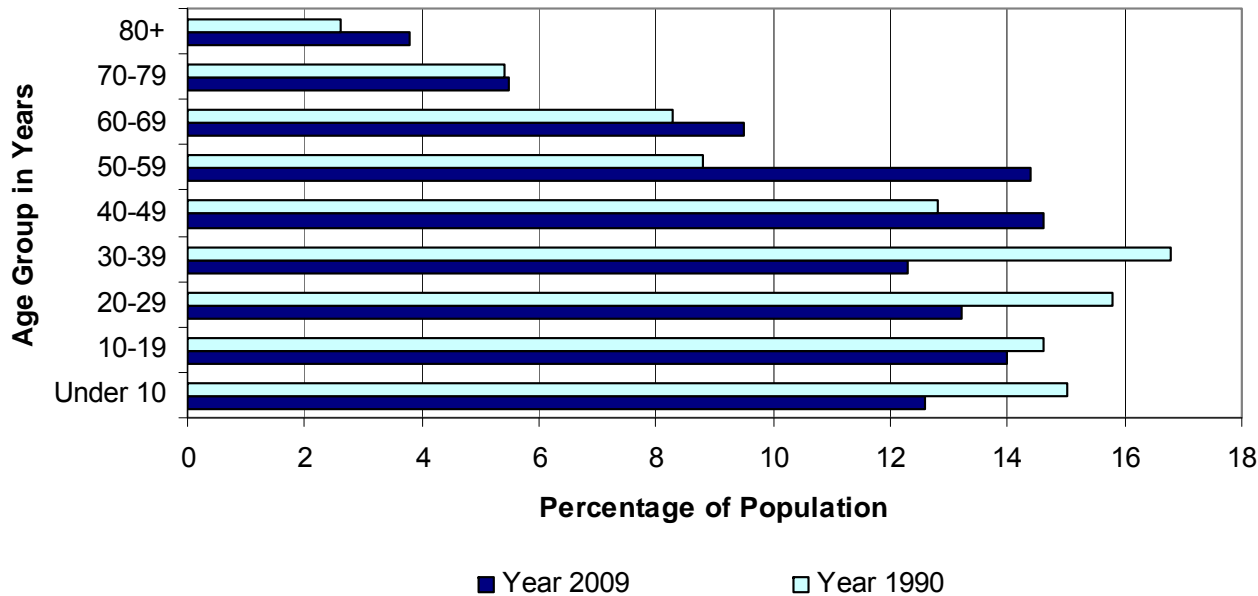
MICHIGAN

Indicator Definition/Overview:

- The average age of the population has increased from 1990 to 2009.
- In 1990, there were more people aged 20-39 than any other age group in Michigan. In 2009, there were more people aged 40-59 than any other age group in Michigan.
- The overall need for healthcare services is increasing with Michigan's aging population because the oldest age groups (which have increased in size) tend to be the greatest consumers of health care resources.

Healthy People 2020 Target:
n/a

Michigan Population Distribution by Age, Year 1990 & 2009



Data Source:
Michigan Department of Community Health, Division for Vital Records and Health Statistics, using Population Estimates (latest update 9/2010) released by the Centers for Disease Control and Prevention, National Center for Health Statistics (NCHS).

Population Distribution by Gender

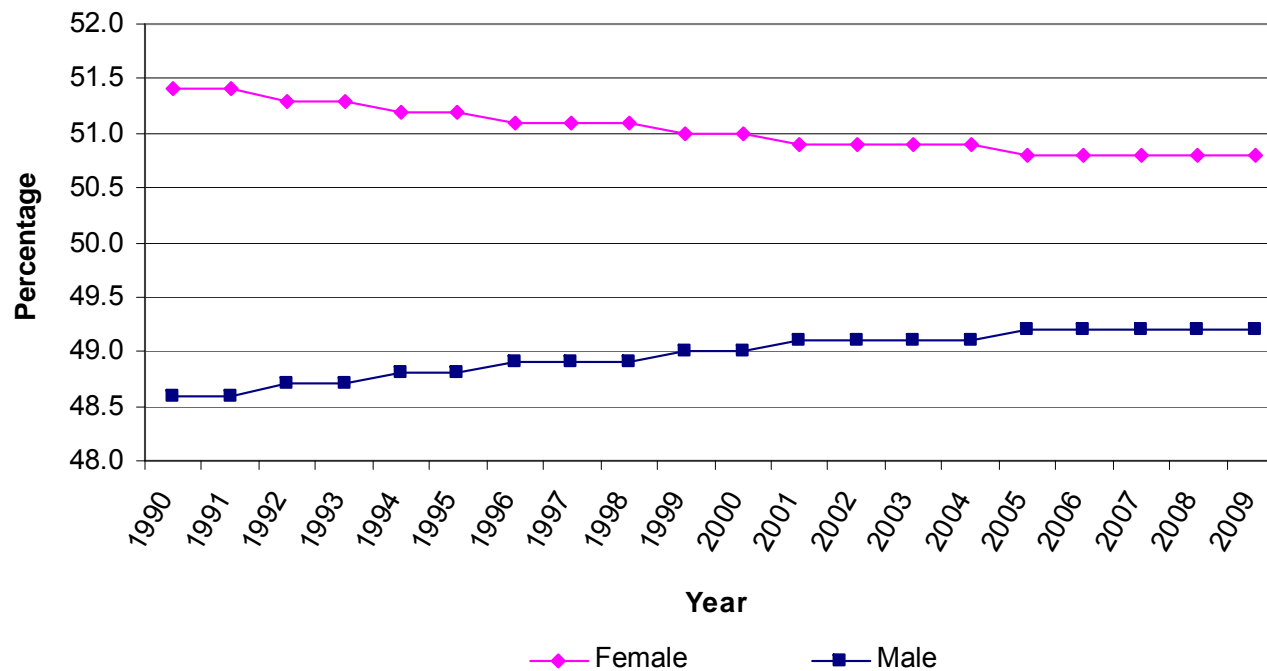
MICHIGAN

Indicator Definition/Overview:

- From 1990 to 2009, the portion of the population that is female has steadily decreased by just over a half percent, whereas the portion of the population that is male has steadily increased just over a half percent.
- There is still a higher percentage of the population that is female than male, but the population is closer to being equally distributed in 2009 than 1990.

Healthy People 2020 Target:
n/a

Michigan Population Distribution by Gender, 1990-2009



Data Source:
Michigan Department of Community Health, Division for Vital Records and Health Statistics, using Population Estimates (latest update 9/2010) released by the Centers for Disease Control and Prevention, National Center for Health Statistics (NCHS).

Racial and Ethnic Distribution

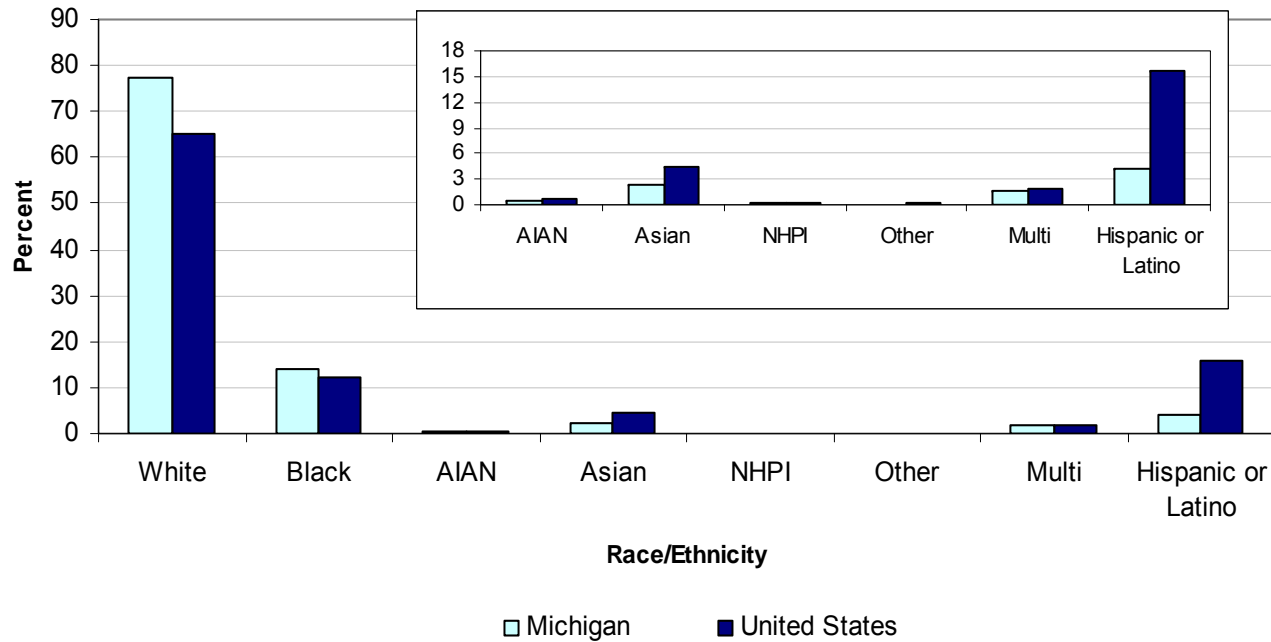
MICHIGAN

Indicator Definition/Overview:

- There are a greater percentage of White people in the United States and Michigan than any other race.
- There are a greater percentage of White and Black people in Michigan than the respective percentages in the United States.
- **Key:** AIAN= American Indian/Alaska Native, NHPI= Native Hawaiian and Other Pacific Islander
- **Note:** Hispanic is not a mutually exclusive ethnic category and could include individuals from any race category.

Healthy People 2020 Target:
n/a

**Percent Distribution by Race and Ethnicity,
Michigan and the United States, 2009**



Data Source:
United States Census Bureau,
2009 American Community Survey.

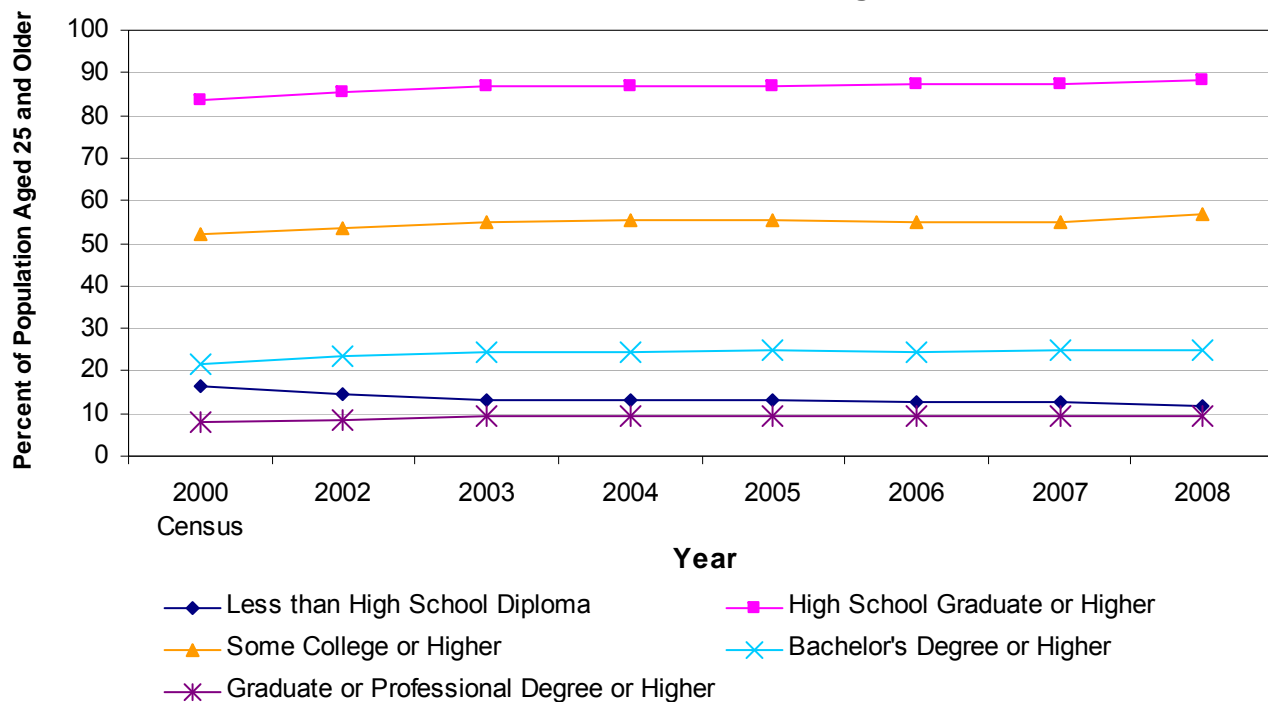
Education

MICHIGAN

Indicator Definition/Overview:

- The U.S. Census Bureau collects educational attainment information annually through the American Community Survey and Current Population Survey.
- Education level is commonly associated with access to health care. Individuals with higher education levels are more likely to have high income jobs and/or employer-based health insurance coverage and, therefore, the cost of healthcare is less likely to be a barrier to access.
- Education at a level less than high school completion is commonly associated with individuals in poverty.

Educational Attainment in Michigan



Healthy People 2020 Target:
Education may be included in the new Social Determinants of Health section of the Healthy People 2020 objectives. However, no target has as yet been identified.

Data Source:
United States Census Bureau – Educational Attainment.

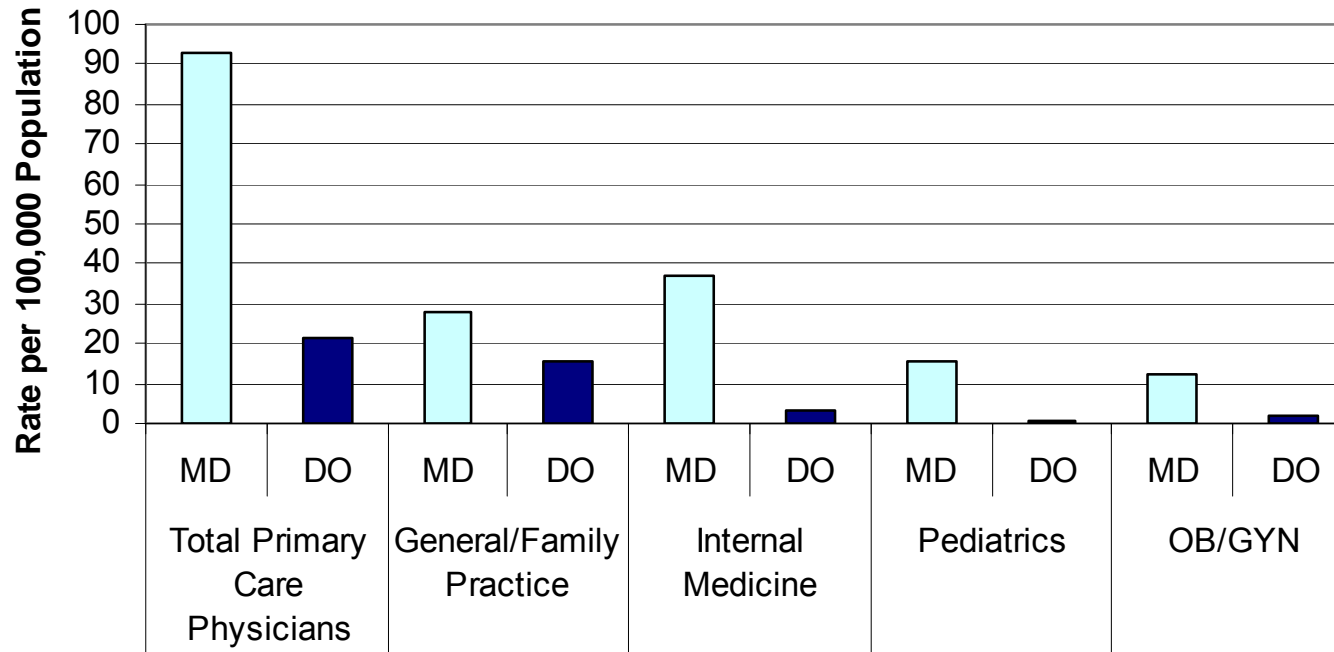
Workforce – Primary Care Physicians

MICHIGAN

Indicator Definition/Overview:

- Michigan and the U.S. will soon be presented with serious shortages of primary care physicians as an increased number of medical students are choosing non-primary care specialties as opposed to primary care, and existing primary care physicians are leaving the workforce.
- Nearly one in five Americans lacks sufficient access to primary care due to physician shortages.
- Physicians employed by the federal government are not included in the rates presented below. A federal physician is defined as full-time employment by the federal government, including the Army, Navy, Air Force, Veteran's Administration, the Public Health Service and other federally funded agencies.

Primary Care Physicians (MD - 2008, DO - 2007) and their Specialities in Michigan



Healthy People 2020 Target:
An increased primary care workforce is included in the Access to Health Services section of the Healthy People 2020 objectives. However, no target has as yet been identified.

Data Source:
Area Resource File (ARF). 2009-2010. United States Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Rockville, MD.

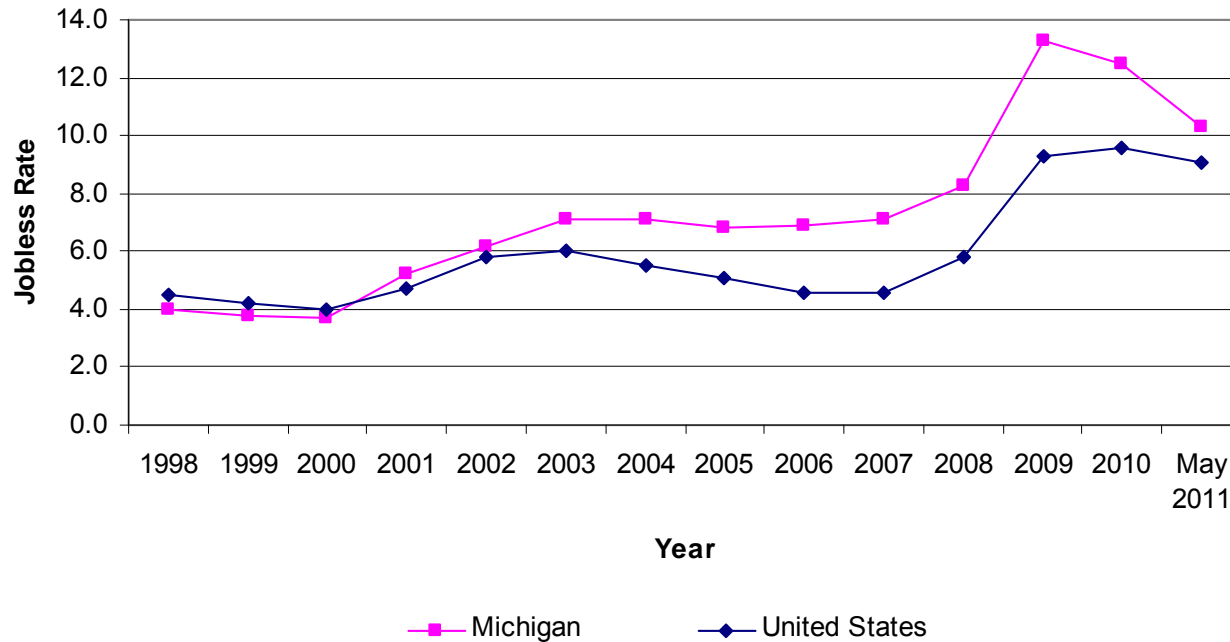
Unemployment Rate

MICHIGAN

Indicator Definition/Overview:

- Unemployment Rate, or Jobless Rate, is an indicator of the health of the economy. With a larger percentage of people out of work, fewer may have employer based health insurance or income to be able to afford access to preventive and maintenance health services and/or prescriptions.
- Higher unemployment rates also mean a larger portion of the labor force may be seeking assistance through Medicaid.
- Unemployment data is collected through Michigan's Department of Licensing and Regulatory Affairs (LARA) and housed at the Labor Market Information (LMI) site. Nationally, the U.S. Department of Labor oversees the data.

The Jobless Rate in Michigan and the United States



Healthy People 2020 Target:
Access to job opportunities may be included in the new Social Determinants of Health section of the Healthy People 2020 objectives. However, no target has as yet been identified.

Data Sources:
United States Bureau of Labor Statistics.

Michigan Department of Licensing and Regulatory Affairs: Labor Market Information.

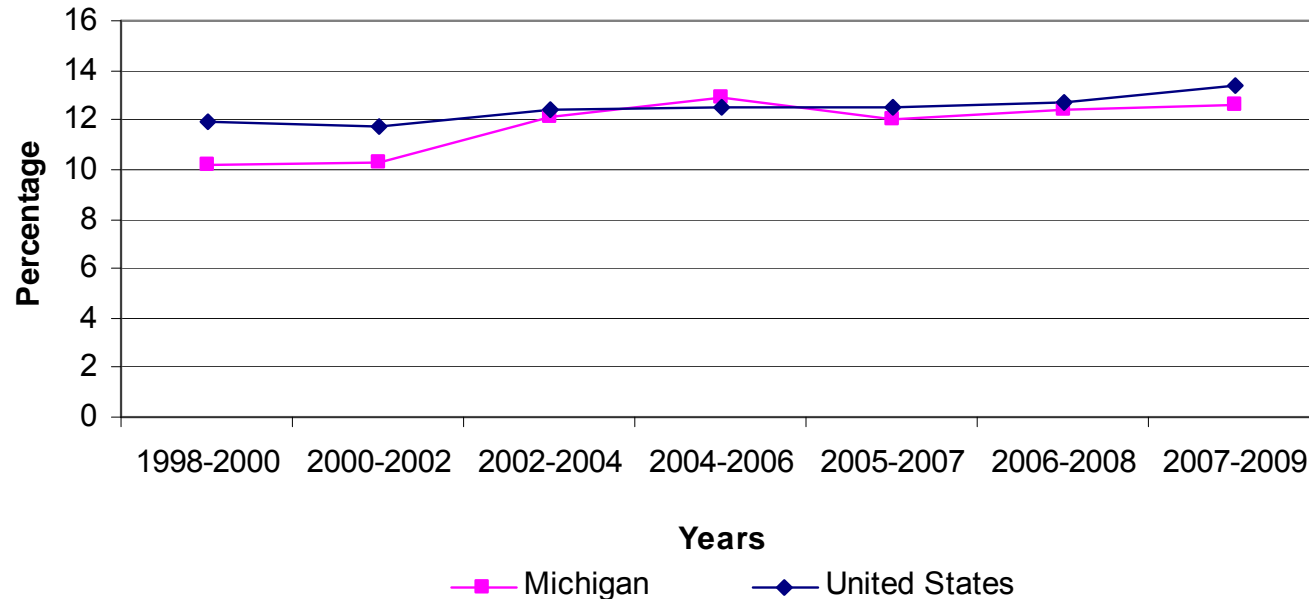
Adults and Children in Poverty

MICHIGAN

Indicator Definition/Overview:

- Poverty rates are established with the ten-year Census, and percentages are then estimated annually based on the American Community Survey and/or the Annual Social and Economic Supplement to the Current Population Survey.
- The national poverty rate has remained between 11 percent and 15 percent from 1998 to 2009.
- Poverty rates can vary greatly across subpopulations.
- The poverty rate for children remains higher than the total population rate.

Poverty in Michigan and the United States Three-year Averages



Healthy People 2020 Target:

Access to a living wage may be included in the new Social Determinants of Health section of the Healthy People 2020 objectives. However, no target has as yet been identified.

Data Source:

United States Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

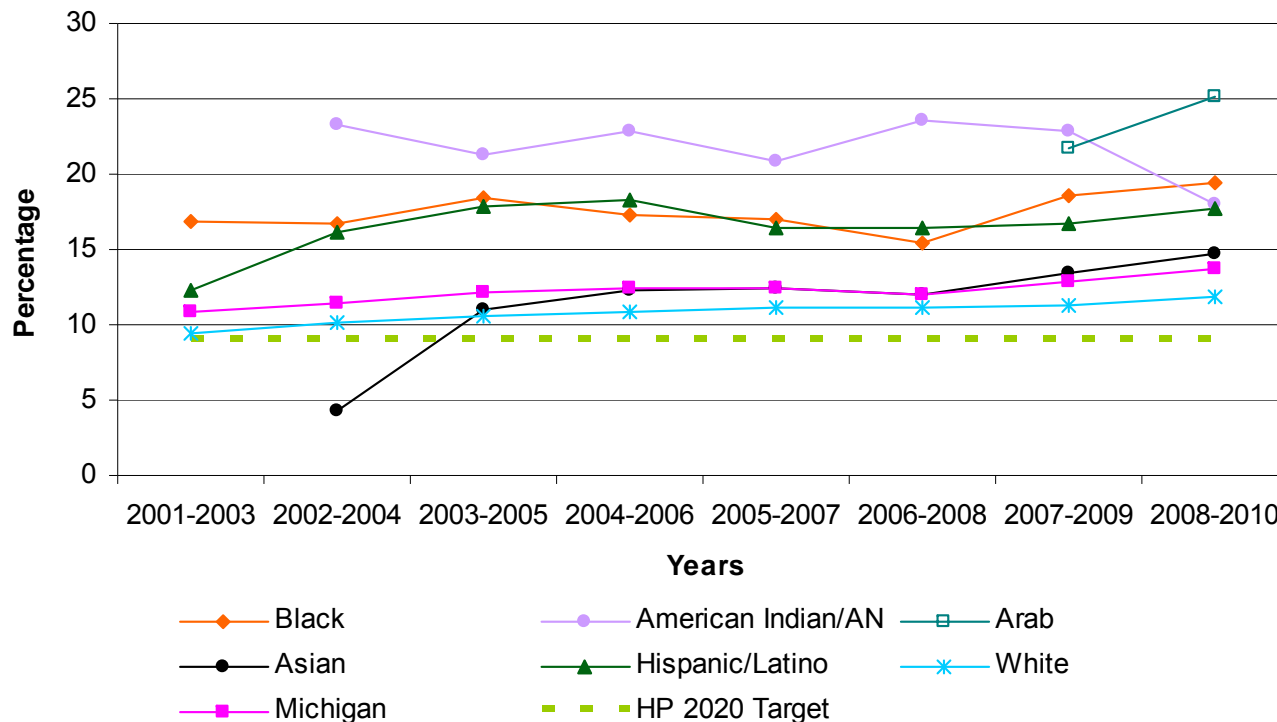
Access to Care

MICHIGAN

Indicator Definition/Overview:

- Unmet healthcare need is an indicator commonly used to portray problems in access to healthcare services, including lack of health insurance and limited availability of providers.
- Unmet healthcare need is also associated with greater emergency room use and disadvantaged individuals delay in seeking care for conditions that are associated with longer hospital stays and poorer health outcomes.
- Note: Hispanic is not a mutually exclusive ethnic category and could include individuals from any race category. The availability of data on those of Arabic Ancestry is limited and only available from years 2007-2009 to 2008-2010.

Percentage of Michigan Adults Who Did Not Receive Needed Healthcare Due to Cost, By Race/Ethnicity



Healthy People 2020 Target:
The HP 2020 target for individuals who were unable to obtain or delayed in obtaining necessary medical care, dental care, or prescription medicines is 9.0 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2001 - 2010.

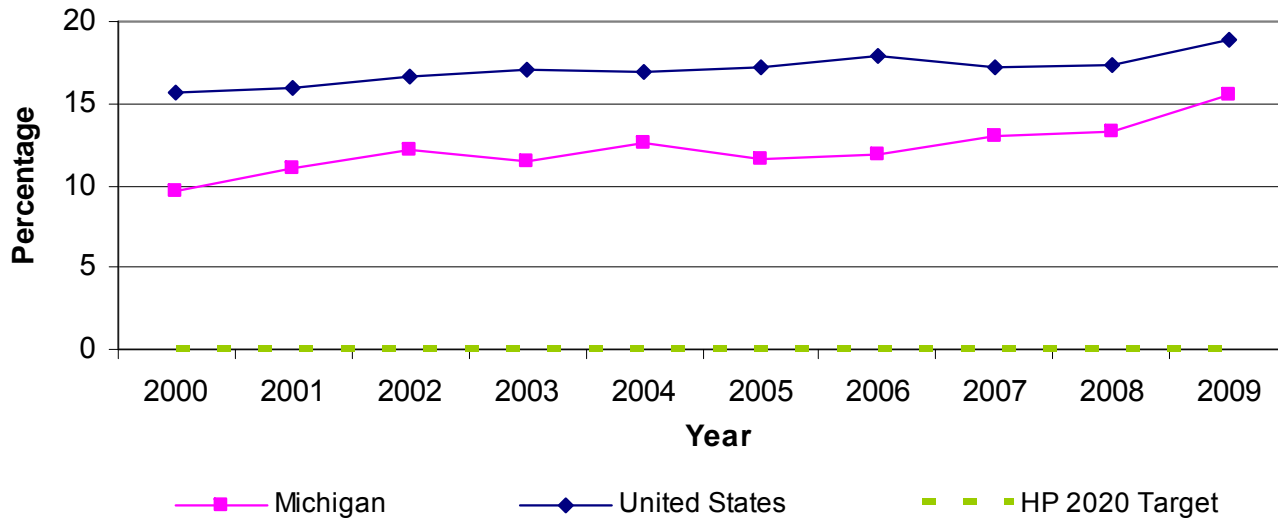
Uninsured

MICHIGAN

Indicator Definition/Overview:

- Approximately 50 million non-elderly individuals in the United States lacked health insurance coverage in 2009.
- Preventive and acute care alike are often unaffordable and, therefore, underutilized by the uninsured population.
- The Patient Protection and Affordable Care Act of 2010 requires that all Americans have health insurance by 2014.

Non-elderly (Under Age 65) Residents Without Health Insurance, Michigan and the United States



Healthy People 2020 Target:
The HP 2020 target for percentage of uninsured individuals is zero percent, or total coverage.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
United States Census Bureau, Current Population Survey. Initial analysis of the CPS data was provided by the Employee Benefit Research Institute (EBRI).

Leading Causes of Death

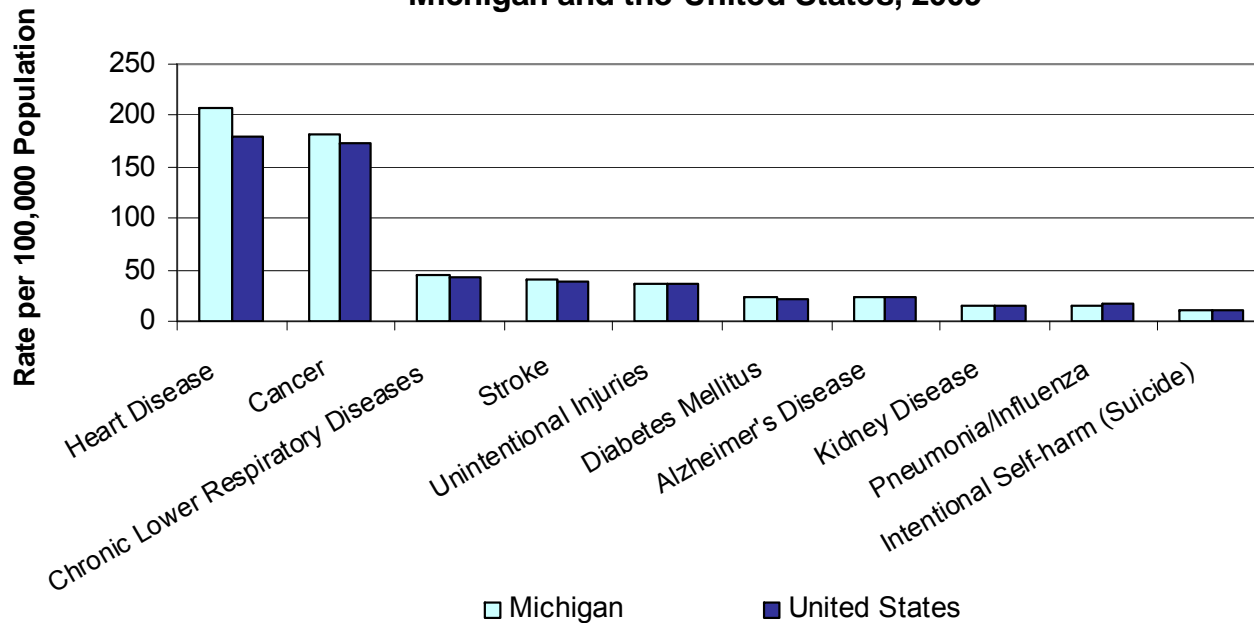
MICHIGAN

Indicator Definition/Overview:

- Heart disease is the leading cause of death, and cancer is the second leading cause for both the United States and Michigan.
- Michigan has slightly higher age-adjusted death rates for both heart disease and cancer than the United States.
- The United States has higher age-adjusted death rates for pneumonia/influenza.

Healthy People 2020 Target:
n/a

Age-Adjusted Death Rates for the Ten Leading Causes of Death, Michigan and the United States, 2009



Data Sources:

Michigan Department of Community Health, Division for Vital Records & Health Statistics, 2009 Michigan Resident Death File.

Population Estimate (latest update 9/2009), National Center for Health Statistics, U.S. Census Populations With Bridged Race Categories.

Kochanek KD, Xu JQ, Murphy SL, Miniño AM, Kung HC. Deaths: Preliminary Data for 2009. National Vital Statistics Reports; vol 59 no 4. Hyattsville, MD: National Center for Health Statistics. 2011.

Years of Potential Life Lost

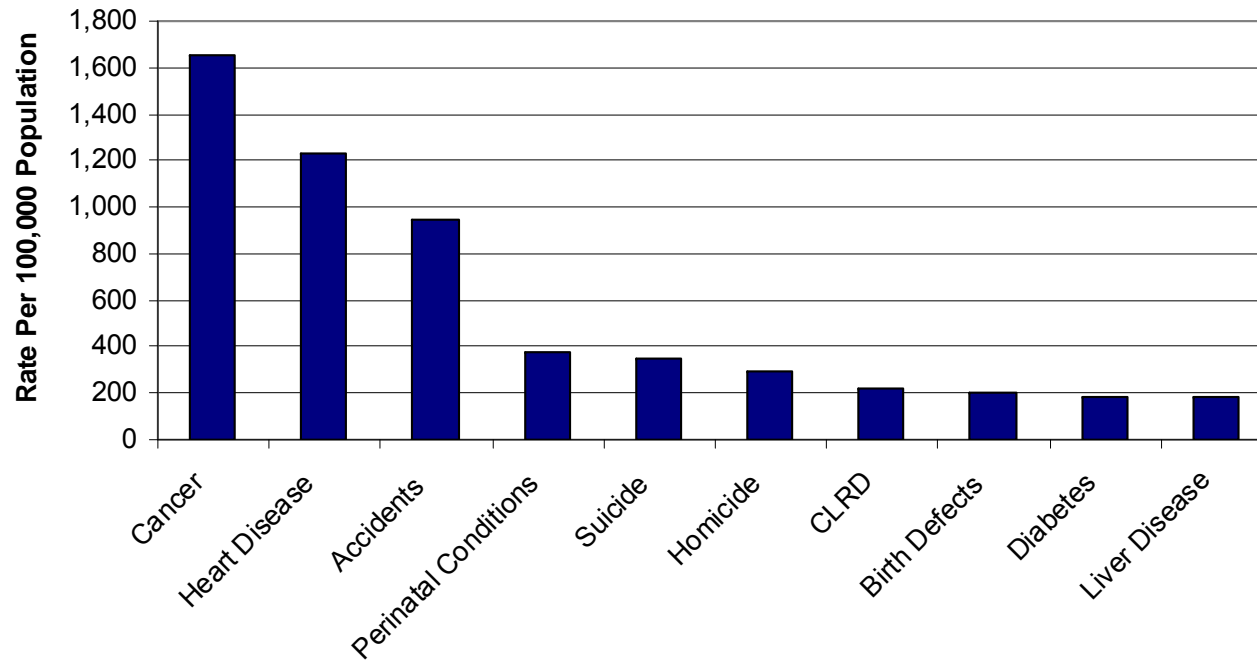
MICHIGAN

Indicator Definition/Overview:

- Years of potential life lost is a measure of mortality that emphasizes the causes of death that are most prevalent among persons under age 75.
- The number of years of potential life lost is calculated as the number of years between the age at death and 75 years of age for persons dying before their 75th year.
- Cancer and heart disease are the leading conditions that have caused years of potential life lost before age 75 in Michigan.
- **Key:** CLRD = Chronic Lower Respiratory Diseases

Healthy People 2020 Target:
n/a

Rates of Years of Potential Life Lost Before Age 75 for Select Causes of Death, Michigan, 2009



Data Source:
Michigan Department of Community Health, Division for Vital Records & Health Statistics, 2009 Michigan Resident Death File.

Population Estimate (latest update 9/2009), National Center for Health Statistics, U.S. Census Populations With Bridged Race Categories.

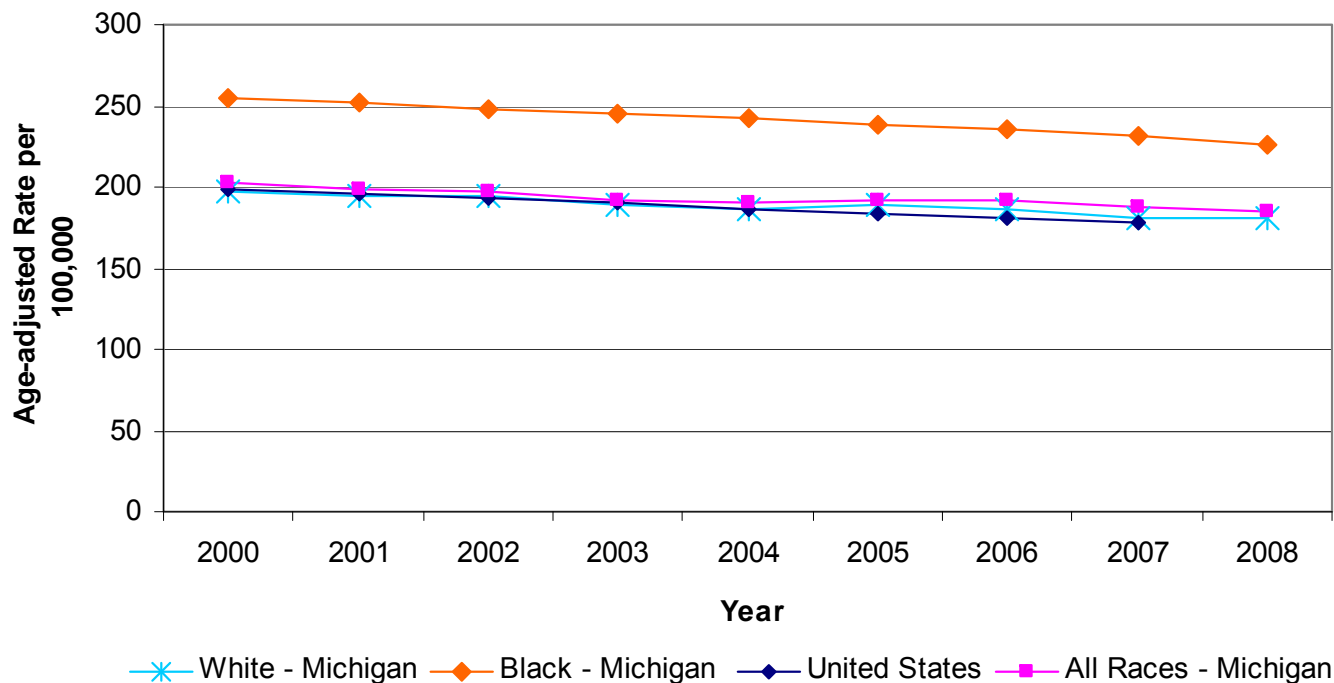
Cancer Mortality

MICHIGAN

Indicator Definition/Overview:

- Though survival rates for many types of cancer have increased recently, cancer remains the second leading cause of mortality in the United States and Michigan.
- It is estimated that cancer accounted for over a half million deaths in 2010 nationwide, with over 20,000 of those deaths occurring in Michigan.
- Preventive measures such as avoidance of tobacco, maintaining a healthy weight, and utilizing sun protection can result in fewer cancers.
- Medically underserved populations are at higher risk of being diagnosed at a later stage of cancer, thus decreasing the likelihood of survival.

Cancer Mortality, All Sites, Age-adjusted Rates, Michigan and the United States



Healthy People 2020 Target:

The HP 2020 target for cancer mortality is 160.6 deaths per 100,000 population.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Sources:

Michigan Department of Community Health, Division for Vital Records & Health Statistics, Michigan Cancer Surveillance Program. Michigan Cancer Incidence Public Use File 1985-2008.

National Cancer Institute. SEER Cancer Statistics Review, 1975-2007.

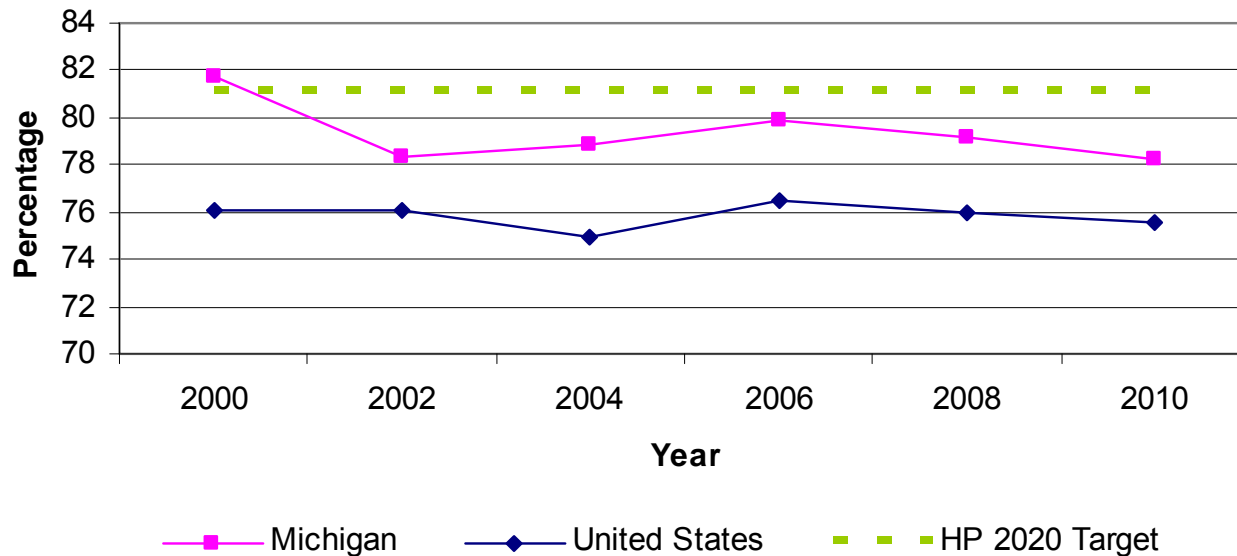
Breast Cancer Screening

MICHIGAN

Indicator Definition/Overview:

- Screening mammograms are used to periodically check for breast cancer in women who have exhibited no signs of the disease. Mammograms may also be used as a diagnostic tool after a mass has been detected or other symptoms arise.
- Current National Cancer Institute guidelines state that women over 40 should have mammograms every one to two years.

Had a Mammogram in the Past Two Years Among Women Aged 40 Years and Older, Michigan and the United States



Healthy People 2020 Target:

The HP 2020 target for individuals who receive a breast cancer screening based on the most recent guidelines is 81.1 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Sources:

Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2000 - 2010.

Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data, 2000 - 2010.

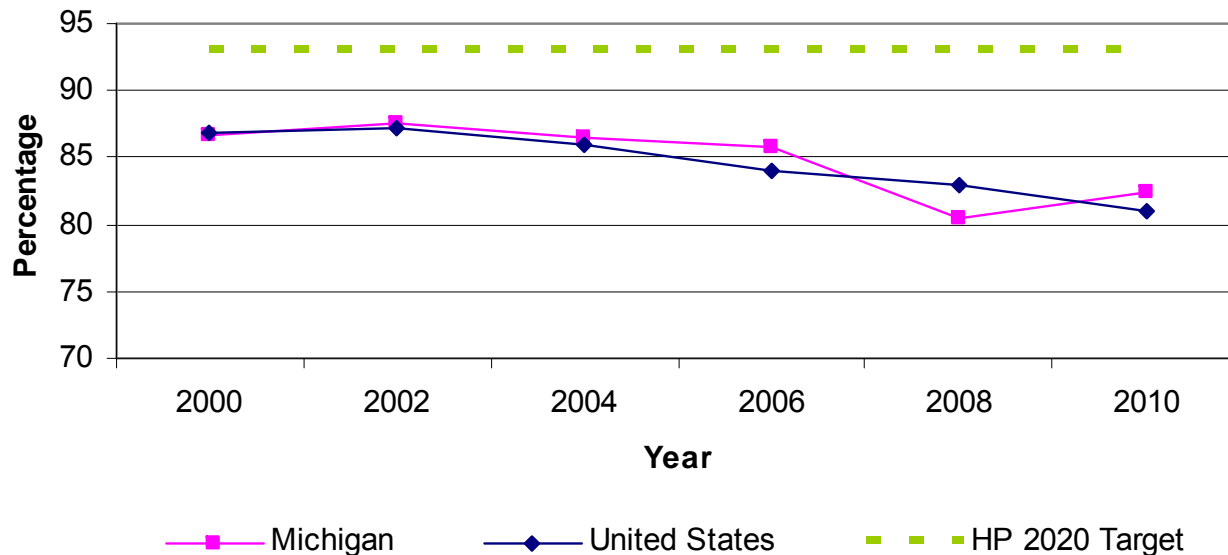
Cervical Cancer Screening

MICHIGAN

Indicator Definition/Overview:

- Pap tests detect abnormalities in cervical cells that may lead to cancer.
- Women aged 21 to 30 years should be screened for cervical cancer every two years, while women 30 years and older who have had three consecutive normal test results may be screened once every three years.

Had a Pap Test in the Past Three Years Among Women Aged 18 Years and Older, Michigan and the United States



Healthy People 2020 Target:
The HP 2020 target for individuals who receive a cervical cancer screening based on the most recent guidelines is 93 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Sources:
Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2000 - 2010.

Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data, 2000 - 2010.

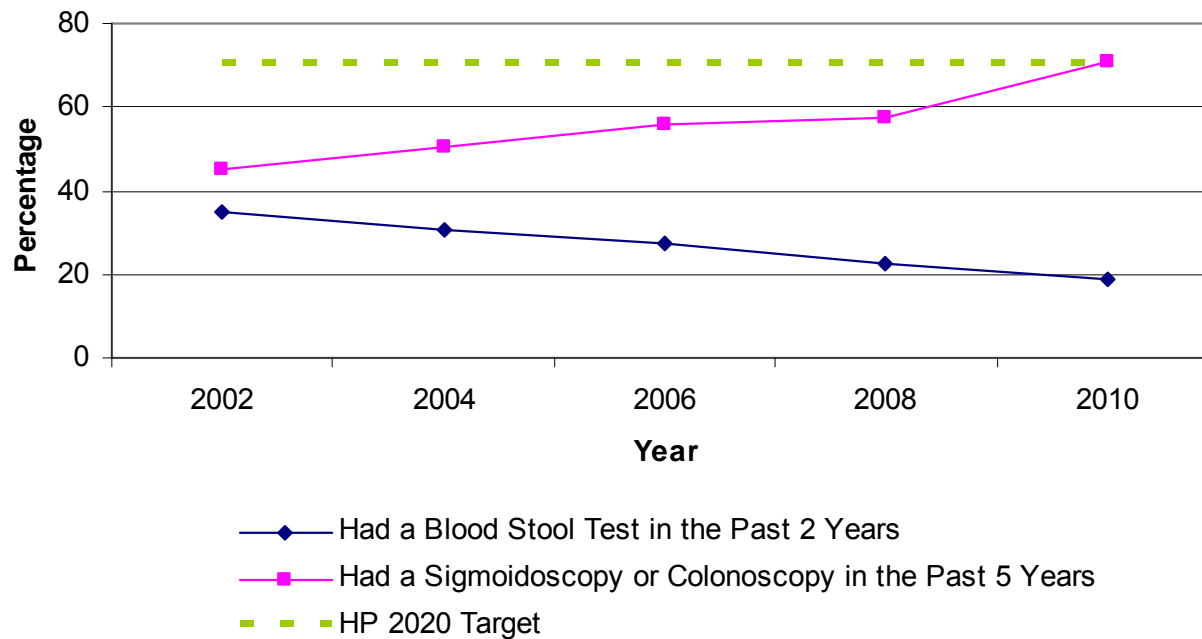
Colorectal Cancer Screening

MICHIGAN

Indicator Definition/Overview:

- Colorectal cancer is the third most common type of non-skin cancer in both men and women in the United States.
- In general, individuals should be tested for colorectal cancer beginning at age 50.
- Up to 60 percent of deaths from colorectal cancer could be prevented through regular screening.

Colorectal Cancer Screening Among Michigan Adults Aged 50 Years and Older



Healthy People 2020 Target:
The HP 2020 target for individuals who receive a colorectal cancer screening based on the most recent guidelines is 70.5 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2002 - 2010.

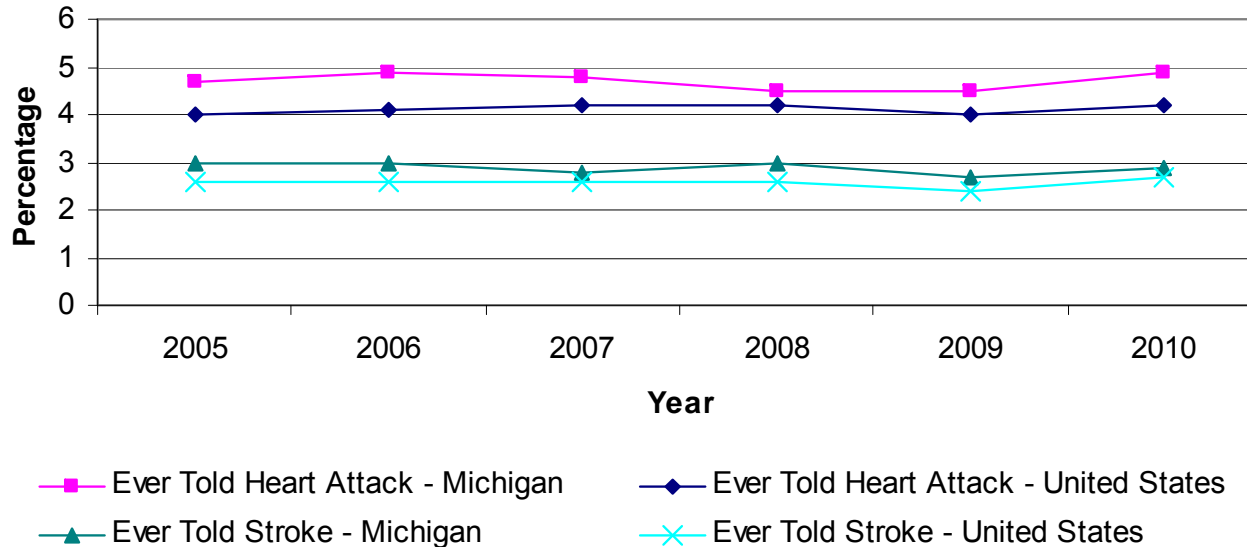
Cardiovascular Disease - Prevalence

MICHIGAN

Indicator Definition/Overview:

- The term “cardiovascular disease” encompasses any irregular functioning of the heart or blood vessels, most commonly manifesting as a heart attack or stroke.
- Risk factors for cardiovascular disease include obesity, smoking, and physical inactivity, among others.

**Adult Cardiovascular Disease Prevalence,
Michigan and the United States**



Healthy People 2020 Target:
An HP 2020 target does not exist for cardiovascular disease prevalence. There are HP 2020 targets related to coronary heart disease and stroke mortality.

Data Source:
Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2005 - 2010.

Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data, 2005 - 2010.

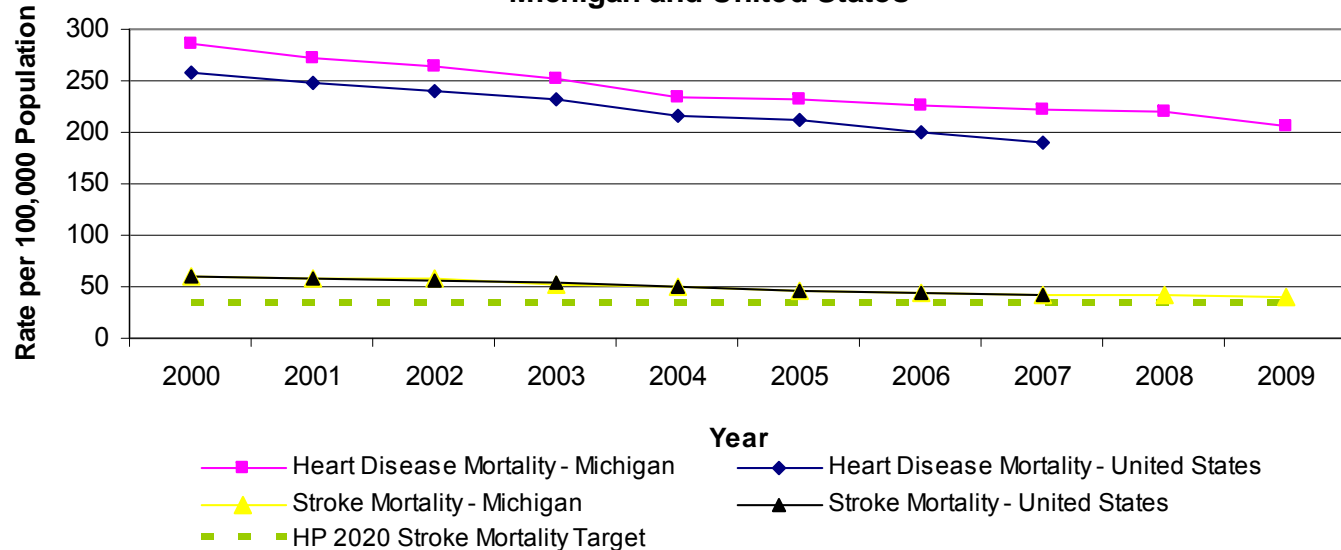
Cardiovascular Disease - Mortality

MICHIGAN

Indicator Definition/Overview:

- Cardiovascular disease accounts for over one-third of deaths in the United States, surpassing all other causes of death in terms of mortality rate.
- Stroke is the third leading cause of death for both men and women.
- Heart disease is the leading cause of death for both men and women.
- Data for 2008 and 2009 were not available for the United States.

**Age-adjusted Heart Disease and Stroke Mortality Rates,
Michigan and United States**



Healthy People 2020 Target:
An HP 2020 target does not exist for overall heart disease mortality, only for coronary heart disease mortality. The HP 2020 target for stroke mortality is a rate of 33.8 per 100,000 population.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Sources:
Michigan Department of Community Health, Division for Vital Records and Health Statistics: Mortality.

Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System.

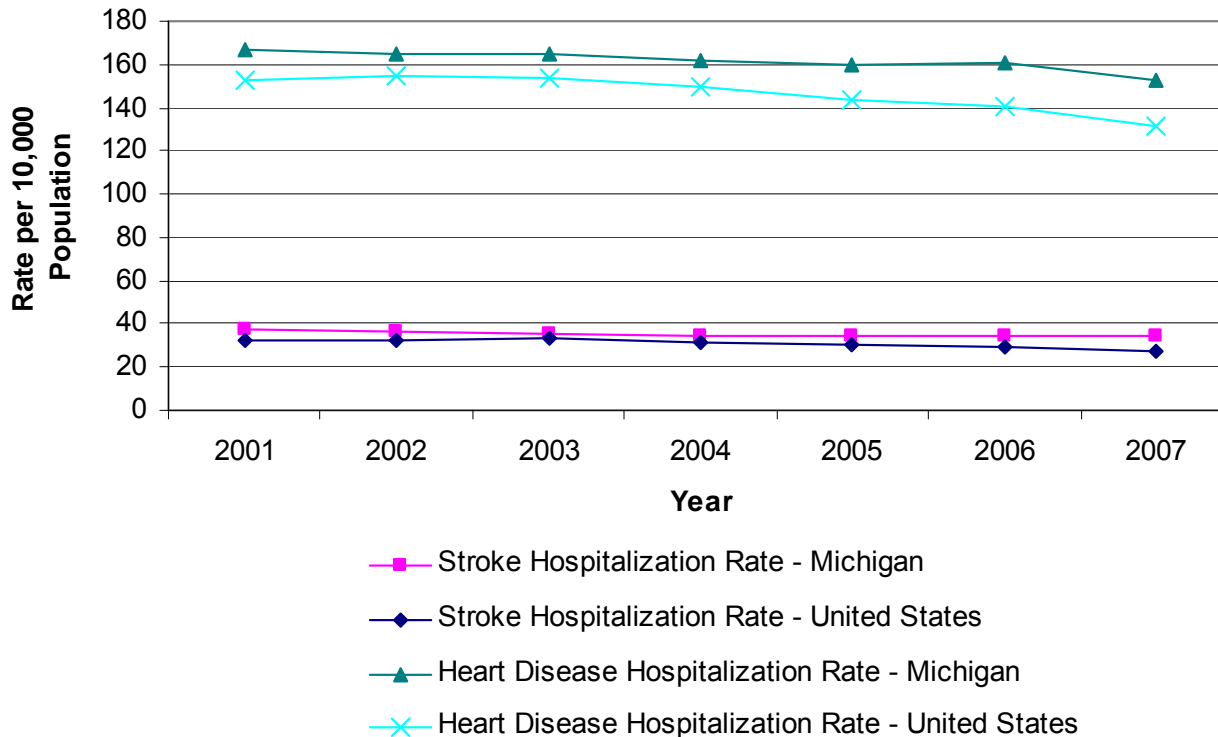
Cardiovascular Disease - Hospitalizations

MICHIGAN

Indicator Definition/Overview:

- The cost of cardiovascular disease in the United States was estimated to be more than \$503 billion in 2010, a figure that is expected to increase as the population ages.
- Hospitalization for heart disease is classified under the International Classification of Diseases 9 (ICD-9), codes 391-392, 393-398, 402, 404, 410-416, 420-429. Hospitalization for stroke is classified as codes 430-438.

**Heart Disease and Stroke Hospitalization Rates,
Michigan and United States**



Healthy People 2020 Target:

An HP 2020 target does not exist for overall heart disease hospitalization, nor for stroke hospitalization.

Data Sources:

Michigan Department of Community Health, Epidemiology Services Division, Michigan Community Health Information, Hospitalizations by Selected Diagnoses.

Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Discharge Survey.

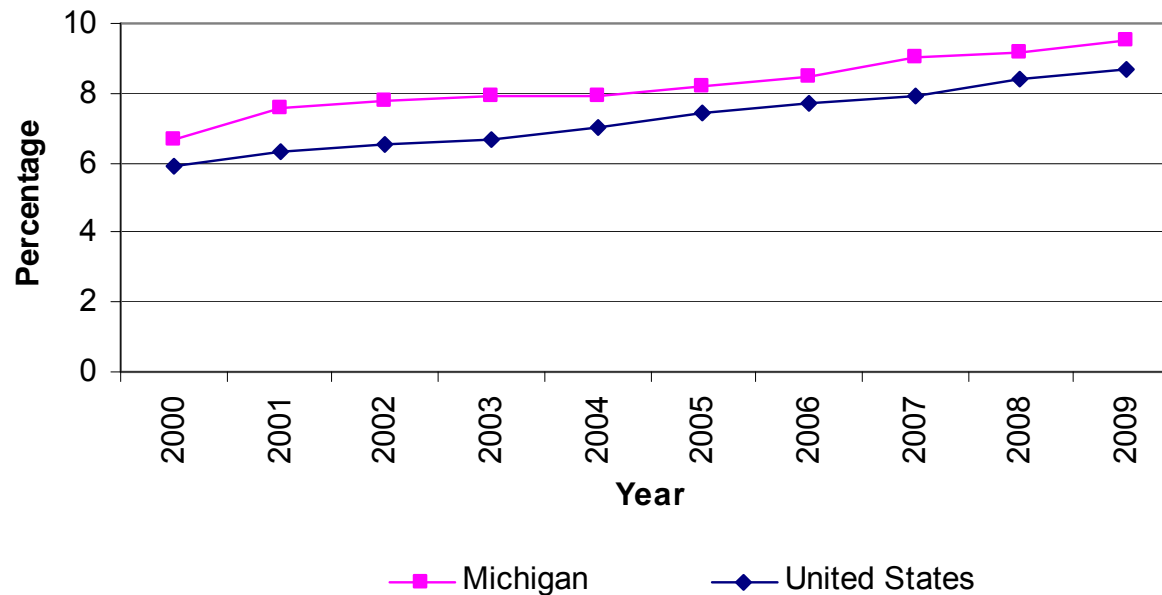
Diabetes Prevalence

MICHIGAN

Indicator Definition/Overview:

- The prevalence of diabetes in Michigan and the United States has been steadily increasing over the past ten years. In each of the past ten years, the prevalence of diabetes in Michigan has been greater than that of the nation as a whole.
- Uncontrolled diabetes can lead to heart attack or stroke.
- This indicator is measured as a non-age-adjusted, three-year moving average with the middle of the three averaged years as the reported year for each data point in the graph below.

**Adult Diabetes Prevalence,
Michigan and the United States**



Healthy People 2020 Target:
An HP 2020 target does not exist for overall diabetes prevalence. There are HP 2020 targets related to new diabetes diagnoses only.

Data Sources:
Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2000 - 2009.

Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation.

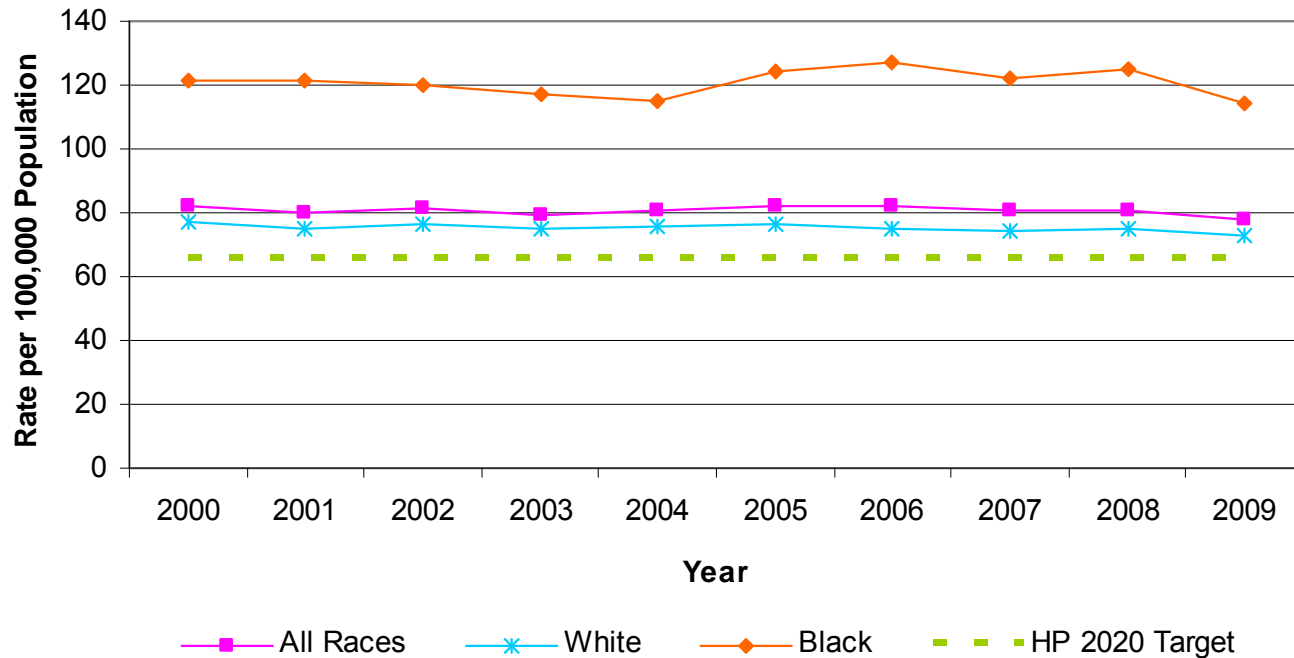
Diabetes-related Mortality

MICHIGAN

Indicator Definition/Overview:

- Diabetes is the sixth leading cause of death in Michigan.
- Rates are per 100,000 population.
- Overall, the risk for death among people with diabetes is about double that of people in the same age group who do not have diabetes.

Age-adjusted Diabetes-related Mortality Rates in Michigan



Healthy People 2020 Target:
The HP 2020 target for diabetes-related mortality is 65.8 deaths per 100,000 population.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
Michigan Department of Community Health, Division for Vital Records and Health Statistics: Mortality.

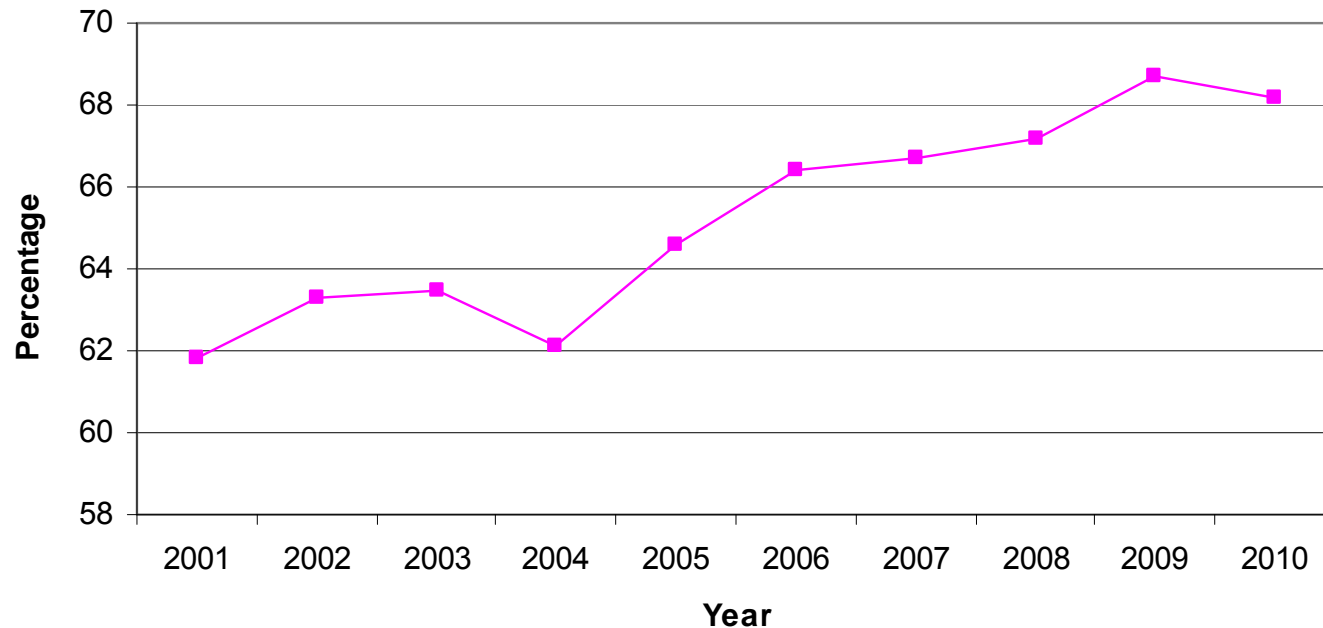
Overweight and Obesity

MICHIGAN

Indicator Definition/Overview:

- Overweight is defined as having a body mass index between 25.0 and 29.9, and obesity is defined having a body mass index of ≥ 30 .
- Obesity is one of today's most pressing public health issues. The rates of obesity have risen dramatically over the past 30 years. Nationwide, obesity prevalence doubled among adults between 1980 and 2004, from 15 percent to 32.2 percent.
- Obesity has been shown to be associated with several poor health outcomes, including hypertension, osteoarthritis, dyslipidemia, type 2 diabetes, coronary heart disease, stroke, gallbladder disease, sleep apnea and respiratory problems, and some cancers (i.e., endometrial, breast, and colon).

Prevalence of Overweight and Obesity Among Michigan Adults 20 Years and Older



Healthy People 2020 Target:

There is no HP 2020 target for a combined measure of overweight and obesity as displayed in this chart. However, the HP 2020 target for obesity is 30.6 percent of adults aged 20 and older.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2001 - 2010.

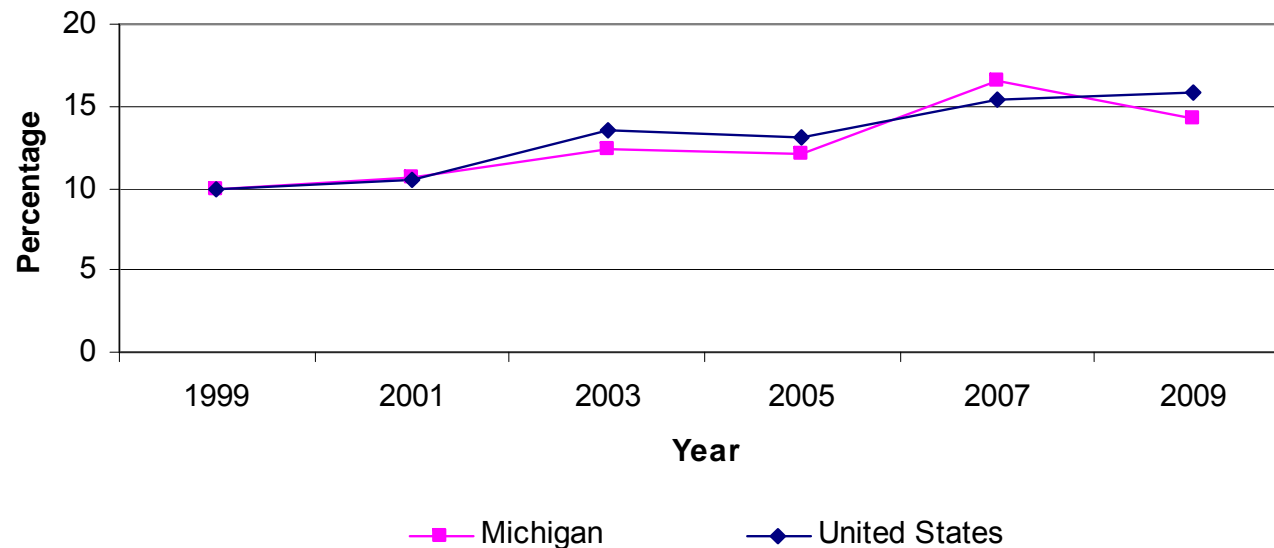
Childhood Overweight

MICHIGAN

Indicator Definition/Overview:

- The prevalence of overweight children tripled between 1980 and 2000.
- Adolescence is a particularly significant timeframe for weight maintenance, as some studies suggest that as many as 80 percent of individuals who are overweight during adolescence become obese adults.
- Overweight is associated with a number of potentially serious health conditions in children, such as depression, type 2 diabetes, and sleep apnea.

**Prevalence of Overweight Among Children Grades 9-12,
Michigan and the United States**



Healthy People 2020 Target:

An HP 2020 target does not exist for overweight children, grades 9-12, though one does exist for obese children aged 12 to 19 years.

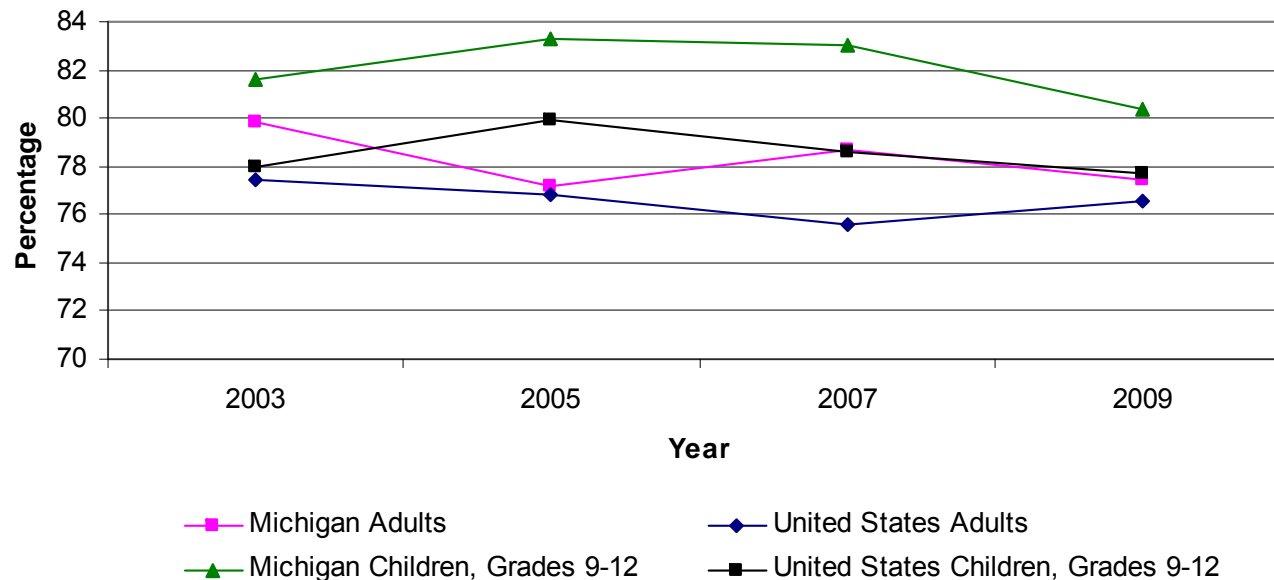
Data Source:

Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System, 1999 - 2009.

Indicator Definition/Overview:

- Dietary factors are associated with cardiovascular disease, stroke, cancer and diabetes, which are estimated to cost society billions of dollars each year in healthcare and lost productivity.
- Good nutrition is especially important in early childhood development.
- State-level monitoring of the nutrition status of Michigan residents includes program analysis, such as the Women, Infants and Children (WIC) Program, and evaluating statewide data from the Michigan Behavioral Risk Factor Survey (MiBRFS) focusing on fruit and vegetable consumption.
- Inadequate fruit and vegetable consumption is defined as consuming fruits and vegetables, on average, fewer than five times per day over the past seven days.

Inadequate Fruit and Vegetable Consumption Among Adults and Children Grades 9-12, Michigan and the United States



Healthy People 2020 Target:

An HP 2020 target does not exist for inadequate fruit and vegetable consumption. However, targets do exist for the proportion of fruits and vegetables in relation to total diet.

Data Sources:

Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2003 - 2009.

Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System, 2003 - 2009.

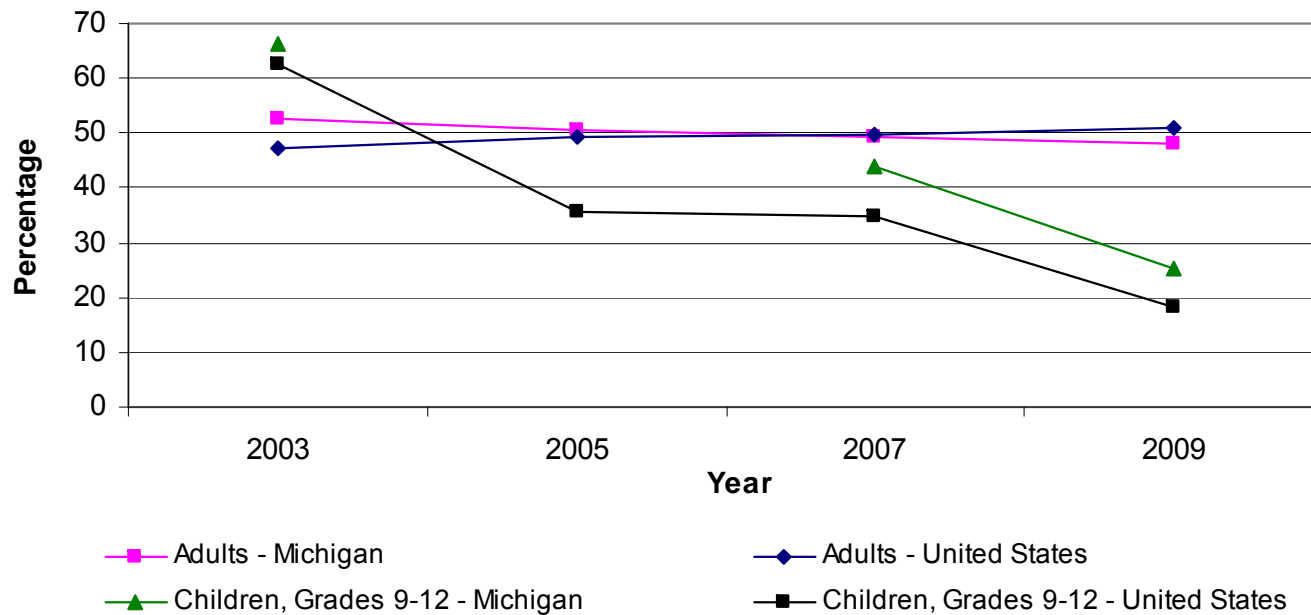
Physical Activity

MICHIGAN

Indicator Definition/Overview:

- Moderate to higher levels of regular physical activity lower mortality rates for both older and younger adults.
- Regular physical activity is associated with decreased risk of developing conditions such as diabetes, colon cancer, and high blood pressure.
- Regular physical activity reduces feelings of depression and anxiety; helps control weight; helps build and maintain healthy bones, muscles, and joints; helps older adults become stronger and better able to move about; and promotes psychological wellbeing.
- This indicator is measured as the percentage of adults and children grades 9-12 not meeting recommendations for physical activity as of the time of survey distribution.
- Michigan data were not available for children grades 9-12 for 2005.

**Sufficient Physical Activity Among Adults and Children
Grades 9-12, Michigan and the United States**



Healthy People 2020 Target:
The HP 2020 target for adults meeting recommendations for aerobic and muscle strengthening activity is 20.1 percent. The HP 2020 target for adolescents meeting recommendations for aerobic activity is 20.2 percent. A target incorporating muscle strengthening activity is under development.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Sources:
Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2003 - 2009.

Centers for Disease Control and Prevention, Youth Risk Behavior Surveillance System, 2003 - 2009.

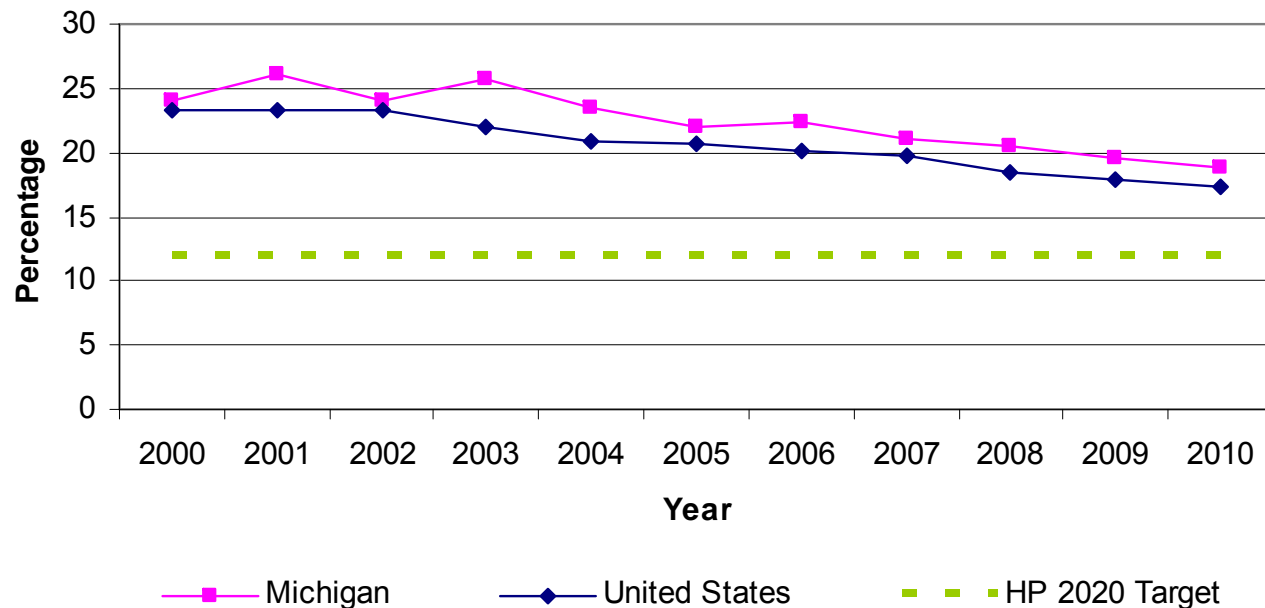
Smoking

MICHIGAN

Indicator Definition/Overview:

- Smoking is a leading cause of death and disability in the United States and is an important modifiable risk factor.
- Smoking contributes to the development of many kinds of chronic conditions including cancers, respiratory diseases, and cardiovascular diseases, and remains the leading preventable cause of premature death in the United States. It has been estimated that smoking costs the United States \$193 billion in annual health-related economic losses and 5.1 million years of potential life lost each year.
- Smoking is also associated with cardiovascular disease. Risk of stroke doubles for those who smoke as compared to those who do not.
- The Dr. Ron Davis Smoke-Free Air Law, which went into effect on May 1, 2010, protects all Michigan residents and visitors from exposure to secondhand tobacco smoke in all restaurants, bars, and businesses.

**Adult Cigarette Smoking Prevalence,
Michigan and the United States**



Healthy People 2020 Target:

The HP 2020 target for cigarette smoking is 12 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2000 - 2010.

Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data, 2000 - 2010.

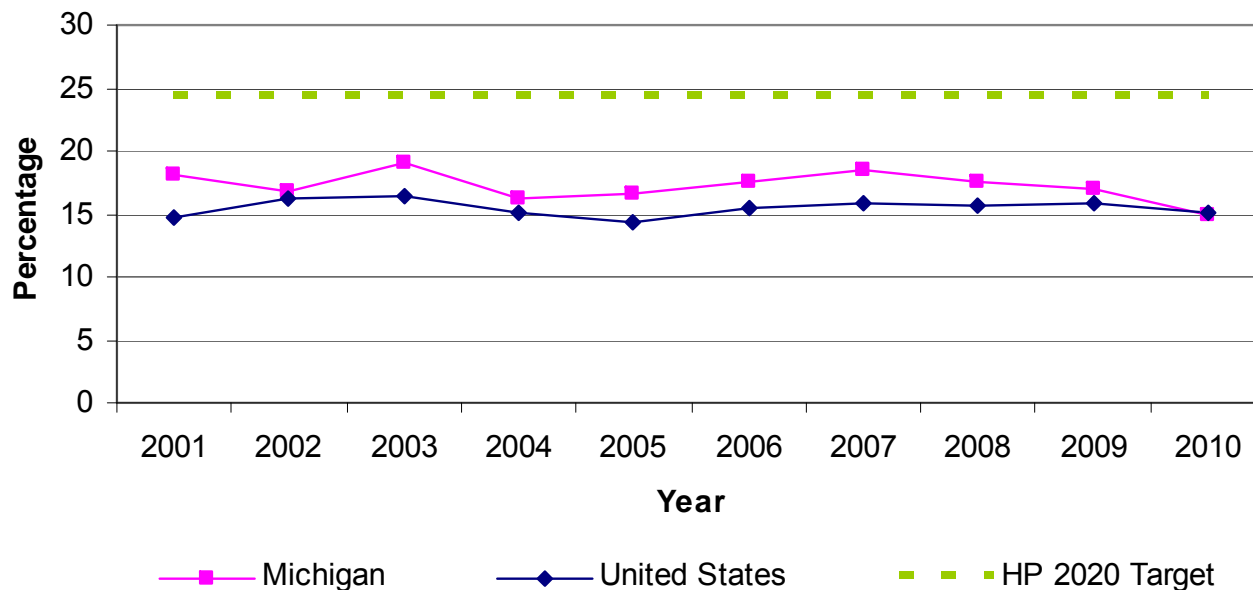
Binge Drinking

MICHIGAN

Indicator Definition/Overview:

- Approximately 79,000 people die each year in the United States as a result of excessive alcohol use, making its use the third leading behavior-related cause of death for the nation.
- Excessive alcohol consumption has both immediate consequences: miscarriage, stillbirth, birth defects, unintentional injuries, and violence; and long-term consequences: neurological problems; cardiovascular problems; psychiatric problems; social problems including family problems, lost productivity, and unemployment; cirrhosis; and worsening of liver function for persons with hepatitis C virus.
- Binge drinking is defined as the consumption of five or more drinks per occasion (for men) or four or more drinks per occasion (for women) at least once in the previous month.

Percentage of Adults Reporting Binge Drinking in Past Month, Michigan and the United States



Healthy People 2020 Target:

The HP 2020 target for binge drinking is 24.3 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2001 - 2010.

Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data, 2001 - 2010.

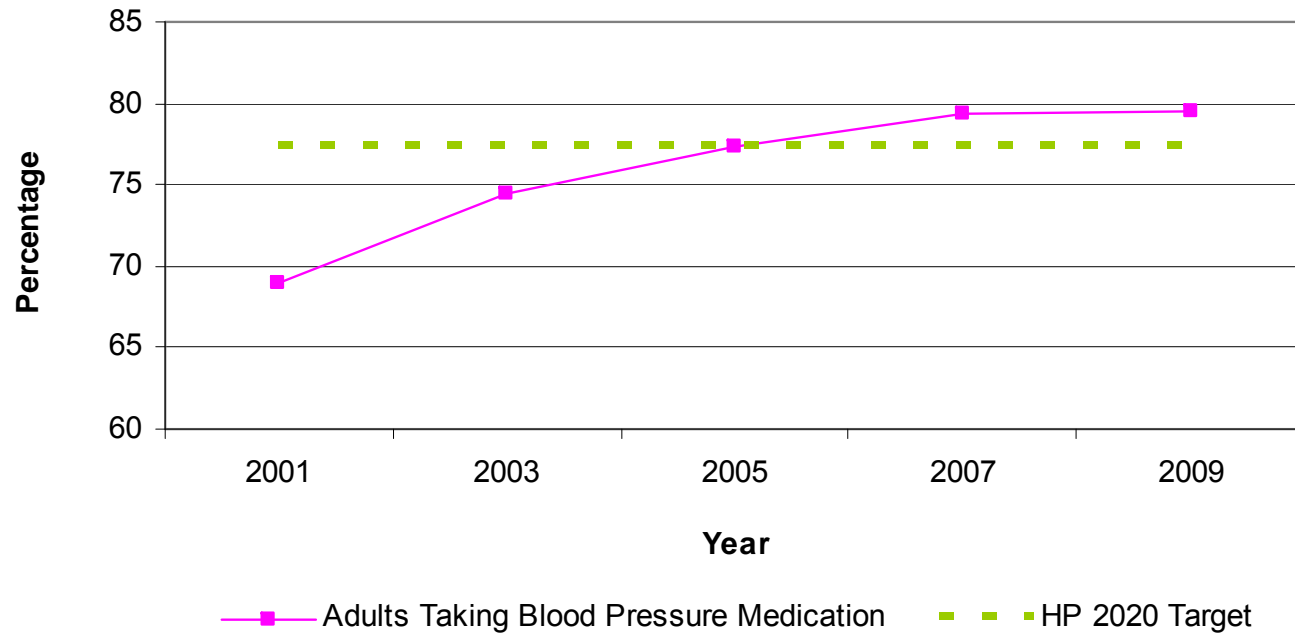
Controlled Blood Pressure

MICHIGAN

Indicator Definition/Overview:

- Approximately one of three adults in the United States has high blood pressure – also known as hypertension – which is a risk factor for heart disease and stroke.
- During the past ten years, more people with high blood pressure have become aware of the disease and received treatment.
- This indicator is measured as the percentage of adults who were ever told they had high blood pressure, and are currently taking medication to control it.

Percentage of Michigan Adults with Controlled Hypertension



Healthy People 2020 Target:

The HP 2020 target for adults with controlled hypertension is 77.4 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

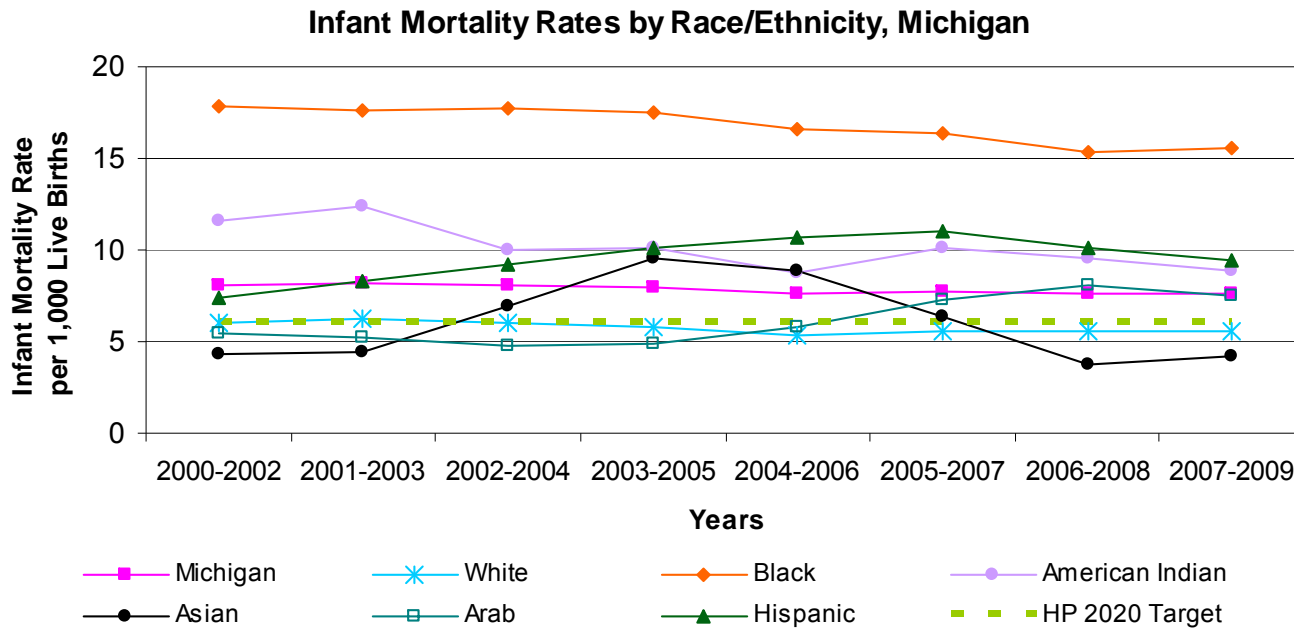
Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2001 - 2009.

Infant Mortality Rate

MICHIGAN

Indicator Definition/Overview:

- Infant mortality is used as an indicator of the level of child health and overall development and is often used to identify disparities among populations within a specific county.
- Rate is calculated as number of deaths per 1,000 live births.
- Note: Hispanic is not a mutually exclusive ethnic category and could include infants from any race category.



Healthy People 2020 Target:
The HP 2020 target for infant mortality is 6.0 deaths per 1,000 live births.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
Michigan Department of Community Health, Division of Vital Records and Health Statistics, Michigan Resident Birth and Death Files.

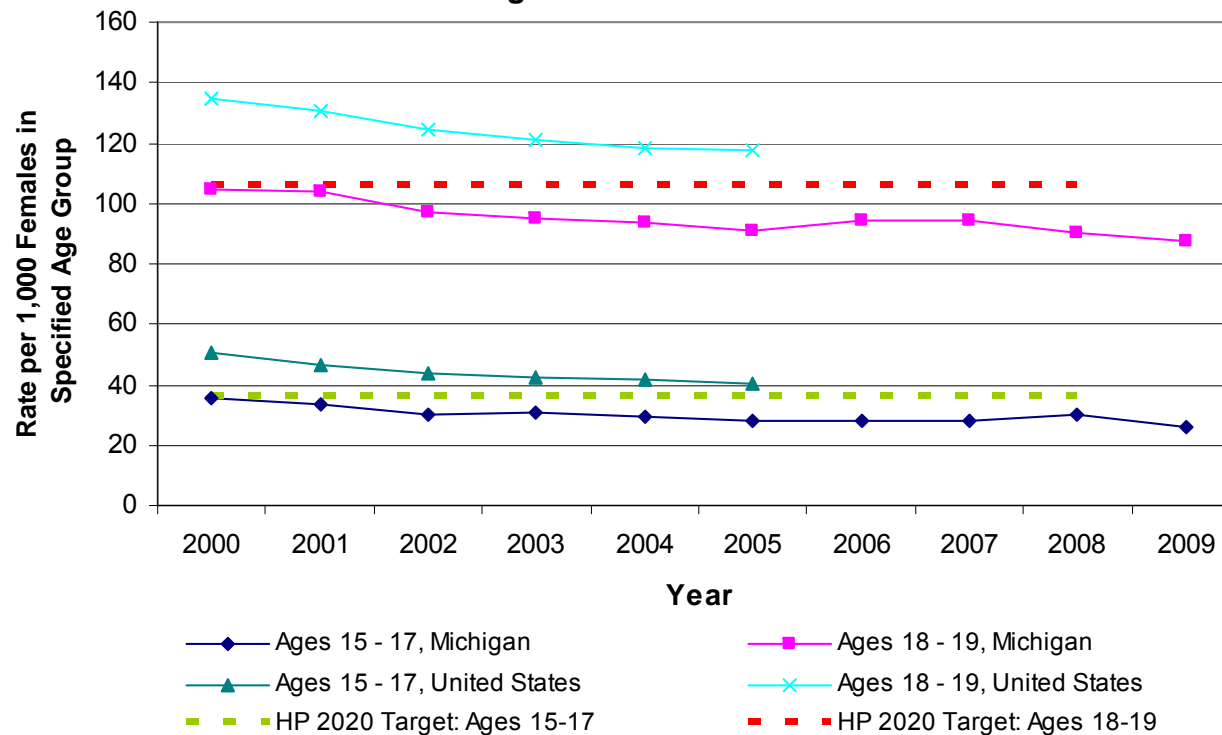
Teen Pregnancy

MICHIGAN

Indicator Definition/Overview:

- Nearly two-thirds of births to women younger than age 18 are the result of unintended pregnancy.
- The children of teenage mothers are less likely to graduate from high school, more likely to suffer health problems, and more likely to encounter problems with the law.
- Only about 50 percent of teenage mothers earn a high school diploma by age 22, in contrast with nearly 90 percent of their peers who had not given birth during their teenage years.
- Data for national teen pregnancy rates were not available for 2006 – 2009.
- Teen pregnancy rates include live births, abortions, and estimated number of miscarriages.

**Teen Pregnancy Rates,
Michigan and the United States**



Healthy People 2020 Target:

The HP 2020 target for teen pregnancies among 15 – 17 year olds is 36.2 per 1,000 females. The HP 2020 target for teen pregnancies among 18 – 19 year olds is 105.9 per 1,000 females.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Michigan Department of Community Health, Division of Vital Records and Health Statistics.

Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics Reports.

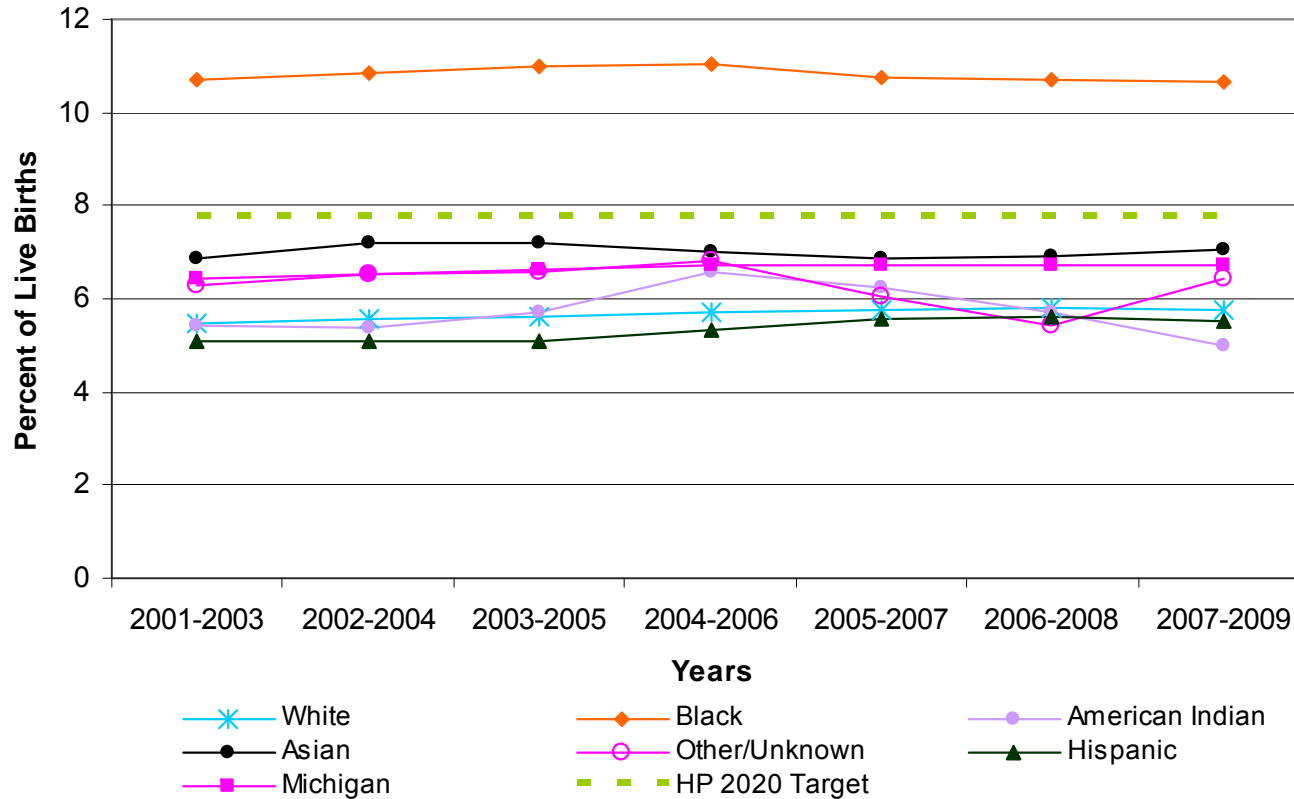
Low Birth Weight

MICHIGAN

Indicator Definition/Overview:

- Low birth weight is defined as fewer than 2,500 grams, or a maximum of approximately 5 pounds, 8 ounces.
- Low birth weight is a major cause of neonatal mortality (death before 28 days of age).
- Data are reported as three-year moving averages due to small sample sizes in some groups.
- Note: Hispanic is not a mutually exclusive ethnic category and could include individuals from any race category.

Low Birth Weight by Race/Ethnicity, Michigan



Healthy People 2020 Target:
The HP 2020 target for low birth weight is 7.8 percent of live births.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
Michigan Department of Community Health, Division of Genomics, Perinatal Health, and Chronic Disease Epidemiology.

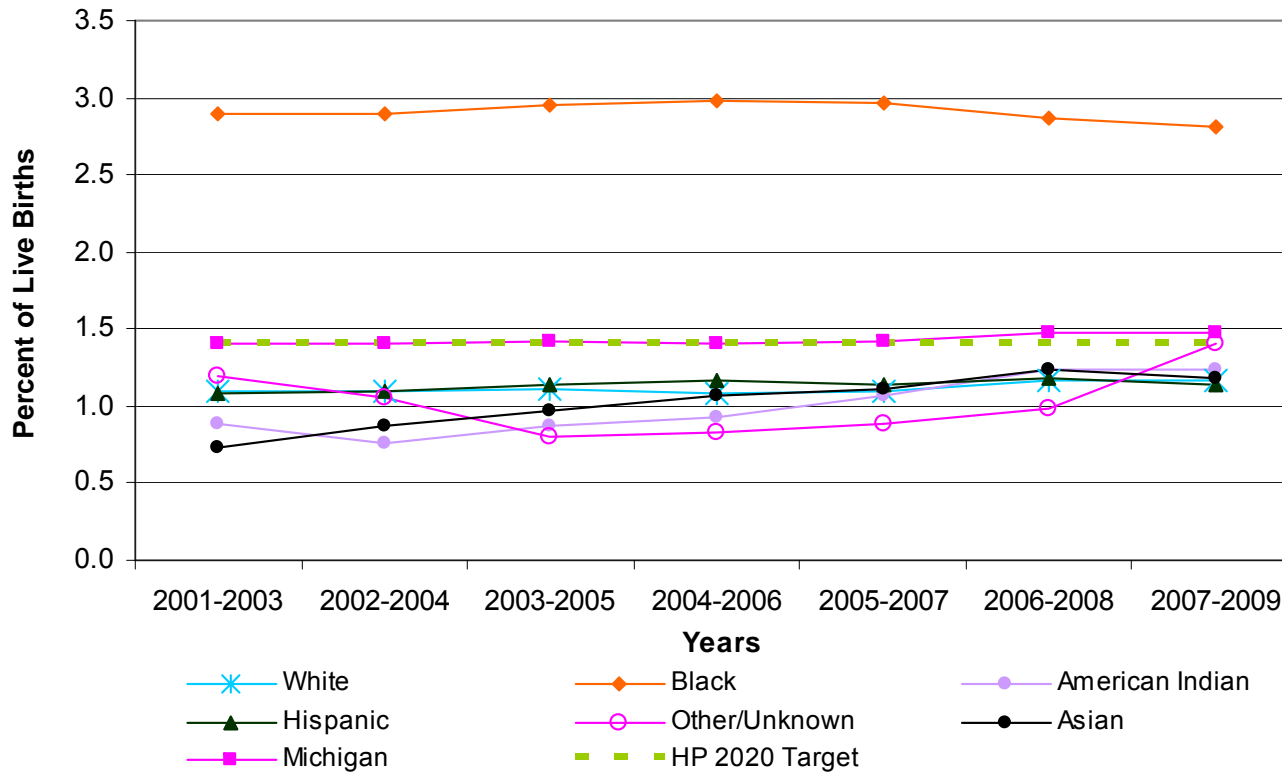
Very Low Birth Weight

MICHIGAN

Indicator Definition/Overview:

- Very low birth weight is defined as under 1,500 grams, or 3 pounds, 4 ounces.
- Very low birth weight infants are at a significantly increased risk of severe health problems, including physical, visual, cognitive, and developmental difficulties.
- Data are reported as three-year moving averages due to small sample sizes in some groups.
- Note: Hispanic is not a mutually exclusive ethnic category and could include individuals from any race category.

Very Low Birth Weight by Race/Ethnicity, Michigan



Healthy People 2020 Target:

The HP 2020 target for very low birth weight is 1.4 percent of live births.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Michigan Department of Community Health, Division of Genomics, Perinatal Health, and Chronic Disease Epidemiology.

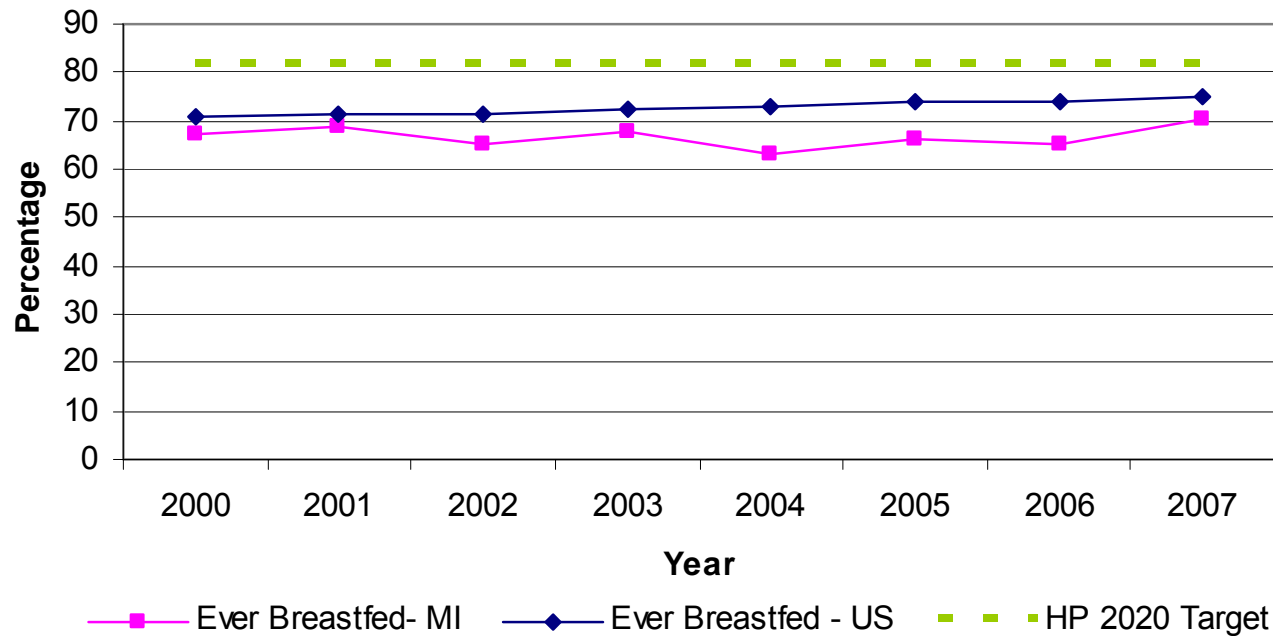
Breastfeeding – Ever Breastfed

MICHIGAN

Indicator Definition/Overview:

- Breast milk contains antibodies that can help protect infants from a variety of illnesses.
- Among breastfed babies, conditions such as ear infections, obesity, asthma, and diarrhea are less common.
- Mothers who have breastfed have a lower risk of developing breast and ovarian cancer, type 2 diabetes, and postpartum depression.

**Percent of Mothers Who Ever Breastfed,
Michigan and United States**



Healthy People 2020 Target:

The HP 2020 target for ever breastfeeding is 81.9 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Centers for Disease Control and Prevention, National Center for Health Statistics, National Immunization Survey.

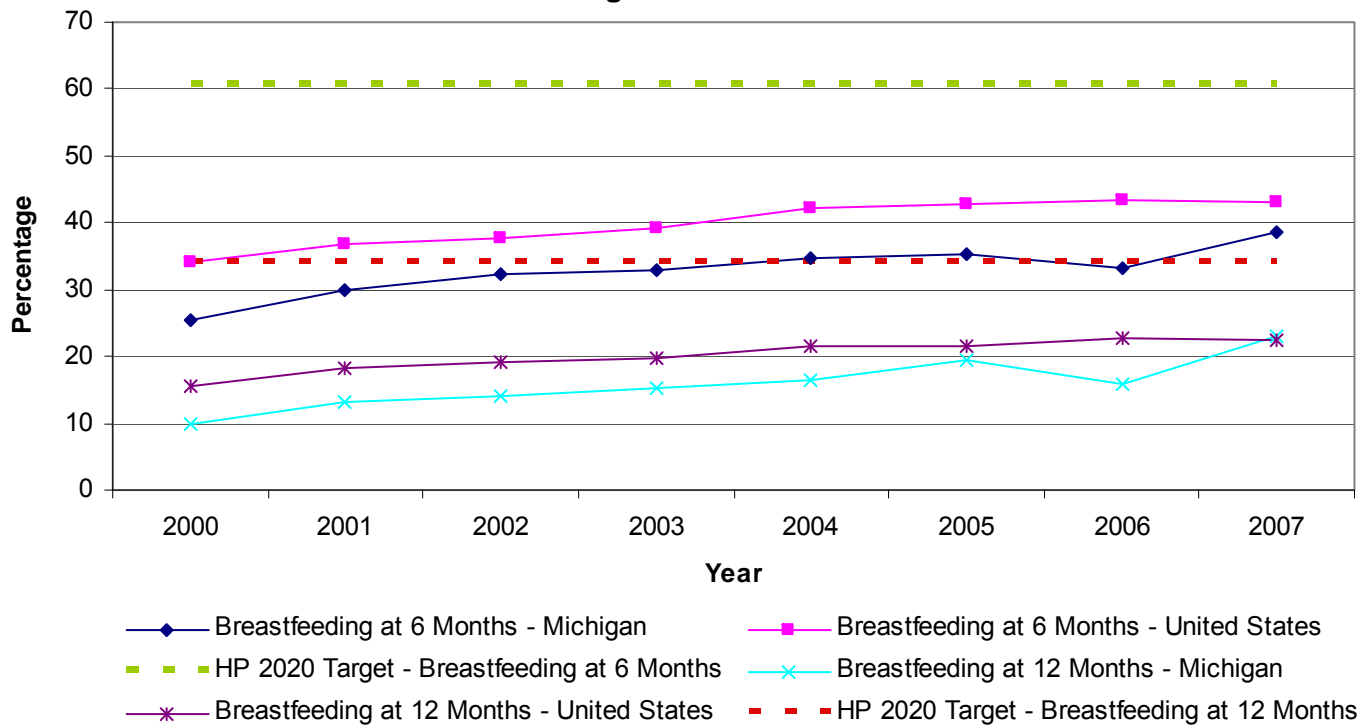
Breastfeeding – Duration

MICHIGAN

Indicator Definition/Overview:

- The American Academy of Pediatrics (AAP) recommends that infants are breastfed for at least 12 months.
- If 90 percent of mothers breastfed exclusively for six months, over 900 deaths among infants could be prevented yearly.

**Percentage of Mothers Breastfeeding at Six Months and One Year,
Michigan and United States**



Healthy People 2020 Target:

The HP 2020 target for breastfeeding at 6 months is 60.6 percent and at 12 months is 34.1 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Centers for Disease Control and Prevention, National Center for Health Statistics, National Immunization Survey.

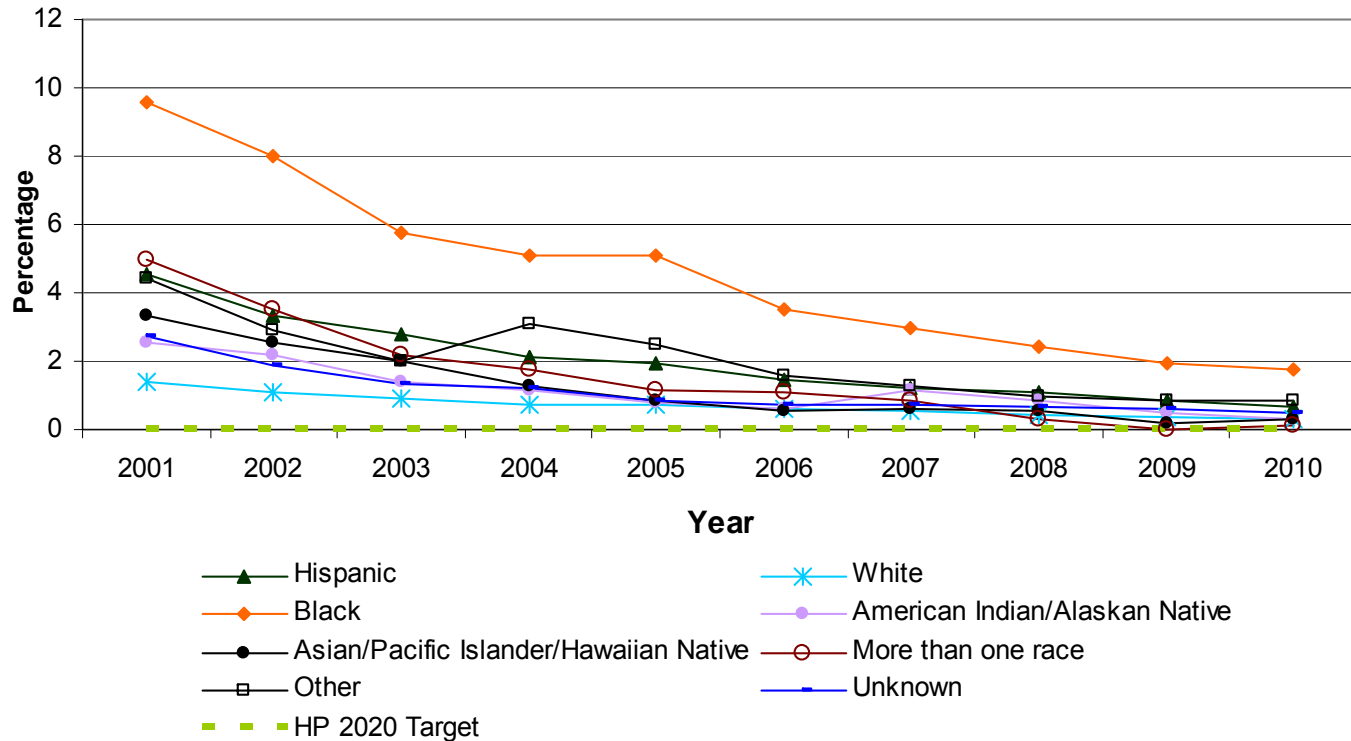
Children's Blood Lead Levels

MICHIGAN

Indicator Definition/Overview:

- Michigan's childhood lead poisoning prevention program was created in response to the federal Lead Contamination Control Act of 1988 and subsequent grant funding from the Centers for Disease Control and Prevention. The program was later written into state law in 1998. Goals of the program include increasing testing of young children for elevated blood lead levels (EBLL), assurance of medical and environmental follow-up for children identified with EBLL, surveillance of childhood lead poisoning to determine the extent of the problem, and education of the public and healthcare providers about childhood lead poisoning.
- If not detected early, lead that accumulates in a child's body and brain may cause anemia, hearing loss, hyperactivity, aggressive behavior, liver and kidney damage, developmental delay, and difficulty with learning due to loss of IQ.
- Note: Hispanic is not a mutually exclusive ethnic category and could include individuals from any race category.

Percentage of Children in Michigan with Elevated Blood Lead Levels, by Race/Ethnicity



Healthy People 2020 Target:
The HP 2020 target is to eliminate elevated blood lead levels in children.

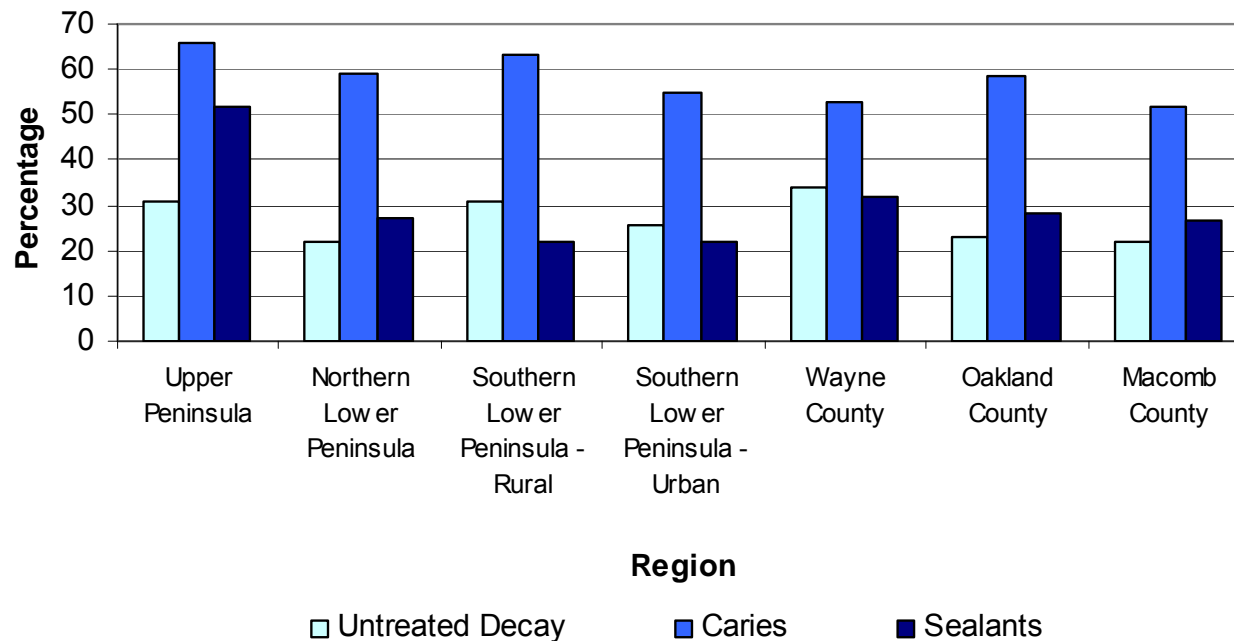
Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
Michigan Department of Community Health Data Warehouse.

Indicator Definition/Overview:

- Tooth decay affects children in the United States more than any other chronic infectious disease.
- Tooth decay is preventable in children through a combination of dental sealants and fluoride.
- In Michigan, the Upper Peninsula has the highest percentage of children who have received sealants.

Percentage of Michigan Third Grade Children with Dental Decay, Caries, and Sealants, 2009-2010



Healthy People 2020 Target:

Healthy People has identified three different targets for three age groups of children. The objective is to reduce the proportion of young children with untreated dental decay in their primary teeth. The targets are to reduce the proportion of children age three to five years to 21.4 percent with untreated decay, age six to nine to 25.9 percent, and age 13-15 to 15.3 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Michigan Department of Community Health, Maternal and Child Health Epidemiology, Oral Health Epidemiology.

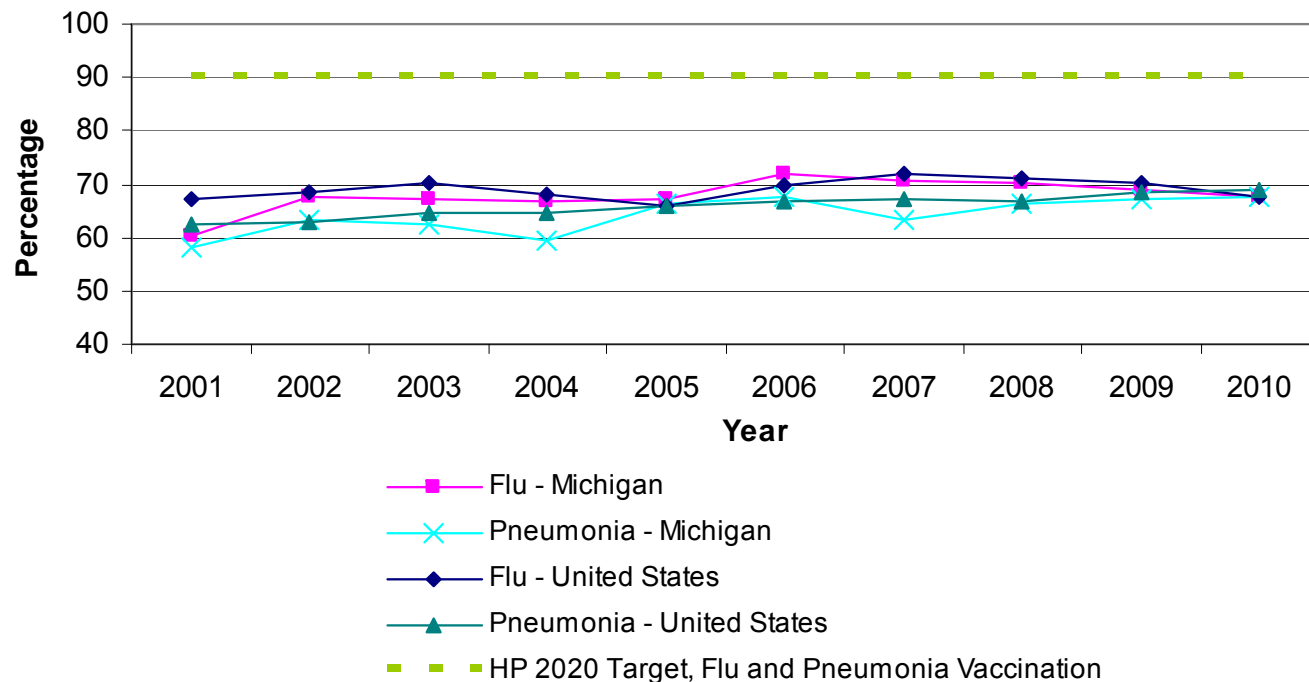
Adult Immunizations

MICHIGAN

Indicator Definition/Overview:

- Rates of severe illness and death from the influenza virus are highest among children less than two years old, people aged 65 years and older and those with chronic medical conditions.
- Pneumococcal disease can result in chronic problems, such as brain damage, hearing loss, limb loss, or death.
- This indicator is measured as the percentage of adults, age 65 years and older, who have had a flu vaccine in the past year and a pneumonia vaccine ever, respectively.

Flu and Pneumonia Vaccination Among Adults Aged 65 Years and Older, Michigan and the United States



Healthy People 2020 Target:
The HP 2020 target for both pneumococcal and flu vaccines in the adult population ages 65 and above is 90 percent.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2001 - 2010.

Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data, 2001 - 2010.

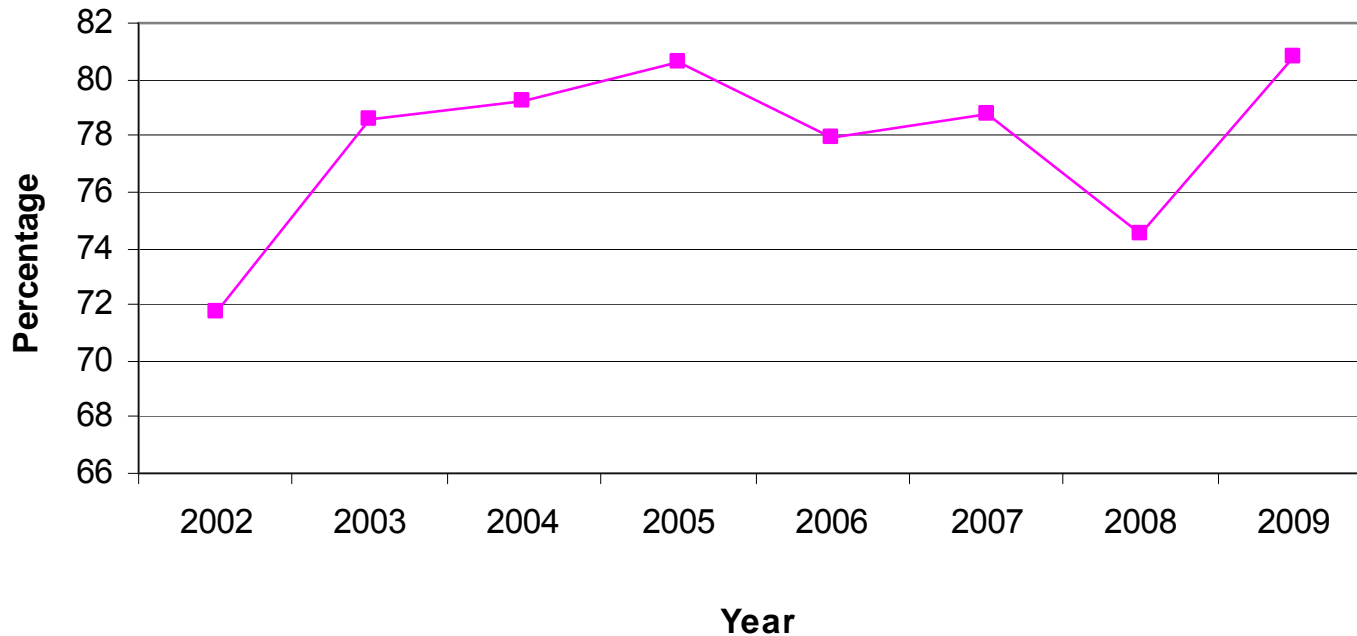
Pediatric Immunizations

MICHIGAN

Indicator Definition/Overview:

- The development of vaccines has resulted in a significant drop in incidence for many infectious diseases. Analyzing vaccination levels among young children is an indicator of how well all age groups are protected from many vaccine-preventable diseases. High rates of childhood immunization are important to protect not only individual children, but also outbreaks of disease among communities.
- Data are obtained from the National Immunization Survey, which counts doses administered, whether valid and administered according to schedule.
- The 4:3:1:3:3:1 series stands for 4 doses of DTaP, 3 polio, 1MMR, 3 Hib, 3 hepatitis B, and 1 varicella.

**Percent of Michigan Children Aged 19-35 Months
Immunized with the 4:3:1:3:3:1 Series**



Healthy People 2020 Target:
A HP 2020 target does not exist for the 4:3:1:3:3:1 series.

Data Source:
Michigan Department of Community Health, Division of Immunization, National Immunization Survey.

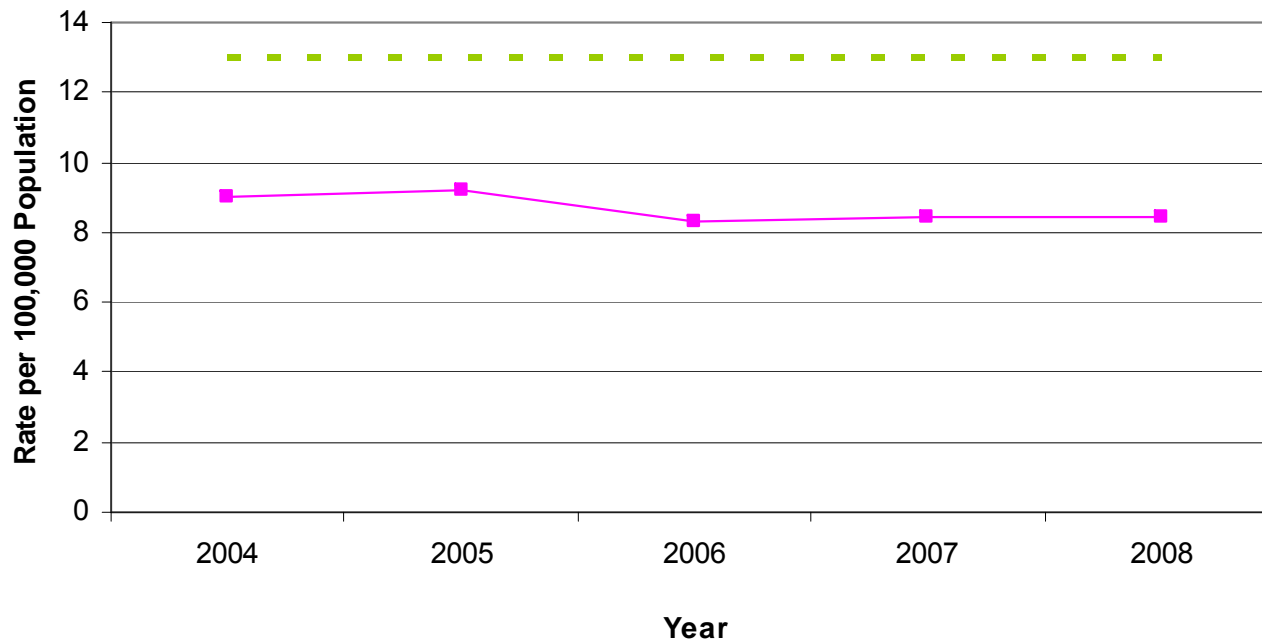
HIV/AIDS – New Diagnoses, Overall

MICHIGAN

Indicator Definition/Overview:

- MDCH estimates that 18,800 people are living with HIV infection in Michigan.
- The higher rate of diagnosis in 2005 is likely due to the implementation of mandatory laboratory reporting, instead of reflecting a true increase in the number of new diagnoses that year.
- These numbers include persons diagnosed with HIV, non-AIDS and those who learned of their HIV infection status after developing symptoms of AIDS.

HIV Diagnosis Rates in Michigan



Healthy People 2020 Target:

The HP 2020 target for new HIV diagnoses is 13 cases per 100,000 population.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Michigan Department of Community Health, HIV/STD/VH/TB Epidemiology Section, Annual Review of HIV Trends in Michigan (2004-2008).

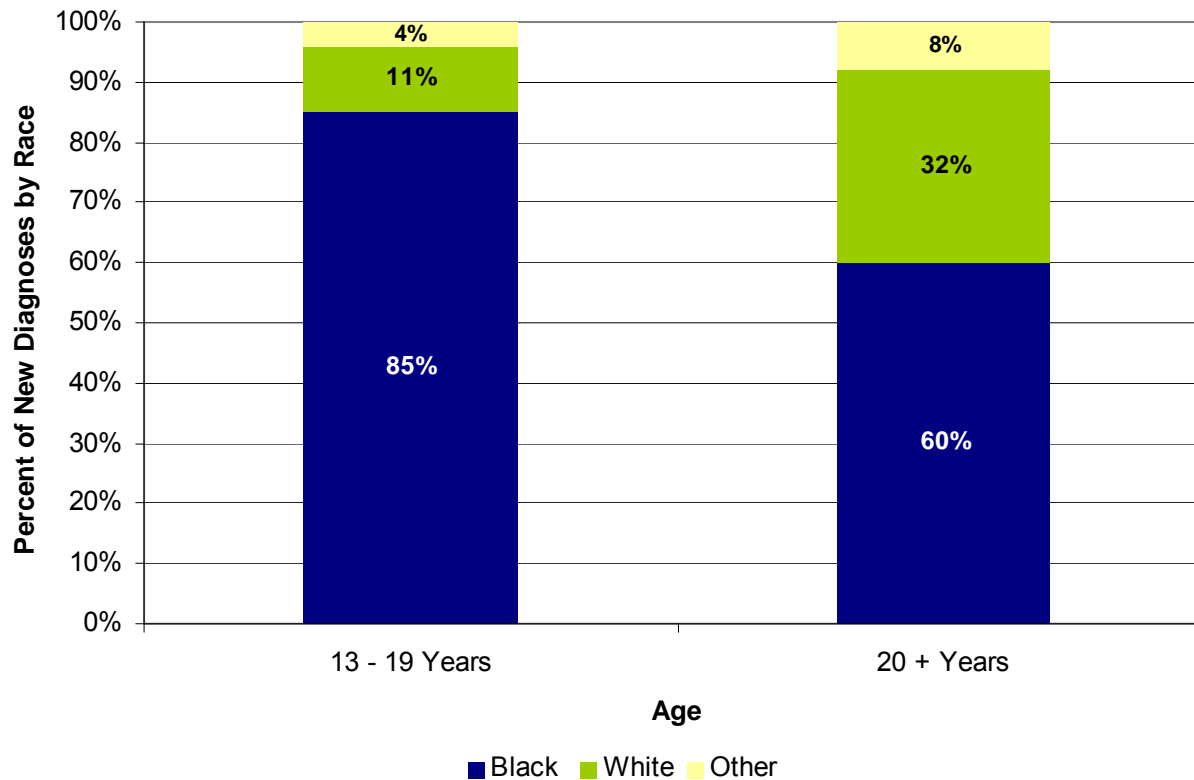
HIV – New Diagnoses, by Race and Age

MICHIGAN

Indicator Definition/Overview:

- Over half of all people living with HIV in the United States at the end of 2006 were men who have sex with men (MSM) or men who have sex with men with a history of injection drug use (MSM-IDU).
- Eighty-five percent of newly diagnosed teenagers in Michigan were black, compared to 60 percent of those aged 20+. Black MSM accounted for 62 percent of these newly diagnosed teenagers.
- Twenty-one percent of newly diagnosed white individuals in Michigan ages 20 and above were MSM, compared with only 5 percent MSM among whites in the 13-19 age group.

New HIV Diagnoses in Michigan by Race and Age



Healthy People 2020 Target:
 HP 2020 targets exist for pure numbers of men who have sex with men and injection drug users. These numbers are national and are not reflected for Michigan on this chart.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
 Michigan Department of Community Health, HIV/STD/VH/TB Epidemiology Section, Annual Review of HIV Trends in Michigan (2004-2008).

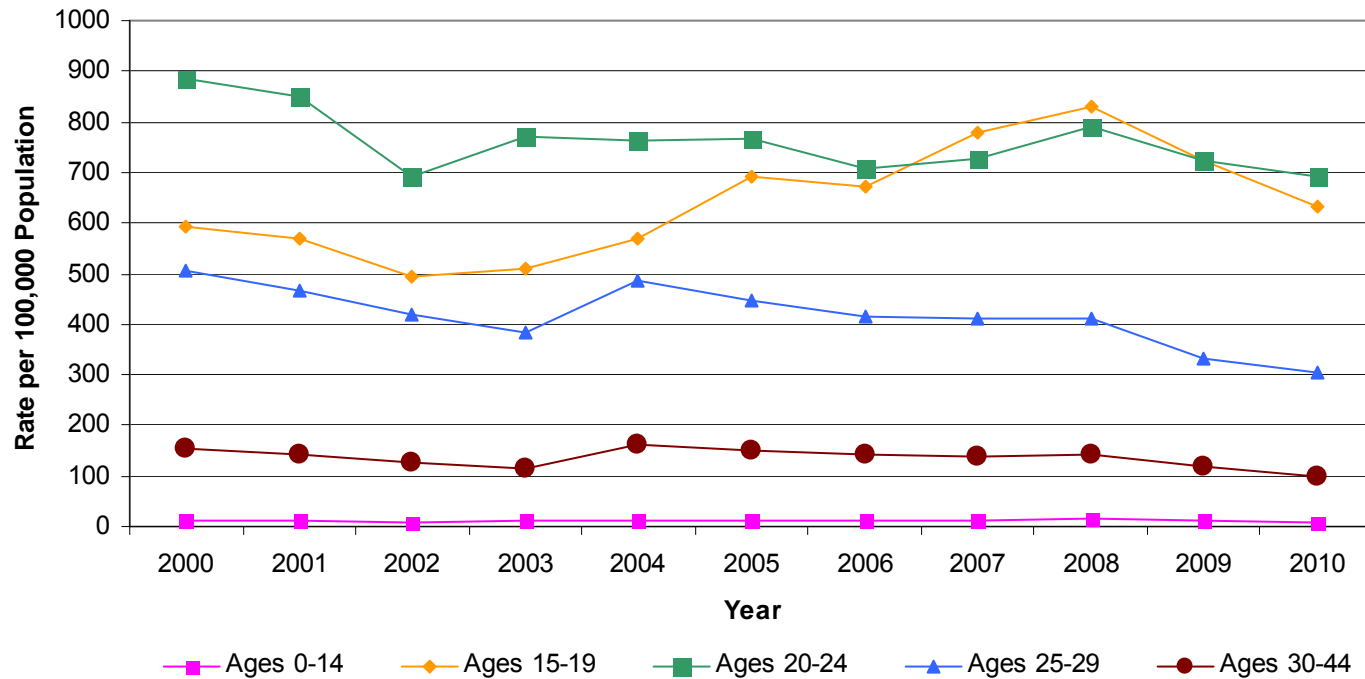
Gonorrhea

MICHIGAN

Indicator Definition/Overview:

- The CDC estimates that less than half of incident gonorrheal infections are reported to them.
- In the United States, sexually active teenagers, young adults, and African Americans report the highest rate of infections.
- Left untreated, gonorrhea increases the chance of having an ectopic pregnancy.

Michigan Gonorrhea Incidence Rates by Age Group



Healthy People 2020 Target:
 The HP 2020 target for females is no more than 257 incident cases per 100,000 population aged 15-44 years be reported per year.
 The HP 2020 target for males is no more than 198 incident cases per 100,000 population aged 15-44 years be reported per year.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
 Michigan Department of Community Health, HIV/STD/VH/TB Epidemiology Section.

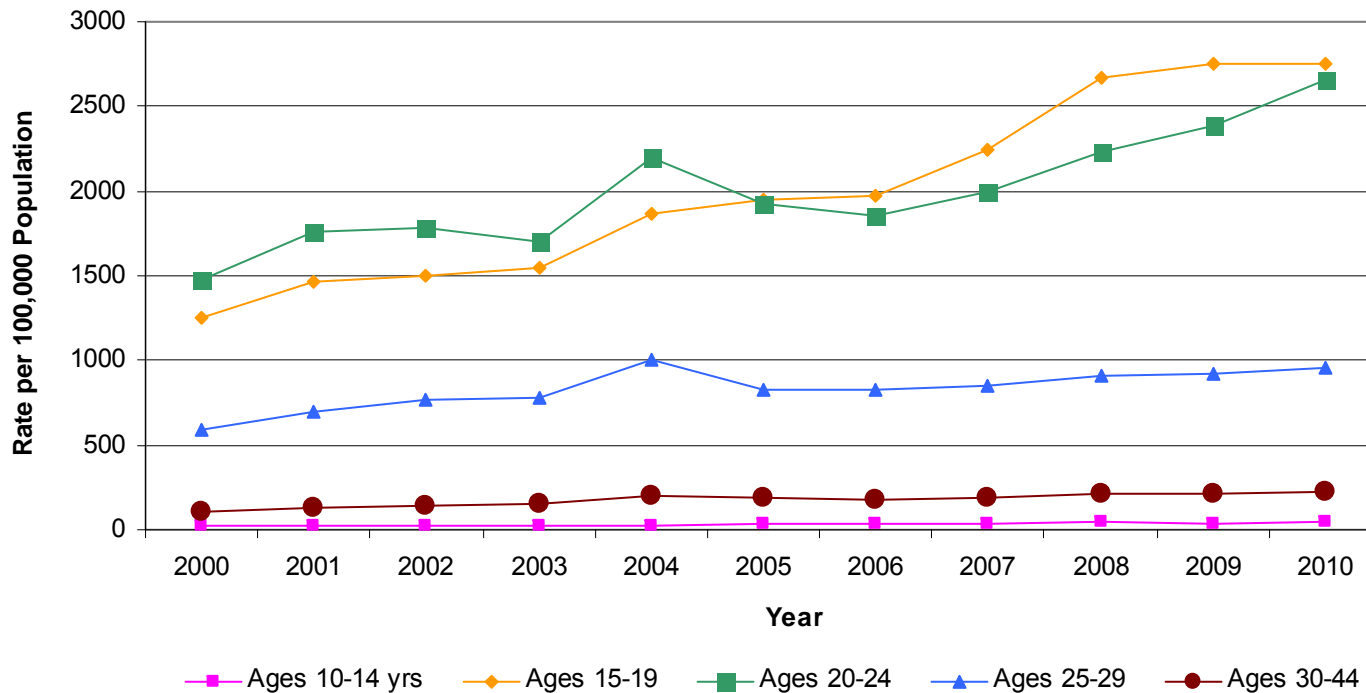
Chlamydia

MICHIGAN

Indicator Definition/Overview:

- Chlamydia is the most commonly reported bacterial sexually transmitted disease in the United States.
- Many people with Chlamydia are not aware of their infection, which means that the true incidence is higher than reported.
- Left untreated, Chlamydia can negatively impact a woman’s ability to have children.

Michigan Chlamydia Incidence Rates by Age Group



Healthy People 2020 Target:
 The HP 2020 target for females is no more than 11.5 percent of the population aged 24 years and under who are enrolled in the National Job Training Network in the last 12 months test positive per year. The HP 2020 target for males is no more than 6.3 percent of the population aged 24 years and under who are enrolled in the National Job Training Network in the last 12 months test positive per year.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
 Michigan Department of Community Health, HIV/STD/VH/TB Epidemiology Section.

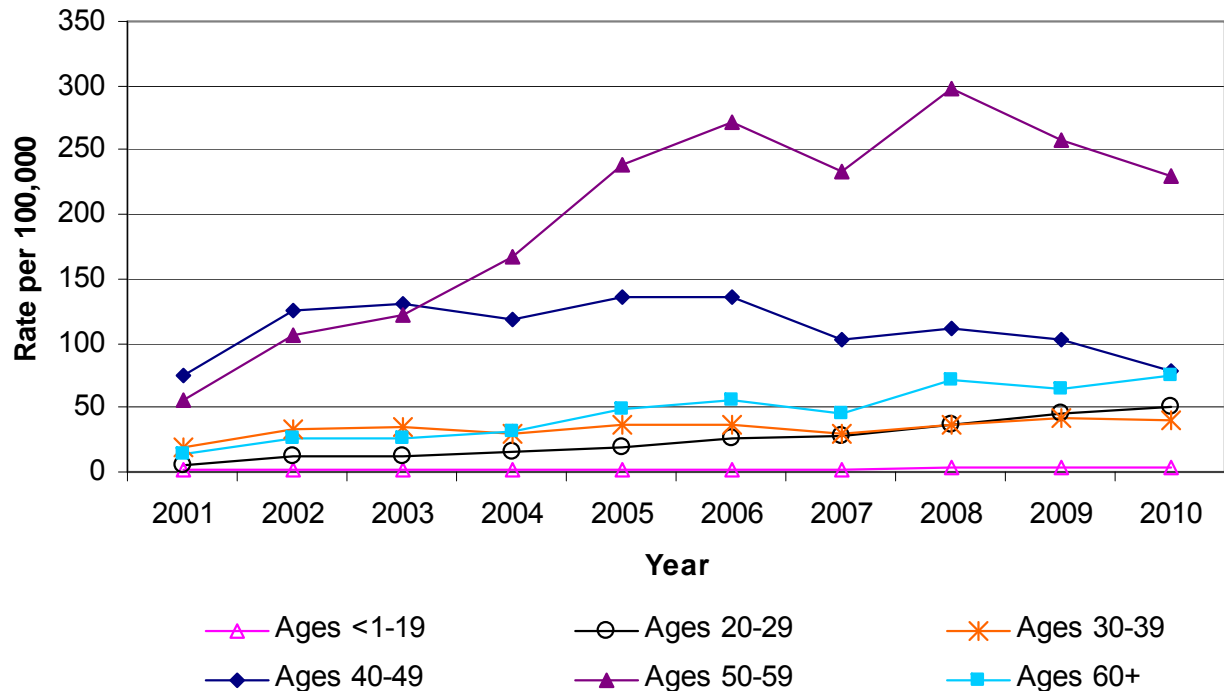
Chronic Hepatitis C

MICHIGAN

Indicator Definition/Overview:

- Hepatitis C is a disease of the liver caused by infection with the hepatitis C virus, in which the majority of infected people will develop chronic, long-term infection. Hepatitis C is the leading indicator for liver transplantation.
- Hepatitis C is primarily transmitted through the sharing of needles, syringes, and other drug paraphernalia during injection drug use. Hepatitis C can also be transmitted during sexual contact, from mother to child during birth, and via occupational exposure to blood. Historically, the virus was transmitted through blood transfusions prior to 1992 and during receipt of blood products developed before 1987.
- An estimated 60 to 70 percent of those currently chronically infected with hepatitis C are unaware of their infection, so the actual disease burden is much higher than the number of cases reported to MDCH. MDCH estimates that approximately 130,000 Michigan residents are chronically infected with hepatitis C. Reported cases of chronic hepatitis C will continue to increase over time as the hepatitis C-infected population ages, becomes symptomatic, and is tested for hepatitis C. Health care costs associated with care for hepatitis C-infected patients are expected to increase substantially in upcoming years.

Chronic Hepatitis C Trends by Age Group in Michigan



Healthy People 2020 Target:
An HP 2020 target does not exist for overall Hepatitis C prevalence. There are HP 2020 targets related to new Hepatitis C diagnoses and the proportion of people who are aware they have the disease.

Data Source:
Michigan Department of Community Health, Michigan Disease Surveillance System.

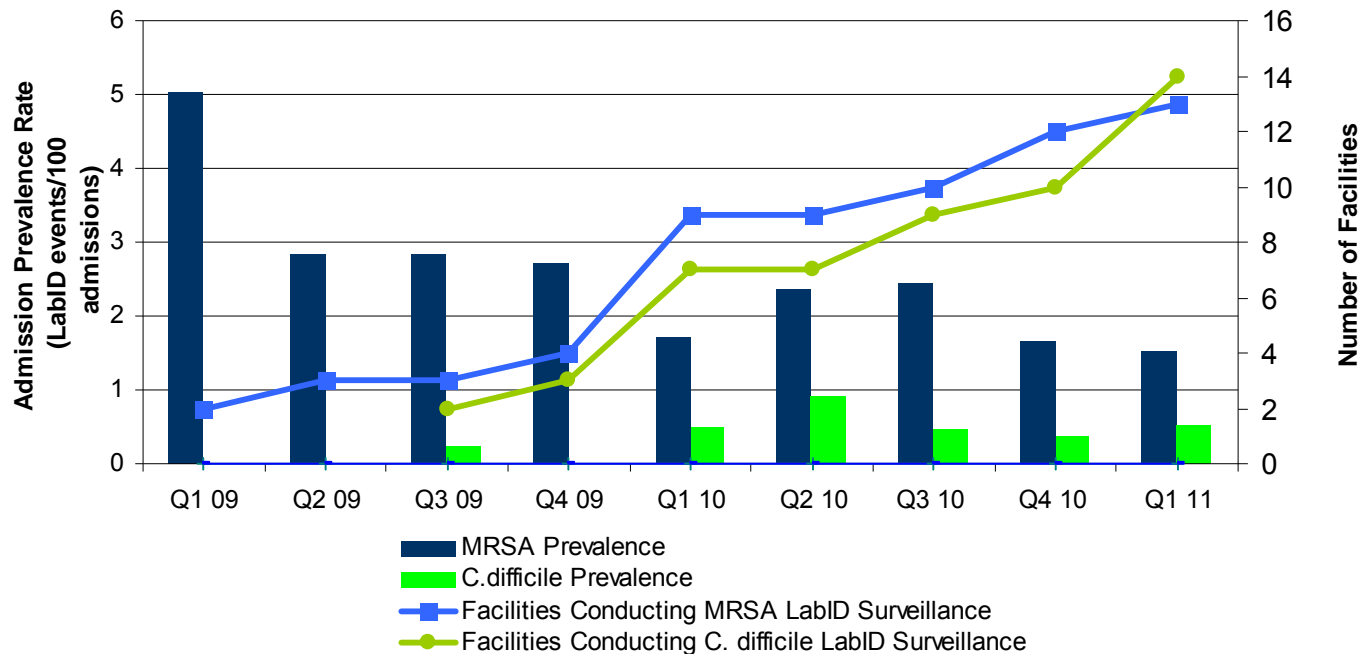
Healthcare-Associated Infections

MICHIGAN

Indicator Definition/Overview:

- National estimates indicate that approximately one out of every 20 hospitalized patients will contract a Healthcare-Associated Infection (HAI), an infection acquired during the course of medical treatment for other conditions.
- Methicillin-resistant *Staphylococcus aureus* (MRSA) is a bacterial infection that is resistant to certain types of antibiotics. Skin is the most common site for MRSA infections. Lungs, bloodstream, and joints may also be infected. *Clostridium difficile* (*C. difficile*) is a bacterial infection that may cause diarrhea, colitis, sepsis, or even death.
- The CDC estimates that HAIs, as of 2007, generate between \$35.7 billion and \$45 billion in medical costs per year.
- This chart represents data from a sample of Michigan hospitals. Hospitals voluntarily share data with the MDCH Surveillance for Healthcare-Associated & Resistant Pathogens (SHARP) Unit. The data represent the number of positive laboratory tests, not the number of infections. The data do not distinguish between infection and situations where an organism is present but not causing illness.

**Methicillin-resistant *Staphylococcus arueus* (MRSA) and *Clostridium difficile* (*C. difficile*)
Laboratory-Identified Admission Prevalence Rate**



Healthy People 2020 Target:
The HP 2020 target for Methicillin-resistant *Staphylococcus Aureus* (MRSA) is 6.56 infections per 100,000 persons.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:
Michigan Department of Community Health, Surveillance of Healthcare-Associated and Resistant Pathogens (SHARP) Unit.

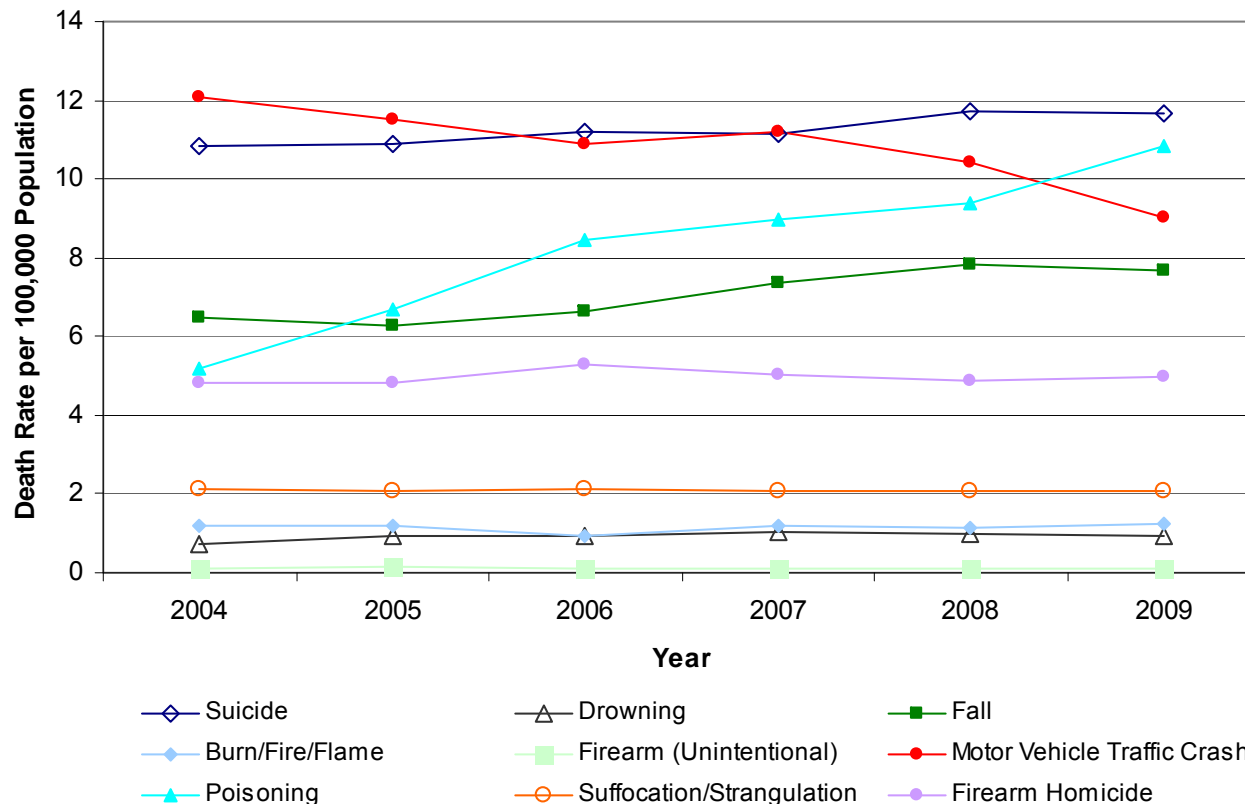
Injury Mortality

MICHIGAN

Indicator Definition/Overview:

- Injuries are a major cause of death and disability in the United States and Michigan.
- Injury death and disability create a large economic burden. The estimated cost of injuries – including medical care and lost productivity – was \$406 billion in 2005.
- Like diseases, injuries and violence are preventable – they do not occur at random. The same scientific methods used to prevent disease are also successfully applied to prevent injuries and violence.

Injury Mortality in Michigan, By Cause, Crude Rates



Healthy People 2020 Target:

HP 2020 targets for fatal injuries are as follows:

- Suicide = 10.2 per 100,000
- Poisoning = 13.1 per 100,000
- Falls = 7 per 100,000
- Suffocation = 1.7 per 100,000
- Drowning = 1.1 per 100,000
- Motor Vehicle Traffic Crash-Related = 12.4 per 100,000

The HP 2020 target for deaths related to residential fires is .86 per 100,000. This chartbook measures all burn/fire/flame as one indicator. The HP 2020 target for firearm-related deaths is 9.2 per 100,000 and does not break deaths into intentional and unintentional.

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Michigan Department of Community Health, Leading Causes of Fatal Injuries.

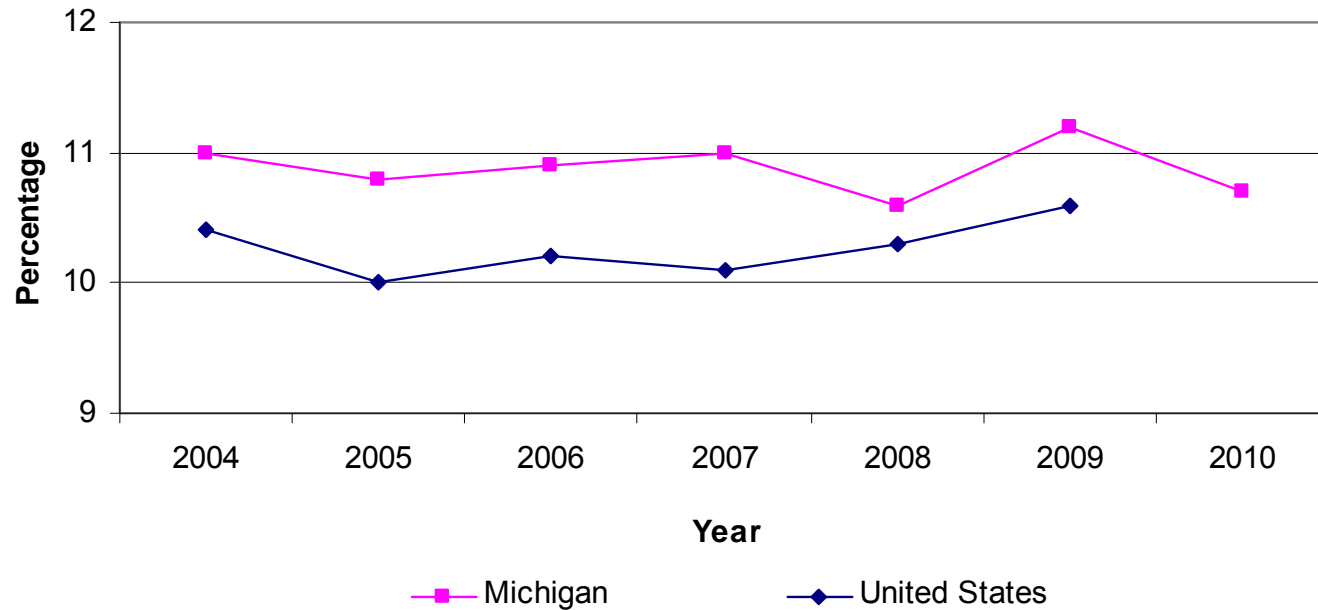
Mental Health

MICHIGAN

Indicator Definition/Overview:

- Forty percent of the top ten leading causes of disability in the United States are mental disorders.
- The National Institute of Mental Health estimates that 25 percent of adults endure a mental health disorder in a given year.
- The cost of untreated mental illness exceeds 100 billion dollars per year in the United States.
- Data were not available for 2010 for the United States.

Percentage of Adults Reporting Poor Mental Health on At Least 14 of the Past 30 Days, Michigan and United States



Healthy People 2020 Target:
An HP 2020 target does not exist for adults reporting poor mental health.

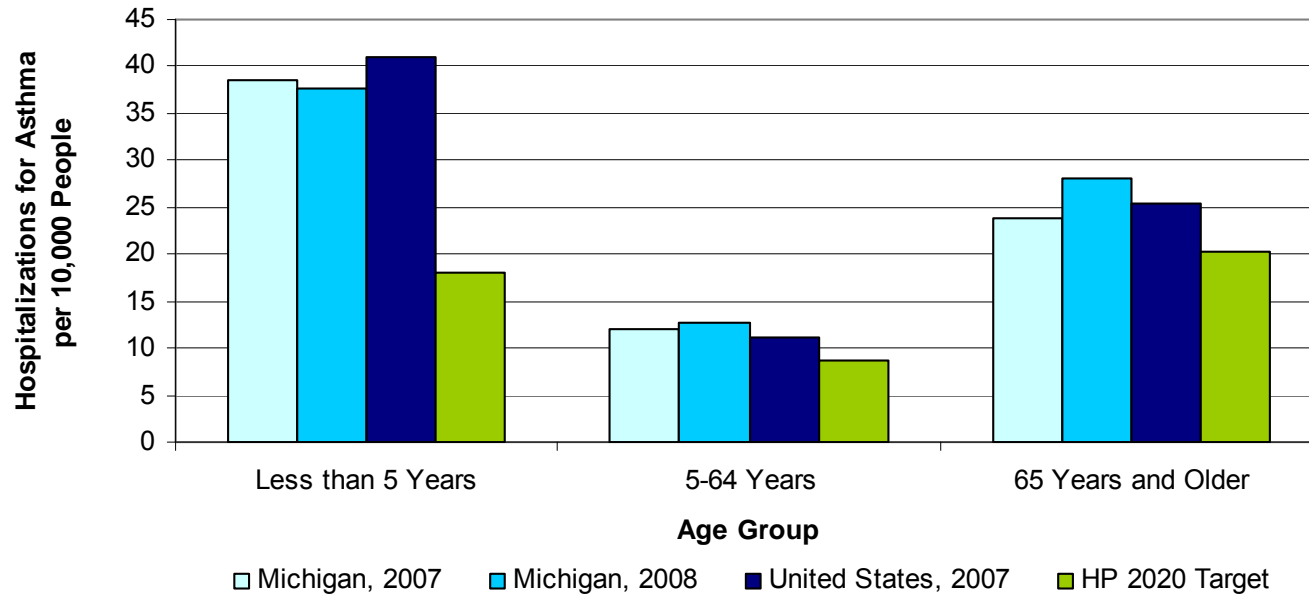
Data Source:
Michigan Department of Community Health, Michigan Behavioral Risk Factor Surveillance System, 2004 - 2009.

Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System Survey Data, 2004 - 2009.

Indicator Definition/Overview:

- Asthma is one of the most common long-term diseases of children.
- Asthma causes episodes of wheezing, breathlessness, chest tightness, and nighttime or early morning coughing.
- Asthma attacks (or episodes) are caused by triggers, such as house dust mites and tobacco smoke among others.

Asthma Hospitalization Rates for Children and Adults, Michigan and the United States



Healthy People 2020 Target:

The HP 2020 target is to reduce hospitalizations for asthma for:

- Children under 5 to 18.1 hospitalizations per 10,000 people
- Children and adults aged 5 to 64 to 8.6 hospitalizations per 10,000 people
- Adults aged 65 and older to 20.3 hospitalizations per 10,000 people

Please note that baseline data for HP 2020 targets may be derived from a different source than is used in this chartbook.

Data Source:

Michigan Department of Community Health, Division of Environmental Health.

Appendix A: Sources for Indicator Overview/Definition

Education	U.S. Census Bureau – Educational Attainment: http://www.census.gov/hhes/socdemo/education/
Primary Care	<p>American Academy of Family Physicians, 2011. http://www.aafp.org/online/en/home/policy/policies/p/primarycare.html</p> <p>Piggott, Kevin, Ann Batdorf-Barnes, Dana Watt, and Dennis Paradis. "Primary Care Is in Crisis." <i>Michigan Primary Care Consortium</i>. http://www.mipcc.org/sites/mipcc.org/files/u4/crisis_part1_web.pdf</p> <p>National Association of Community Health Centers, 2009. http://www.nachc.com/client/documents/pressreleases/PrimaryCareAccessRPT.pdf</p>
Unemployment Rate	<p>U.S. Bureau of Labor Statistics: http://www.bls.gov/bls/unemployment.htm</p> <p>LARA: Labor Market Information: http://www.milmi.org/</p>
Adults and Children in Poverty	University of Michigan National Poverty Center. http://www.npc.umich.edu/
Access to Care	Institute of Medicine, <i>State of the USA Report</i> , 2009.
Uninsured	<p>Kaiser Health News, 2010. http://www.kaiserhealthnews.org/Stories/2010/September/16/census-uninsured-rate-soars.aspx</p>
Leading Causes of Death	Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/nchs/fastats/lcod.htm
Years of Potential Life Lost	Gardner, J. W., and J. S. Sanborn. "Years of Potential Life Lost (YPLL)--what Does It Measure?" <i>Epidemiology</i> 1.4 (1990): 322-29.
All Cancer Sites	<p>Centers for Disease Control and Prevention, 2007. http://www.cdc.gov/nchs/fastats/lcod.htm</p> <p>American Cancer Society, <i>Cancer Facts and Figures</i>, 2010. http://www.cancer.org/acs/groups/content/@epidemiologysurveillance/documents/document/acspc-026238.pdf</p> <p>National Cancer Institute, 2008. http://www.cancer.gov/cancertopics/factsheet/disparities/cancer-health-disparities</p>
Mammogram	National Cancer Institute, 2010. http://www.cancer.gov/cancertopics/factsheet/detection/mammograms

Pap Test	National Cancer Institute, 2010. http://www.cancer.gov/cancertopics/factsheet/detection/Pap-test
Colorectal Cancer Screening	National Cancer Institute, 2008. http://www.cancer.gov/cancertopics/factsheet/detection/colorectal-screening Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/cancer/colorectal/statistics/screening_rates.htm
Cardiovascular Disease	Centers for Disease Control and Prevention, 2007. http://www.cdc.gov/nchs/fastats/lcod.htm Centers for Disease Control and Prevention, 2010. http://www.cdc.gov/chronicdisease/resources/publications/AAG/dhdsp.htm
Diabetes	Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/diabetes/
Obesity	Institute of Medicine, <i>State of the USA Report</i> , 2009.
Childhood Overweight	Daniels, S. R., Arnett, D. K., Eckel, R. H., Gidding, S. S., Hayman, L. L., Kumanyika, S., ...Williams, C. L. (2005). Overweight in children and adolescents: Pathophysiology, consequences, prevention, and treatment. <i>Circulation</i> , 111, 1999-2012.
Nutrition	Institute of Medicine, <i>State of the USA Report</i> , 2009.
Physical Activity	Institute of Medicine, <i>State of the USA Report</i> , 2009.
Smoking	Institute of Medicine, <i>State of the USA Report</i> , 2009.
Binge Drinking	Institute of Medicine, <i>State of the USA Report</i> , 2009.
Controlled Blood Pressure	Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/bloodpressure/
Infant Mortality	Institute of Medicine, <i>State of the USA Report</i> , 2009.
Teen Pregnancy	Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/TeenPregnancy/AboutTeenPreg.htm
Low Birth Weight and Very Low Birth Weight	Health Resources and Services Administration, 2009. http://mchb.hrsa.gov/chusa08/hstat/hsi/pages/202lbw.html Health Resources and Services Administration, 2009. http://mchb.hrsa.gov/chusa08/hstat/hsi/pages/203vlbw.html

Breastfeeding	<p>La Leche League, 2011. http://www.llli.org/nb/nbbenefits.html</p> <p>American Academy of Family Physicians, 2011. http://www.aafp.org/online/en/home/policy/policies/b/breastfeedingpolicy.html</p> <p>Bartick, M. & Reinhold, A. (2010). The burden of suboptimal breastfeeding in the United States: A pediatric cost analysis. <i>Pediatrics</i>, 125(5). http://pediatrics.aappublications.org/content/early/2010/04/05/peds.2009-1616</p>
Lead	<p>Michigan's Childhood Lead Poisoning Prevention Program. http://www.michigan.gov/mdch/0,1607,7-132-2942_4911_4913---,00.html</p> <p>American Academy of Family Physicians, 2000. http://www.aafp.org/afp/20000801/559ph.html</p> <p>Centers for Disease Control and Prevention, 2009. http://www.cdc.gov/nceh/lead/tips.htm</p>
Oral Health	<p>Michigan Department of Community Health, Maternal and Child Health Epidemiology, Oral Health Epidemiology. http://www.michigan.gov/mdch/0,1607,7-132-2942_4911_4912_6226---,00.html</p>
Immunizations	<p>Institute of Medicine, <i>State of the USA Report</i>, 2009.</p>
HIV/AIDS	<p>Michigan Department of Community Health, Bureau of Epidemiology, HIV/STD/VH/TB Epidemiology Section, 2010. http://www.michigan.gov/documents/mdch/MIReport10_Final_325200_7.pdf</p> <p>Centers for Disease Control and Prevention, 2010. http://www.cdc.gov/hiv/topics/msm/index.htm</p>
Gonorrhea	<p>Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/std/Gonorrhea/</p>
Chlamydia	<p>Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/std/chlamydia</p>
Chronic Hepatitis C	<p>Michigan Department of Community Health, Bureau of Epidemiology, HIV/STD/VH/TB Epidemiology Section, 2010. http://michigan.gov/mdch/0,1607,7-132-2940_2955_2976-13105--,00.html</p>
Healthcare-associated Infections	<p>Centers for Disease Control and Prevention, 2011. http://www.cdc.gov/hai/</p>
Injury Mortality	<p>Institute of Medicine, <i>State of the USA Report</i>, 2009.</p> <p>Finkelstein, E.A., Corso, P.S., & Miller, T.R. (2006). <i>Incidence and economic burden of injuries in the United States</i>. New York, NY: Oxford University Press.</p>
Mental Health	<p>National Alliance on Mental Illness, 2011. http://www.nami.org/template.cfm?section=about_mental_illness</p>

Asthma	Centers for Disease Control and Prevention, 2009. http://www.cdc.gov/asthma/fags.htm
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Appendix B
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