

2010

Michigan
Critical Health
Indicators

- Health Outcomes
- Health Related Behaviors
- Health Systems
- Social, Economic,
& Environmental Factors

Michigan
CRITICAL
HEALTH
INDICATORS

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CRITICAL
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What is the Critical Health Indicators report?

The Critical Health Indicators report describes Michigan's health and well-being and establishes a method for monitoring improvement. The report is organized by four categories with 25 related indicators. These indicators directly or indirectly measure the health and health behaviors of Michigan residents. The data reported in this document are based on numbers provided by state and federal sources. Links to state resources have been included to assist the reader interested in more detailed information.

This set of topics and indicators comes in large part from the Institute of Medicine's *State of the USA Health Indicators* report which was released in 2009. Additional indicators include socio-economic status indicators: poverty, unemployment, violence, and education attainment.

The report examines each indicator, providing the most current 10 years of data when available. By considering current trends, state and local health agencies can plan for the future.

What do Critical Health Indicators tell us about Michigan's health?

A broad look at Michigan's critical health indicators suggests there is significant room for improvement in Michigan's population health. For a large portion of health indicators, Michigan's rates are worse than the national average. While many health outcomes measures are trending in the correct direction for Michigan, a greater rate of improvement is needed for Michigan to catch up to the rest of the nation. Impeding Michigan's progress, however, are environmental conditions and chronic disease health characteristics that are trending in the wrong direction.

Factors and indicators which contribute to improved health are moving in the correct direction, including immunizations, preventative services, air quality, and smoking. More children have health insurance coverage and fewer have elevated blood lead levels compared to previous years. High school and college graduation rates increased and violent crime rates decreased. The incidence rates of cancer and syphilis decreased. The broader indicators of life expectancy and infant mortality also moved in the right direction.

Michigan has faced severe economic challenges, reflected through increased unemployment and poverty rates. The number of adults with health insurance coverage decreased, while unmet medical need increased. The overall health care expenditures in Michigan increased. The rates of preventable hospitalizations increased. Obesity, a major factor contributing to chronic disease, rose. The percent of the population suffering from chronic conditions such as diabetes, asthma, and chronic hepatitis C increased. While older women continued to get mammograms at about the same rate, the percentage of women getting pap tests, which impacts a larger age range, decreased.

A few indicators did not change over the past ten years; these include unintended pregnancy, self-reported health status, heart attack, stroke, arthritis, serious psychological distress, new AIDS cases, gonorrhea, binge drinking, adequate fruit & vegetable consumption, and mammography.

A new look at the indicators in the 2010 Critical Health Indicators Report.

One of the major differences between the 2010 Critical Health Indicators report and all of the prior reports is the brevity of each section. The 2009 Report allotted up to four pages per indicator to discuss the overview, trends over time, a comparison to national data, health disparities data, and a plan of action. The prior reports focused on indicators related to program areas. The new report does not necessarily focus on program areas as much, but looks at indicators that may traverse multiple programs. As is the case with life expectancy or self-reported health status, these can be used as indicators to determine and compare overall health in a given area or among different population groups. With the new format, each indicator is limited to a single page overview, or in the case of multiple conditions under a single indicator (i.e., chronic or infectious diseases) two to three pages. Each indicator has one or more website links to related program areas.

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Difference in topic areas from the 2009 to the 2010 Critical Health Indicators Report

The Michigan Critical Health Indicators 2009 report had eighteen different topic areas and forty-two different indicators. The 2010 Critical Health Indicator report decreased the number of topic areas to four: Health Outcomes, Health Related Behaviors, Health Systems, and the Social & Physical Environment. The 2010 Report has twenty-five indicators. Michigan Department of Community Health adapted these changes in response to the preliminary report released by the Institute of Medicine in 2009, which discusses the twenty indicators to be used in the State of the USA Report. A few additional indicators are also included, which were chosen through a review of current priorities in Michigan.

State of the USA Health Indicators

The Institute of Medicine's *State of the USA Health Indicators* report was developed by a committee of 14 individuals varying from physicians, medical school directors, public health school directors, epidemiologists, policy analysts, and health researchers. The committee was charged with developing a set of indicators that would best reflect: 1) the overall health of the nation and the factors that are important in determining the current and future health of the nation and 2) the effectiveness and efficiency of the U.S. health care and public health systems. Also, they were asked to choose indicators that: 1) have quality data available at the national level that can be broken down by subpopulation and geographic region, 2) had reliable data and data sources, 3) are issues relevant to the intended audience, 4) are sensitive to changes in societal domains, and 5) permit cross-country comparisons. The committee reviewed numerous studies and surveys in order to determine which indicators should be used. The committee also reviewed information on the public's perception of issues of importance.

The committee acknowledged that no single measure can capture the health of the nation. Indicators are needed that reflect a broad range of factors such as health, risk for illness, and health system performance. It is intended that official federal statistics will be the initial sources of indicator data. Over time, as new information becomes available and the source of indicator data expands, indicators for the State of the USA Health Indicators Report may change. The framework used by the committee to determine the most important indicators looks at health outcomes and determinants that impact these health outcomes. The topic areas for Social and Physical Environment, Health Related Behavior, and Health Systems all play a part in Health Outcomes. Once the framework was developed, each committee member presented his/her top twenty potential indicators, resulting in over two hundred indicators to be categorized and reviewed. During the elimination process, the committee eliminated or combined similar indicators, looked at available data sources, and tried to balance indicators in health versus health-care categories.

State of the USA Health Indicators by Topic Area:

Health Outcomes	Health Related Behaviors	Health Systems
Life expectancy at birth	Smoking	Health care expenditures
Infant mortality	Physical activity	Insurance coverage
Life expectancy at age 65	Excessive drinking	Unmet medical, dental, and prescription needs
Injury related mortality	Nutrition	Preventative services
Self-reported health status	Obesity	Childhood immunization
Unhealthy days physical and mental	Condom use	Preventable hospitalizations
Chronic disease prevalence		
Serious psychological distress		

State of the USA Health Indicators: Other areas of consideration

One of the important factors in the State of the USA Health Indicators was the ability or flexibility to be able to look at health disparities, drill down to subpopulations, and compare across geographic regions. It was the recommendation of the committee to look at all twenty indicators by sub-population, if the data was available. Due to the variation in data availability for the different indicators, the recommendations of sub-population and/or regional analysis also varies. The committee determined that any indicator that is measured at the individual level can also be analyzed for disparities as long as the data source can be linked to data on race/ethnicity and/or a measure of socioeconomic status (SES). The committee report notes the appropriateness of disparity reporting in each indicator description.

2010 Michigan Critical Health Indicators Trend Direction Over Time

Right Direction	Wrong Direction
Life Expectancy At Birth	Injury Mortality
Life Expectancy At Age 65	Chronic Disease – Diabetes
Infant Mortality Rate	Chronic Disease – Asthma
Chronic Disease - Cancer	Infectious Disease – Chronic Hepatitis C
Infectious Disease – Syphilis	Infectious Disease – Chlamydia
Smoking	Obesity
Adequate Physical Activity	Health Care Expenditures
Children’s Insurance Coverage	Adult Insurance Coverage
Preventative Services – Colorectal Cancer Screening	Unmet Medical Need
Preventative Services – Cholesterol Check	Preventative Services – Pap Test
Immunizations – Pediatric	Preventable Hospitalizations
Immunizations – Adult	Poverty
Air Pollution – Air Quality Index Rating	Unemployment Rate
Educational Rates – High School & College Completion	
Violent Crime Rate	
Lead Poisoning – Children’s Blood Lead Levels (BLL)	
No Change	
Unintended Pregnancy	Serious Psychological Distress
Self-Reported Health Status	Infectious Disease – AIDS
Chronic Disease – Heart Attack	Binge Drinking (Alcohol)
Chronic Disease – Stroke	Adequate Fruit & Vegetable Consumption
Chronic Disease – Arthritis	Preventative Services – Mammograms

2010 Michigan Critical Health Indicators Comparison of Michigan to the United States

Michigan is Better	Michigan is Worse
Injury Mortality Infectious Disease – Syphilis Infectious Disease – AIDS Children’s Insurance Coverage Adult Insurance Coverage Preventative Services – Cholesterol Check Immunizations – Pediatric Educational Rates – High School Completion	Life Expectancy At Birth Life Expectancy At Age 65 Infant Mortality Rate Self-reported Health Status Chronic Disease – Diabetes Chronic Disease – Asthma Chronic Disease – Arthritis Chronic Disease – Cancer Infectious Disease – Gonorrhea
Michigan is the Same as United States	Infectious Disease – Chlamydia
Chronic Disease – Heart Attack Chronic Disease – Stroke Smoking Adequate Physical Activity Adequate Fruit & Vegetable Consumption Health Care Expenditures Preventative Services – Mammogram Poverty	Binge Drinking (Alcohol) Obesity Preventative Services – Pap Test Educational Rates – College Completion (Bachelors Degree) Unemployment Rate Violent Crime Rate Lead Poisoning – Children’s Blood Lead Levels (BLL) Immunizations – Adult
Comparison Not Determined	
Unintended Pregnancy Serious Psychological Distress Infectious Disease – Chronic Hepatitis C Unmet Medical Nee	Preventative Services – Colorectal Cancer Screening Preventable Hospitalizations Air Pollution – Air Quality Index

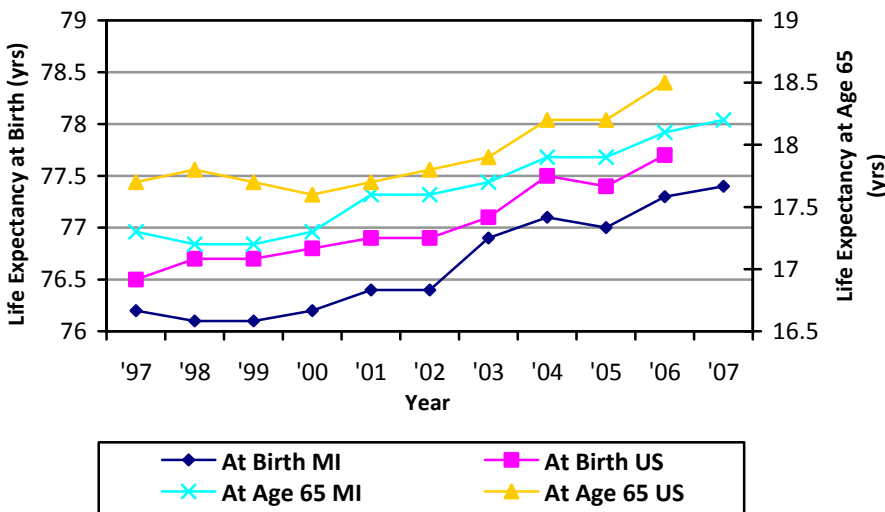
Life Expectancy at Birth and at Age 65

Indicator Definition: Life Expectancy at Birth is the number of years that a newborn is expected to live if current mortality rates continue to apply. Life Expectancy at Age 65 is the number of years of life remaining to a person at age 65 if current mortality rates continue to apply.

Indicator Overview:

- Life Expectancy at Birth is a standard for comparing populations both within countries and internationally. It reflects the overall mortality pattern of a population across all age groups and is often used as an overall measure of the state of a population's general health. Life Expectancy at Birth is also commonly used to identify disparities among populations.
- Life Expectancy at Age 65 is a measure used as a general indicator of the overall health of those over 65, as well as the quality of, and access to, health care services among the elderly. It is also an indicator used to examine inequalities across populations and for international comparisons.

Life Expectancy at Birth and at Age 65, United States and Michigan, 1997-2007



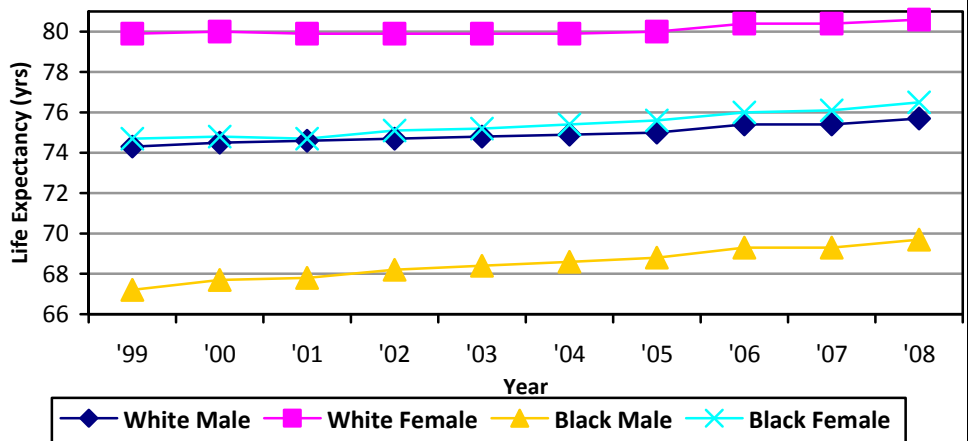
← Trends:

Life expectancy at Birth and Life Expectancy at Age 65 are both trending upward. In 1997, life expectancy at Birth for Michigan and the US was at 76.3 and 76.5, respectively and then increased to 77.3 and 77.7 years by 2006. Similarly, the life expectancy at age 65 increased from 17.3 to 18.1 years in Michigan and 17.7 years to 18.5 years for the US. Michigan residents continue to have a slightly lower life expectancy than the United States population as a whole, both at birth and at age 65.

→ Health Disparities:

Gender and racial disparities continue to exist in life expectancy. White women in Michigan have the longest life expectancy. Black women and white men have a life expectancy of about four years less than white women, while black men have a shorter life expectancy than white women by more than 10 years.

Life Expectancy at Birth by sex and race, Michigan, 1999 - 2008



Links to Other Sources of Information:

FastStats Life Expectancy in U.S., CDC: <http://www.cdc.gov/nchs/fastats/lifexpec.htm>

Life Expectancy at birth by sex and race in Michigan, MDCH: <http://www.mdch.state.mi.us/pha/osr/deaths/lifexrctrend.asp>

Links to Related Public Health Programs:

MDCH: Physical Health & Prevention Programs: http://www.michigan.gov/mdch/0,1607,7-132-2940_2955---,00.html

CDC: Chronic Disease Prevention & Health Promotion: <http://www.cdc.gov/chronicdisease/index.htm>

Health Outcomes - 2

Infant Mortality Rate

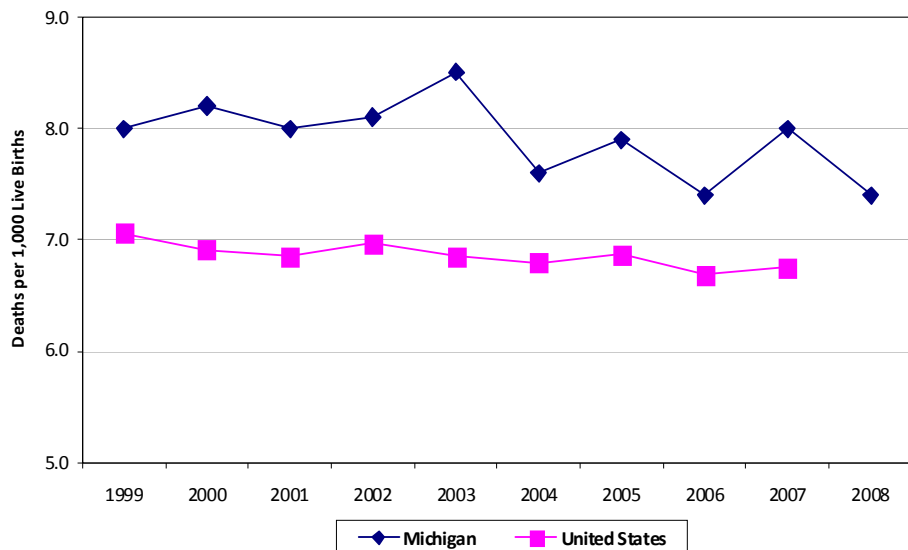
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Indicator Definition: Deaths of infants aged under 1 year per 1,000 live births.

Indicator Overview:

- The infant mortality rate is a leading indicator used to compare populations both within and across countries.
- 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 country.

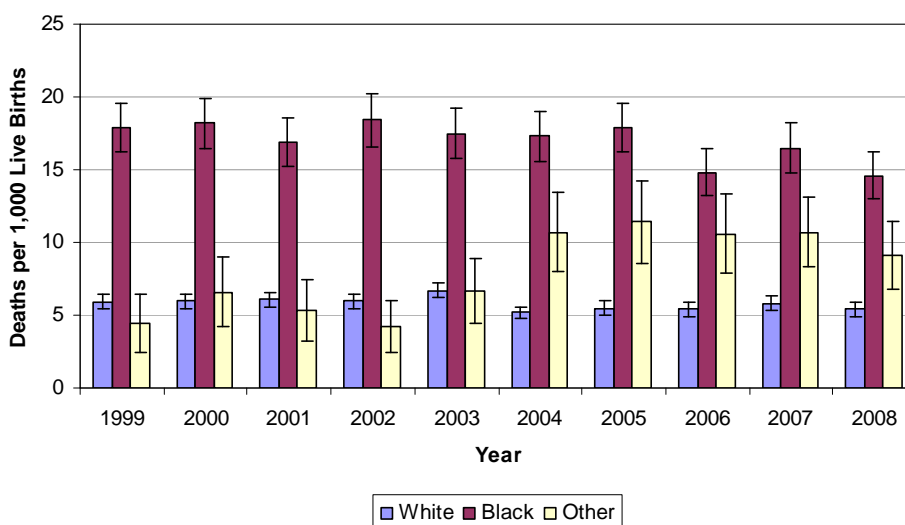
Infant Mortality Rates, Michigan and U.S., 1999-2008



←Trends: In 2008, there were 894 infant deaths in Michigan, resulting in a death rate of 7.4 per 1,000 live births (infant mortality rate – IMR). This is the lowest annual number of infant deaths since the Michigan Department of Community Health (MDCH) started keeping record. During the past 10 years, Michigan’s infant mortality rate has been fluctuating with a decline below 8.0 per 1,000 for the first time in 2004. The rate has remained below 8.0 in 2005 and 2006. 2007 saw an increase back to 8.0 while in 2008 Michigan reached its lowest IMR in the last decade of 7.4. Michigan has consistently higher IMR than the United State for the given years (1999-2006). *Note: all IMR data points in left graph are ± 0.5.*

→Health Disparities: Historically, the Black infant mortality rate is more than two-and-a-half times that of the White infant mortality rate. In 2008, the Michigan infant mortality rate for Black infants was 14.6 per 1,000 live births, while for White infants it was 5.4 per 1,000. 2008 Infant mortality rates are nearly double for unmarried mothers in Michigan; 10.1 per 1000 live births for unmarried mothers compared to 5.5 per 1000 live births for married mothers. Babies born to mothers with inadequate prenatal care had an infant mortality rate of 18.5 in 2008, three times greater than the rate of 5.9 for infants born to mothers with adequate prenatal care.

Infant Mortality Rate by Race, Michigan, 2008



Links to Other Sources of Information:

Infant Mortality Rates in Michigan, MDCH: http://www.michigan.gov/mdch/0,1607,7-132-2944_4669_4694---,00.html

Infant Mortality Rates in US, CDC: http://www.cdc.gov/nchs/fastats/infant_health.htm

Links to Related Public Health Programs:

Infant Mental Health, MDCH: http://www.michigan.gov/mdch/0,1607,7-132-2941_4868_7145-14659--,00.html

Maternal Infant Health Program (MIHP), MDCH: http://www.michigan.gov/mdch/0,1607,7-132-2942_4911_34593-106183--,00.html

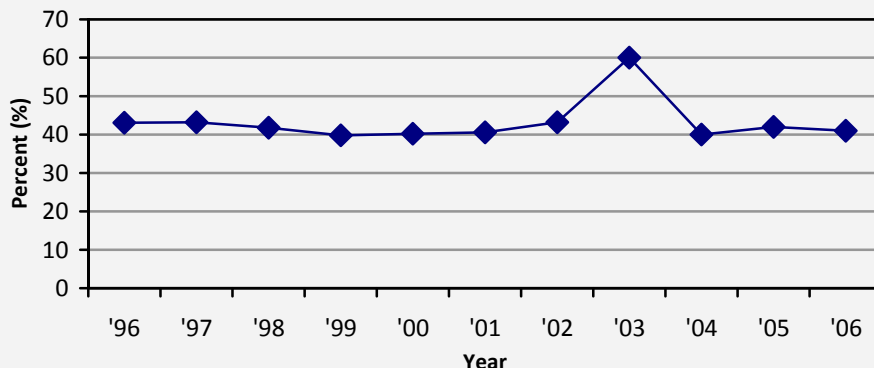
WIC, MDCH: http://mi.gov/mdch/0,1607,7-132-2942_4910--,00.html

Indicator Definition: Pregnancies reported to be either *unwanted* (i.e., they occurred when no children, or no more children, were desired) or *mistimed* (i.e., they occurred earlier than desired).

Indicator Overview:

- In Michigan, 41% of women who gave birth in 2006 reported that they had an unintended pregnancy. Among Michigan’s minority populations, 62% of pregnancies to black non-hispanics were unintended.
- Unintended pregnancies were most likely to occur for women under 25 years of age, in racial/ethnic minorities, with limited education, and with no health insurance. Over two-thirds of unintended pregnancies nationwide were to women in their teens and twenties.
- Increasing the number of intentional pregnancies results in healthier pregnancies, healthier babies, and enhanced child development. Children of unintended pregnancy are more likely to be low-birthweight, experience pre-term birth, and have developmental and cognitive challenges. Women who have had an unintended pregnancy are more likely to live in poverty, begin prenatal care later, and experience the dissolution of their relationship with partners.

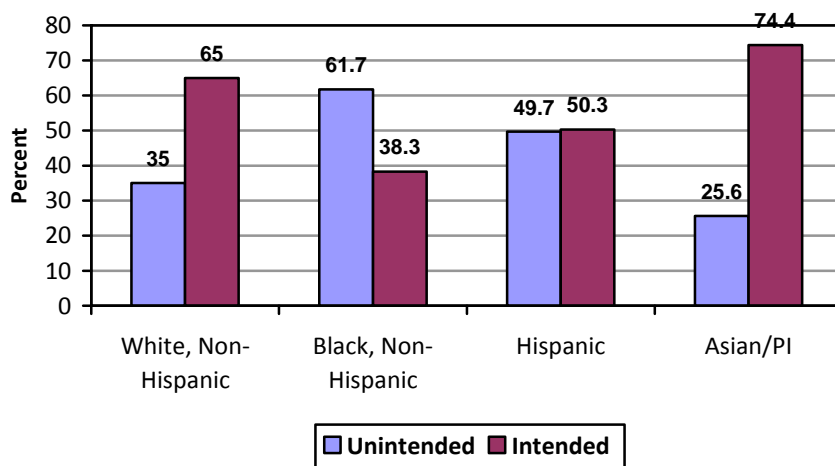
Trends of unintended pregnancies in Michigan, 1996-2006



← **Trends:** According to PRAMS data, Michigan’s unintended pregnancy rate has not changed significantly since 1990; 43% in 1990 versus 41% in 2006. Nearly half of women who had an unintended pregnancy reported not using a contraceptive method. And while teen pregnancy rates have generally improved since the 1990s, one in twenty teens still becomes pregnant by age 20 (about 5%). At least three-fourths of teen pregnancies are unintended.

→ **Health Disparities:** Unintended pregnancy rates are higher among certain groups of women including black and Hispanic women and women living at or below 200% of the federal poverty level. Both maternal age and educational status are directly proportional to pregnancy intendedness.

Intended and Unintended Pregnancies by Maternal Race/Ethnicity, 2006



Links to Other Sources of Information:

Michigan Pregnancy Risk Assessment Monitoring (PRAMS): www.michigan.gov/prams
National Campaign to Prevent Teen and Unplanned Pregnancy: www.thenationalcampaign.org

Links to Related Public Health Programs:

Michigan’s Family Planning Program: www.michigan.gov/familyplanning
Michigan Teen Pregnancy Prevention Initiative: www.michigan.gov/tppi

Health Outcomes - 4 Injury Mortality

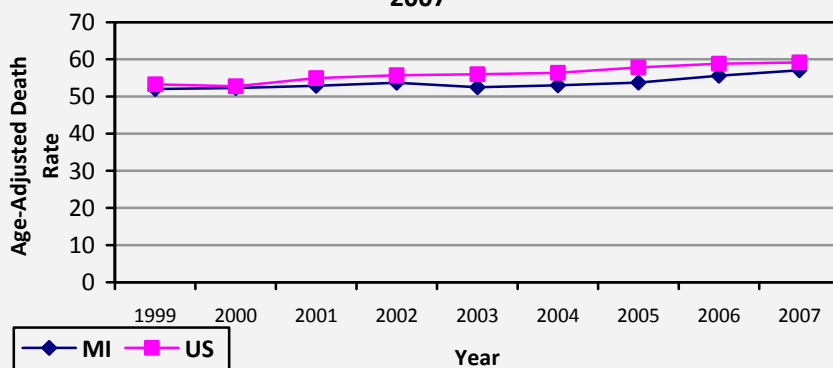
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Indicator Definition: Age-adjusted mortality rates (deaths per 100,000 population) due to injuries. (Age-adjusted to Year 2000 Standard Population.)

Indicator Overview:

- Injuries are a major cause of death and disability in the United States and worldwide.
- As of 1999, mortality data has been recorded using the *International Classification of Disease-10th Revision (ICD-10)*. Data prior to 1999 was coded using a different classification system (ICD-9) and can be difficult to compare with more recent data.
- Injury death and disability create a large economic burden. Costs for lifetime medical treatment for those injured in 2000 in the United States are estimated to total \$80 billion with an additional cost of \$346 billion in lost productivity.

Injury Death Rates per 100,000, Michigan and US, 1999-2007

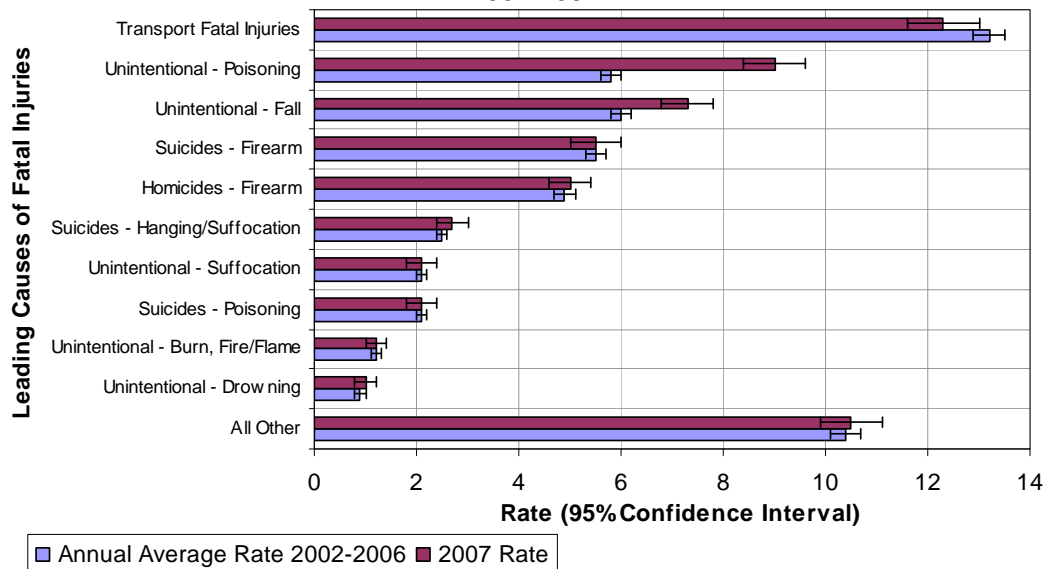


← **Trends:** Compared to the U.S., Michigan had lower age-adjusted death rates from 1999 through 2007. In the last five years of this period there was a greater difference between the U.S. and Michigan's rates. This stemmed from Michigan seeing a decrease in age-adjusted rate between 2002 and 2003 while the U.S. rate continued to rise. As of 2007 Michigan's age-adjusted death rate for injuries was 57.03 while the US rate was 59.14.

→ **Additional Information:**

Pictured at right are the top ten leading causes of injury death for Michigan residents among all ages and both sexes. Transportation injuries are the number one cause of injury death. These include injuries involving aircraft, watercraft, motor vehicle, railway, and other road vehicles (excluding intentional or undetermined deaths). In 2007, rates for unintentional falls and especially unintentional poisonings significantly exceeded the previous five-year average.

Death Rate Per 100,000 Michigan Residents, Both Sexes, All Ages, 2002-2007



Links to Other Sources of Information:

Fatal Injury Data, CDC: <http://www.cdc.gov/injury/wisqars/fatal.html>
 Leading Causes of Fatal Injuries, MDCH: <http://www.mdch.state.mi.us/pha/osr/index.asp?id=29>

Links to Related Public Health Programs:

Injury and Violence Prevention, MDCH: <http://www.michigan.gov/injuryprevention>
 National Center for Injury Prevention and Control, CDC: <http://www.cdc.gov/injury/index.html>

Health Outcomes - 5

Self-reported Health Status

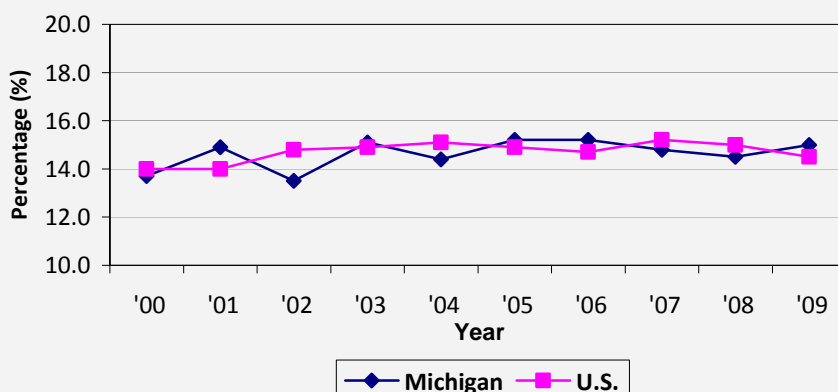
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Indicator Definition: Percentage of adults reporting fair or poor health.

Indicator Overview:

- Self-reported health status is a common measure used in public health surveys. In addition to representing physical, emotional, and social aspects of health and well-being, the self perception of health is a good indication of the burden of disease.
- The self-reported health status indicator complements the life expectancy indicator, which has sometimes been criticized as placing too much importance on **quantity** of life and not enough on **quality** of life.
- A study conducted by Miilunpalo et al. (1997) found that, for middle-aged populations, self-reported health assessments are valid health indicators.

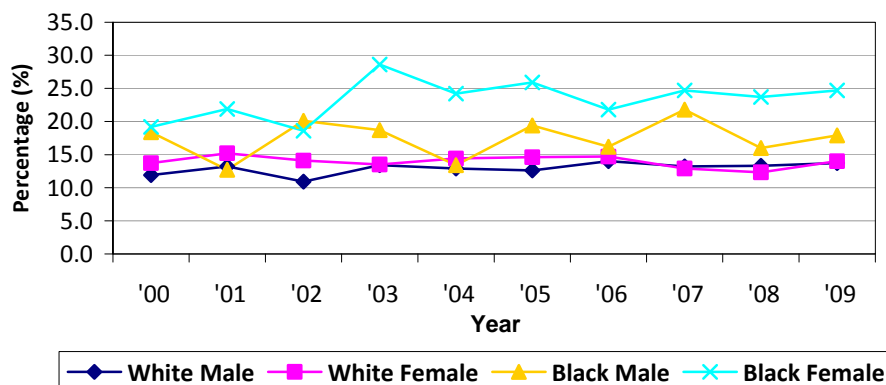
**General Health, Fair or Poor
Michigan and United States, 2000-2009**



← **Trends:** The percentage of adults who report fair to poor general health status has remained relatively stable over the past ten years for both Michigan and the United States. The trend shows that Michigan and the U.S. have had similar rates over the last ten years. Currently, Michigan adults (15.0%) have a slightly higher rate of fair to poor general health when compared to the nation as a whole (14.5%).

→ **Health Disparities:** Both gender and racial disparities in the prevalence of fair to poor general health continue to exist within Michigan's adult population, particularly among Blacks. Both Black men and women have reported higher rates of fair to poor general health when compared to White men and women. Rates of fair to poor general health are similar for White men and women.

**General Health, Fair or Poor by Race and Gender
Michigan, 2000-2009**



Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs)
Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)

Links to Related Public Health Programs:

US Department of Health & Human Services: Community Health Status Indicators: <http://communityhealth.hhs.gov/homepage.aspx?i=1>

Health Outcomes - 6

Chronic Disease Prevalence

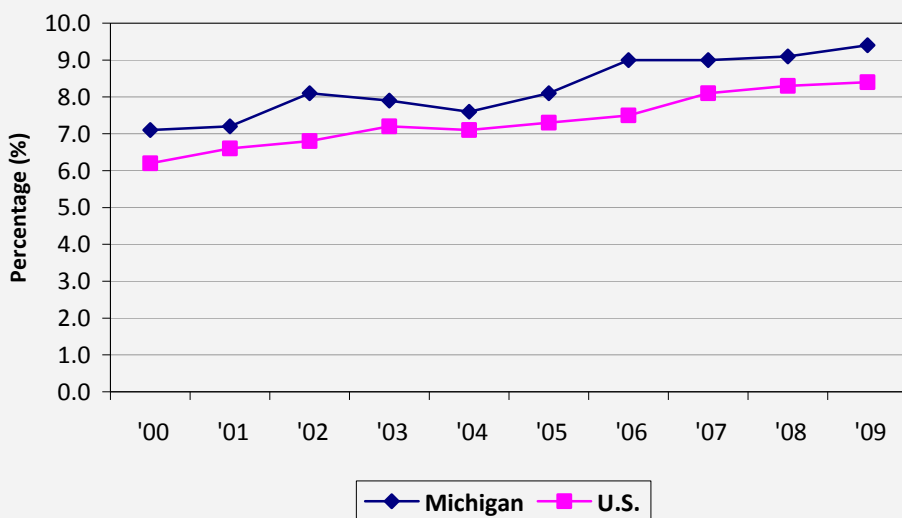
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Indicator Definition: Percentage of adults with chronic diseases (diabetes, cardiovascular disease, asthma, cancer, and arthritis).

Indicator Overview:

- Chronic diseases accounts for 70 percent of all deaths in the United States each year and are a leading cause of disability. About 25 million people, nearly 1 in 10 Americans, suffer major limitations in daily living due to chronic disease.

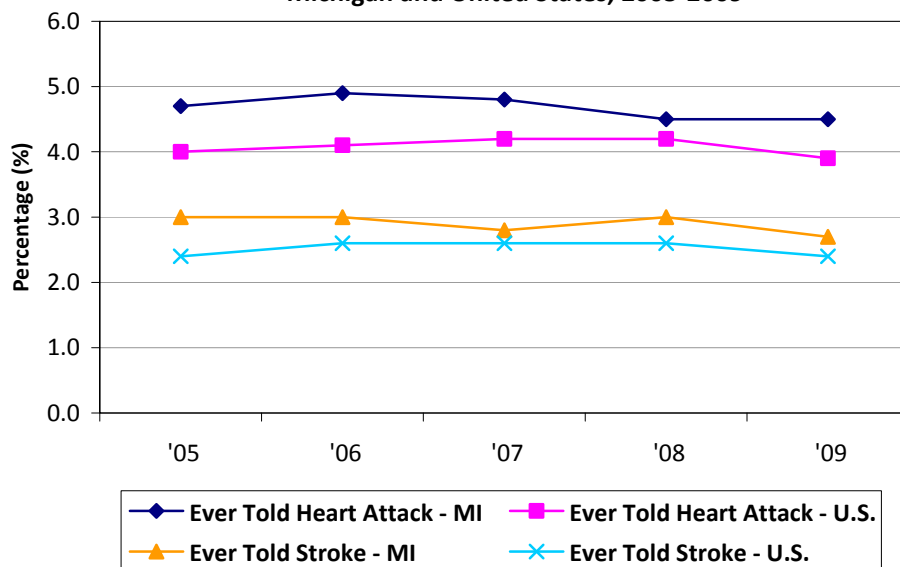
Ever Told Diabetes
Michigan and United States, 2000-2009



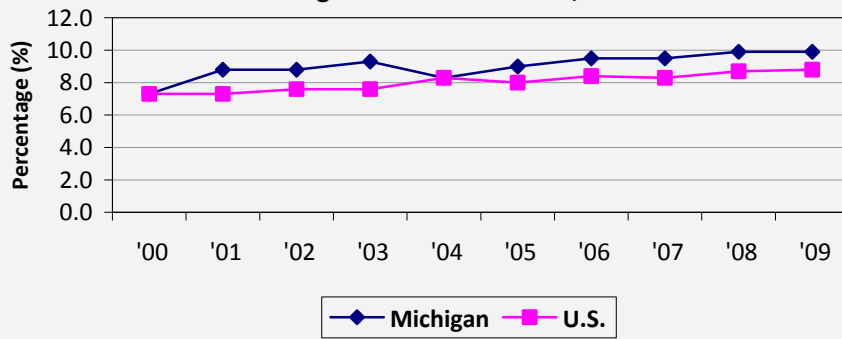
← **Trends:** The prevalence of diabetes in Michigan and the United States has been steadily increasing over the past 10 years. In each of the past 10 years, the prevalence of diabetes in Michigan has been greater than that of the nation as a whole. In 2009, 9.4% of Michigan adults reported ever being told by a doctor that they had diabetes, compared to 8.4% of U.S. adults. Additionally, African-Americans in Michigan had a higher diabetes burden in 2009 (12.6%) compared to White, non-Hispanics (8.6%).

→ **Trends:** The prevalence of heart attack and stroke in the U.S. has remained relatively stable over the past several years. Michigan adults have reported a slightly higher prevalence of heart attack when compared to the nation as a whole in the last five years, while the prevalence of stroke among Michigan adults follows similar trends as the national prevalence.

Cardiovascular Disease
Michigan and United States, 2005-2009



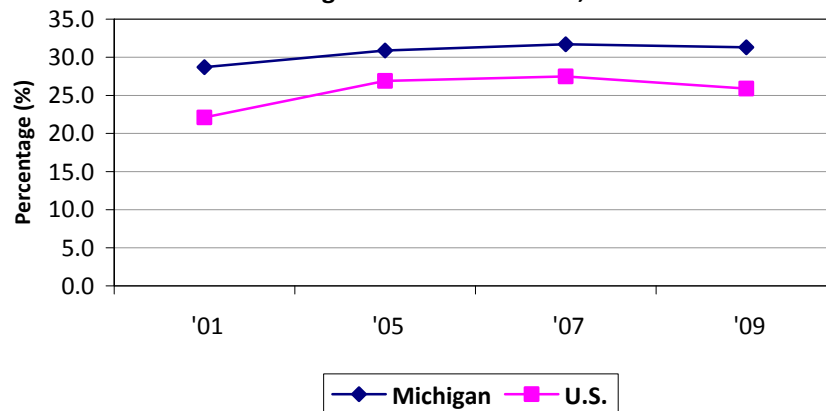
**Current Asthma
Michigan and United States, 2000-2009**



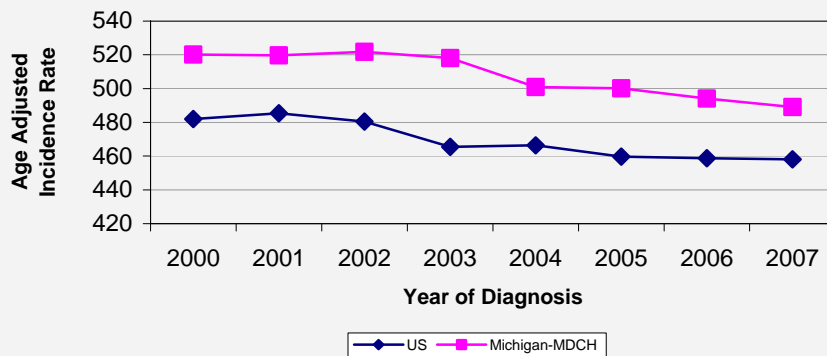
← **Trends:** The prevalence of current asthma in Michigan and the United States has been steadily increasing over the past 10 years. In each year of the past 10 years, except 2004, the prevalence of current asthma in Michigan has been greater than that of the nation as a whole. In 2009, 9.9% of Michigan adults reported being told by a doctor that they currently have asthma, compared to 8.8% of U.S. adults.

→ **Trends:** The prevalence of adults who were ever told by a doctor that they had some form of arthritis has remained relatively stable over the past few years, for both Michigan and the U.S. In addition, the prevalence of arthritis among Michigan adults has been greater than the national prevalence for the past several years. In 2009, 31.3% of Michigan adults reported ever being told that they had some form of arthritis, compared to only 25.9% of U.S. adults.

**Ever Told Arthritis
Michigan and United States, 2001-2009**



**Incidence, Michigan vs. United States, All Cancer Sites,
All Races, All Ages, Both Sexes: 2000-2007**



← **Trends:** The incidence rate of cancer has been declining in Michigan and in the U.S. overall. Since 2000, the rate of incidence has dropped from 520 per 100,000 people down to less than 490 people. During this same time, the incidence rate for the U.S. has dropped from 482 to 458. The rate of incidence in Michigan is higher than the U.S. rate, but has remained parallel to it since 2000.

Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs)
 Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
 Michigan Public Health Institute and Michigan Department of Community Health. *The Cancer Burden in Michigan: Selected Statistics 1992-2010*. September 2010. <http://www.michigancancer.org/PDFs/MCCReports/CancerBurden-Sept2010/AllSections.pdf>
 Michigan-MDCH Incidence data: <http://www.mdch.state.mi.us/pha/osr/Cancer/stateinc.asp?CDxID=IncTrendsTotal>

Links to Related Public Health Programs:

MDCH: Physical Health & Prevention Programs: http://www.michigan.gov/mdch/0,1607,7-132-2940_2955---,00.html
 CDC: Chronic Disease Prevention & Health Promotion: <http://www.cdc.gov/chronicdisease/index.htm>

Health Outcomes - 7

Serious Psychological Distress

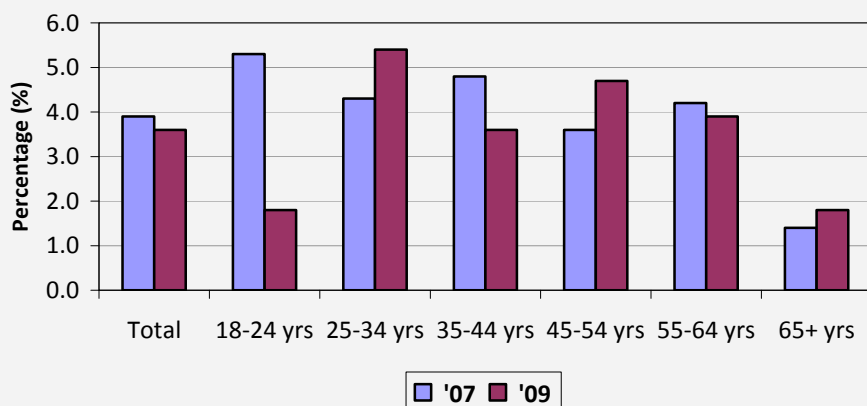
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Indicator Definition: Percentage of adults with serious psychological distress as indicated by a score of > 13 on the K6 scale.

Indicator Overview:

- Serious Psychological distress is an important individual and population health issue.
- Depressive disorders, if untreated, become chronic and are expected, by the year 2020, to be exceeded only by heart disease in contributing to the global burden of diseases.
- The Kessler 6 (K6) Scale was developed for the National Health Interview Survey (NHIS) to distinguish cases of nonspecific psychological distress. The scale ranges from 6 to 30. For the purposes of the BRFSS any score greater than or equal to thirteen is considered serious psychological distress. The BRFSS is working out how to derive serious mental illness (smi) from the score on the questionnaire.

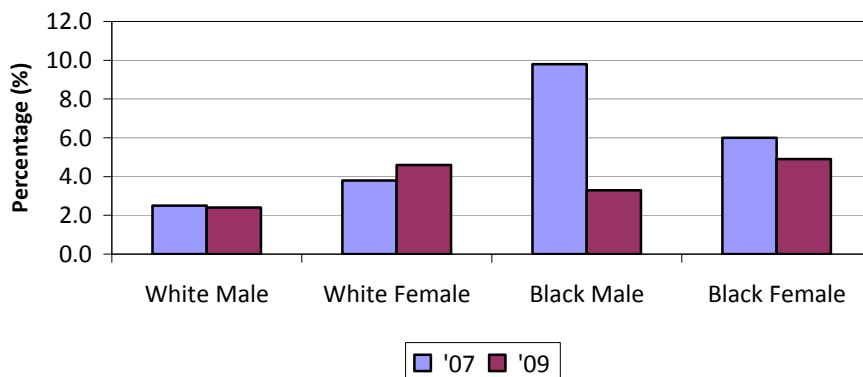
Serious Psychological Distress by Age
Michigan, 2007 and 2009



← **Trends:** Michigan-specific data focusing on Serious Psychological Distress was collected in 2007 and 2009. The overall percentage of adults with serious psychological distress was similar in 2007 and 2009. In 2007, the prevalence of serious psychological distress was highest among 18-24 year olds, while in 2009 serious psychological distress was most prevalent within the 25-34 year old age category. For the most part, the prevalence of serious psychological distress decreased with increasing age of the population.

→ **Health Disparities:** Black males reported the highest rate of serious psychological distress in 2007, but reported a much lower rate in 2009. Overall, females appear to have slightly higher rates of serious psychological distress when compared to males. Black females reported higher rates of serious psychological distress than white females in both 2007 and 2009.

Serious Psychological Distress by Race and Gender
Michigan, 2007 and 2009



Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2007 and 2009. (www.michigan.gov/brfs)
A Resource Guide for Families dealing with Mental Illness: http://www.michigan.gov/documents/MDCH-MentalIllness-10AUG04_102671_7.pdf

Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)

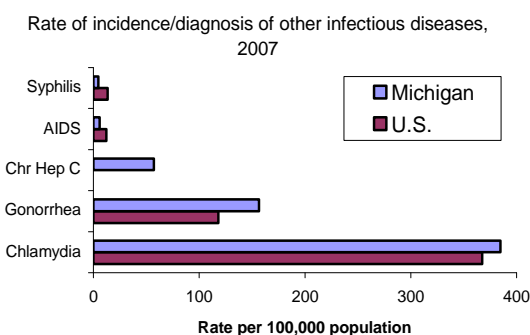
Links to Related Public Health Programs:

MDCH Mental Health Programs & Practices for Adults: http://www.michigan.gov/mdch/0,1607,7-132-2941_4868_38495---,00.html

Indicator Definition: Annual rate of new cases of chronic hepatitis C, HIV/AIDS, and other Sexually Transmitted Infections (STIs) such as Chlamydia and Gonorrhea.

Indicator Overview:

- Infectious diseases are spread throughout populations as a result of contact with the infectious agent, for example through blood exposure or unprotected sex. A subset of these cannot be prevented by vaccination. Rates of these types of diseases reflect a population’s knowledge and hygiene practices.



MI to U.S. Comparison

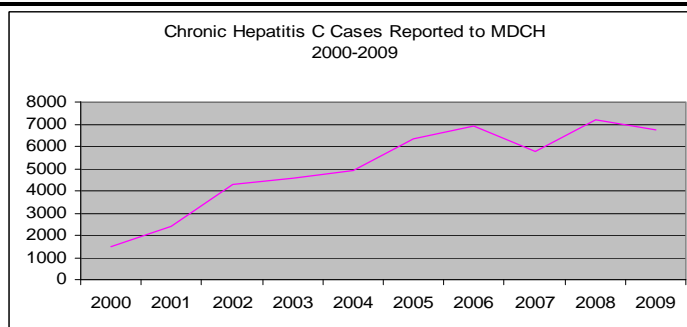
The picture of infectious diseases, other than those that are vaccine preventable, in the U.S. and Michigan are similar. Chronic hepatitis C is not a nationally reportable disease. The rate of infection of Gonorrhea and Chlamydia is higher in Michigan than the U.S., however the rates of infection and diagnosis of Syphilis and AIDS are higher nationally.

Chronic Hepatitis C

Hepatitis C is a disease of the liver caused by infection with the hepatitis C virus, in which the newly acquired (or acute) infection can progress to a chronic, long-term infection. Fifteen to 25% of those acutely infected will resolve the infection on their own. However, the majority of infected people will develop chronic infection. Chronic hepatitis C infection can progress to fibrosis, cirrhosis, end-stage liver disease and death. Ten to 20% of those chronically infected will develop cirrhosis within 20 to 30 years after 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.

	2009 reported cases of chronic hepatitis C, rate per 100,000
Total	68
Gender	
Male	91
Female	45
Race	
African American	71
American Indian	63
Asian/Pacific Islander	16
Caucasian	28
Age	
0-19	4
20-24	39
25-29	49
30-34	40
35-39	41
40-44	67
45-49	138
50-54	236
55-59	282
60-64	150
65-69	69
70 and over	24

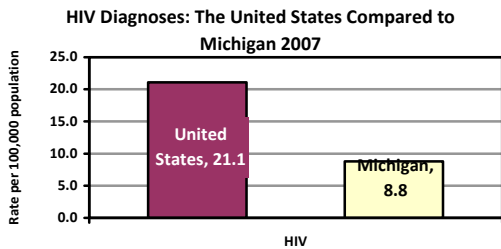


If the Trend Continues

An estimated 60 to 70% 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. Using data from the NHANES study, the Centers for Disease Control and Prevention estimate that 1.3% of the U.S. population is chronically infected with hepatitis C. Therefore, 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.

HIV/AIDS

Two strains of HIV infect humans: HIV-1 and HIV-2. HIV-1 is more virulent and more easily transmitted; it is the source of the majority of HIV infections throughout the world. HIV-2 is less easily transmitted and is largely confined to Africa. The most prevalent mode of transmission of HIV is from men who have sex with men (MSM), however transmission from heterosexual sex has been increasing.



MI to U.S. Comparison

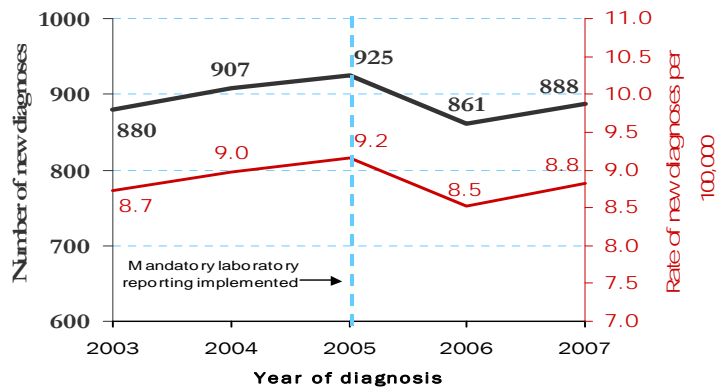
Between 2003 and 2007, the rate of new HIV diagnoses in Michigan remained stable (8.7 per 100,000 in 2003 and 8.8 per 100,000 in 2007). However, the estimated number of newly diagnosed HIV/AIDS cases in the 34 states with confidential name-based HIV infection reporting increased by 15 percent. Michigan is considered to be a state of moderate morbidity for HIV and has remained consistently lower than the rate in the U.S. over the past decade.

Characteristics: HIV Diagnoses in 2007

	Rate
Race	
Black	37.6
White	3.5
Race/Sex	
Male	14.0
Black Male	57.8
White Male	6.3
Female	3.0
Black Female	19.5
White Female	0.8
Age at HIV Diagnosis	
0 -12 years	0.2
13 -19 years	7.3
20 -24 years	16.5
25 -29 years	16.6
30 -34 years	16.6
35 -39 years	17.8
40 -44 years	18.5
45 -49 years	12.3
50 -54 years	10.1
55 -59 years	4.2
60+ years	1.5
Transmission Risk (Percent)	
MSM	48%
IDU	7%
Heterosexual Sex	19%
Unknown	24%

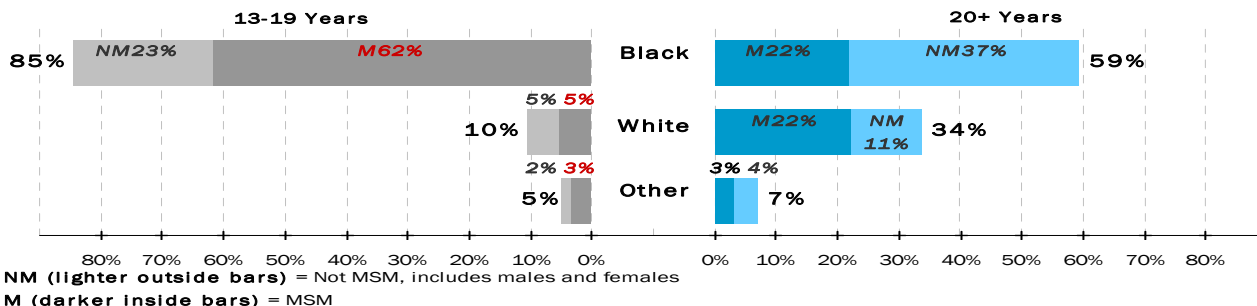
Trend Over Time

These new diagnoses include persons who learned of their HIV infection status after developing AIDS symptoms. Each year, there are more new diagnoses of HIV infection than deaths. Therefore, the reported number of persons living with HIV/AIDS in Michigan is increasing. The MDCH estimates that 18,000 residents are living with HIV infection in Michigan (including those with AIDS).



Of all teens diagnosed in the last five years, 85% are black compared to 59% of persons diagnosed at older ages. Furthermore, teens are much more likely to be black MSM compared to adults 20 years and older (62% vs. 22%). This continues to underscore a need for prevention campaigns tailored to young black MSM, as the differences we have been seeing over the last four years in this young group will likely widen the already large racial gap among persons living with HIV.

MSM vs. non-MSM risks by race/ethnicity and age at HIV diagnosis, 2003-2007



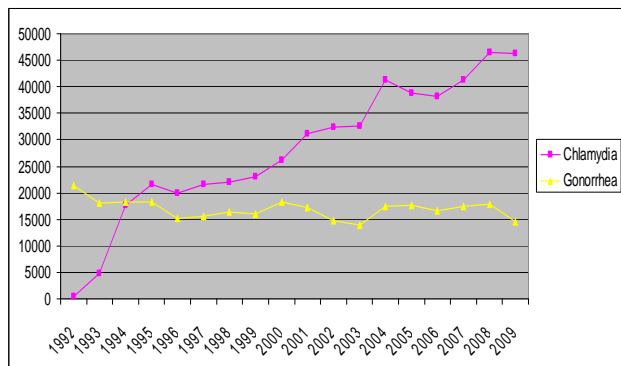
Sexually Transmitted Infections

Chlamydia and Gonorrhea are the most common reportable diseases in Michigan. In 2009, 46,338 cases of Chlamydia, and 14,600 cases of Gonorrhea were reported in the state. Both of these infections disproportionately impact young adults, females, and communities of color. In women, untreated Chlamydia infections can spread into the uterus or fallopian tubes and cause pelvic inflammatory disease (PID). PID can cause permanent damage to the fallopian tubes, uterus, and surrounding tissues. The damage can lead to chronic pelvic pain, infertility, and ectopic pregnancy. These complications are the reason screening resources are highly targeted for women, especially for Chlamydia.

Primary and Secondary (P&S) Syphilis cases have decreased significantly in Michigan since cases peaked in 2002, driven by an outbreak in Detroit. In 2002, Michigan reported 486 P&S Syphilis cases and in 2009 reported 224 cases, a 54% decrease. In 2009, Michigan also saw a successful outcome to interventions in Genesee County with a decrease in Syphilis cases in Genesee County after a 2008 outbreak (82 cases in 2008 to 18 in 2009, a 78% decrease). 2009, however, did see a significant increase in several Michigan counties, due to an increase in Syphilis among men who have sex with men, especially young, African American MSM in southeast Michigan, many of whom are HIV co-infected (68% of MSM cases); this is a national trend. Despite the increase in MSM cases, Syphilis rates in Michigan remain lower than the national average.

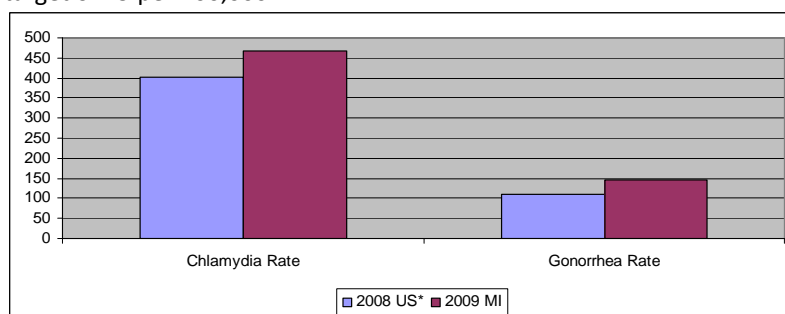
Gonorrhea and Chlamydia Trends Over Time

Michigan's Chlamydia rate has increased over time due to increases in screening and testing technology, while Gonorrhea rates have remained level.



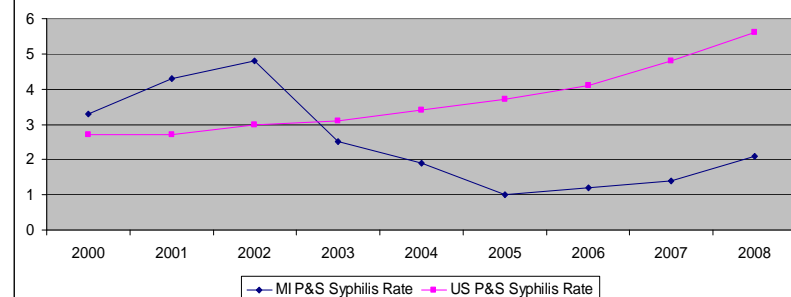
MI to U.S. Comparison

Michigan has higher rates of STIs compared to the U.S. average. The rate is significantly higher among African Americans. The Gonorrhea rate in 2009 was 147 per 100,000, significantly above the Healthy People 2010 target of 19 per 100,000.



Disparities, 2009 Rate per 100,000

Breakouts	GC	CT	P&S Syphilis
Total	147	466	2
Age			
15-19	712	2773	3
20-24	733	2508	7
25-29	316	911	7
30-34	169	336	4
35-39	85	157	4
40-44	47	73	3
45-49	35	40	3
Race & Ethnicity			
White (non-Hispanic)	20	120	1
Black (non-Hispanic)	541	1231	11
Hispanic	64	323	1
Sex			
Male	124	251	4
Female	171	696	1



Chlamydia Screening Site Positivity

In 2009, Michigan screened at-risk individuals for Chlamydia and Gonorrhea in various venues around the state. The overall positivity for Chlamydia was 10.1% and for Gonorrhea was 3.3%. In other words, 1 in 10 individuals were infected with Chlamydia and 1 in 30 individuals were infected with Gonorrhea. Positivity was highest at teen health clinics, school-based clinics, and adult correctional and juvenile detention facilities.

Source for Data in Section: Current Population Survey, U.S. Census

Links to Other Sources of Information

Annual Report on STDs and Fact Sheets on Disease: www.cdc.gov/std/stats/-CDC

Sexually Transmitted Diseases then STD statistics for annual Michigan STD statistics by age, sex, and county: www.michigan.gov/hivstd

Links to Related Public Health Programs:

MDCH: HIV/STD/Hepatitis in Michigan: http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_2982---,00.html

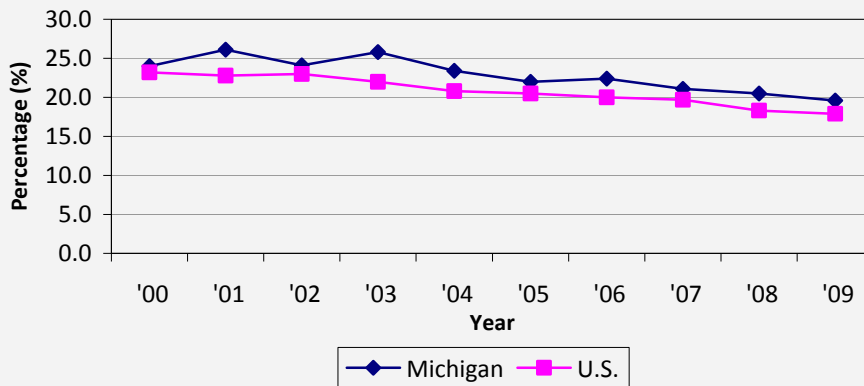
CDC: STD Prevention: <http://www.cdc.gov/std/>

Indicator Definition: Percentage of adults who have smoked ≥ 100 cigarettes in their lifetime and who currently smoke some days or every day.

Indicator 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.
- Smoking is also related to an increase in chronic obstructive lung disease deaths, adverse reproductive and early childhood effects, and lower bone density in postmenopausal women.

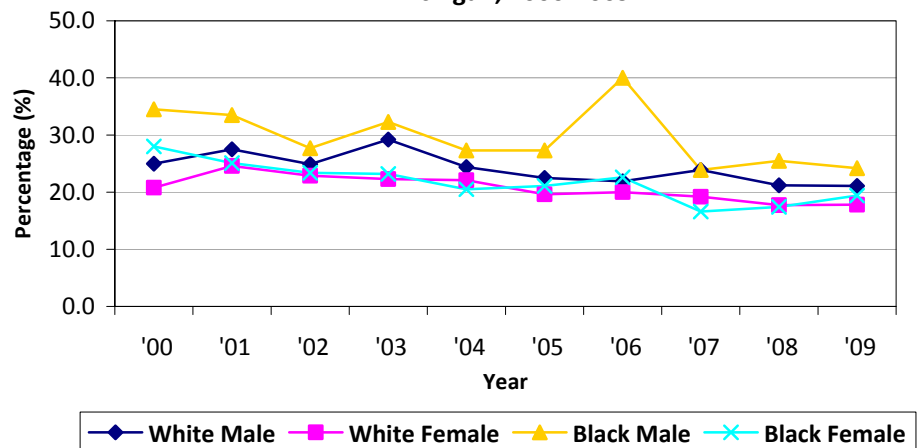
**Current Cigarette Smoking
Michigan and United States, 2000-2009**



← **Trends:** The percentage of smokers in Michigan decreased between 2000 and 2009 from 23.3% to 19.6%, for a net decrease of fifteen percent the overall adult smoking population. Current smoking rates for the U.S. follow a similar trend to that of Michigan. In 2009, fewer than 1 in 5 adults within Michigan and the U.S. reported being current smokers.

→ **Health Disparities:** The gender and racial disparities in the prevalence of current smoking among Michigan adults have diminished over the past decade. In 2009, 24.2% of Black males reported current smoking, followed by White males at 21.1%, Black females at 19.4%, and White females at 17.8%.

**Current Cigarette Smoking by Race and Gender
Michigan, 2000-2009**



Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs)
Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)

Links to Related Public Health Programs:

MDCH: Tobacco Control Program: <http://www.michigan.gov/tobacco>
CDC: Smoking & Tobacco Use: <http://www.cdc.gov/tobacco/>

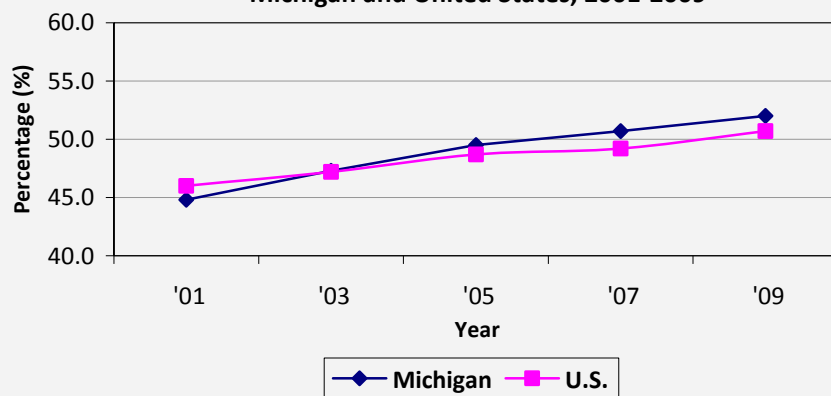
Physical Activity

Indicator Definition: Percentage of adults meeting the recommendation for moderate physical activity (at least 5 days a week for 30 minutes a day of moderate-intensity activity or at least 3 days a week for 20 minutes a day of vigorous-intensity activity).

Indicator Overview:

- Regular physical activity is an important contributor to health, yet fewer than 50 percent of people in the United States report engaging in moderate physical activity. The CDC report, *Physical Activity and Health: Report of the Surgeon General*, described numerous associations between physical activity and various health outcomes, such as:
- Moderate to higher levels of regular physical activity lowers 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 well-being.

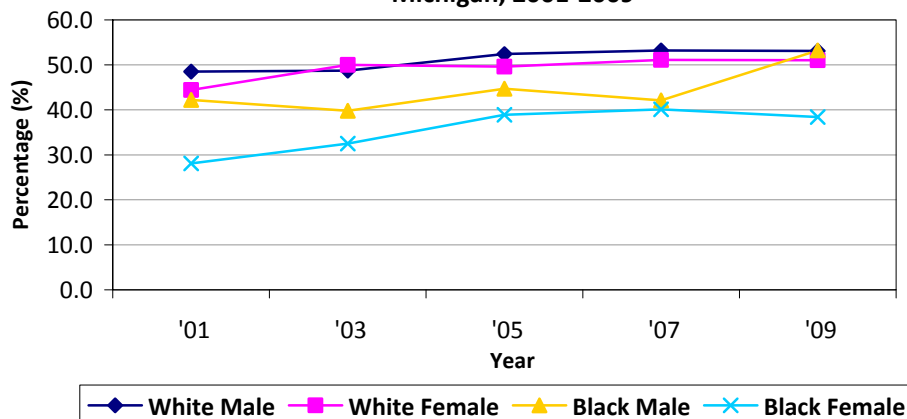
**Adequate Physical Activity
Michigan and United States, 2001-2009**



← **Trends:** Since 2001, the median prevalence of adequate physical activity for the United States has increased from 46.0% to 50.7% in 2009. In addition, the prevalence of adequate physical activity among Michigan adults has also increased significantly over the same time period (2001: 44.8% vs. 2009: 52.0%).

→ **Health Disparities:** The gender and racial disparities in the prevalence of adequate physical activity have diminished slightly over the past several years, particularly among Black males. Black females continue to report a significantly lower prevalence of adequate physical activity when compared to the three other gender-race groups. In 2009, 53.2% of Black males reported adequate physical activity, followed by White males at 53.1%, White females at 51.0%, and Black females at 38.4%.

**Adequate Physical Activity by Race and Gender
Michigan, 2001-2009**



Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2001-2009. (www.michigan.gov/brfs)
Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2001-2009. (www.cdc.gov/brfss)

Links to Related Public Health Programs:

Michigan Nutrition, Physical Activity & Obesity Program:
<http://www.michigan.gov/preventobesity>
Michigan Complete Streets: <http://michigancompletestreets.com/>

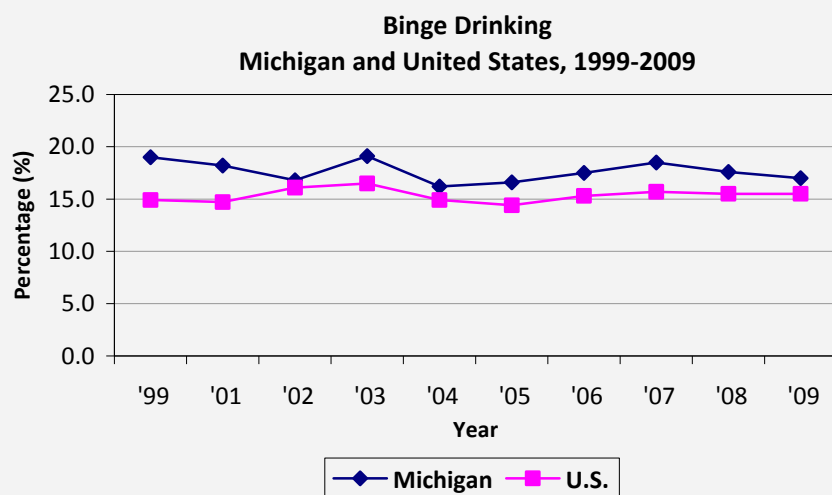
Safe Routes to School: <http://www.saferoutesmichigan.org/>
Healthy Communities: www.michigan.gov/healthycommunities
Healthy Kids, Healthy Michigan:
<http://www.americanheart.org/healthykidshealthymichigan>

Binge Drinking

Indicator Definition: Percentage of adults consuming four (women) or five (men) or more drinks on one occasion.

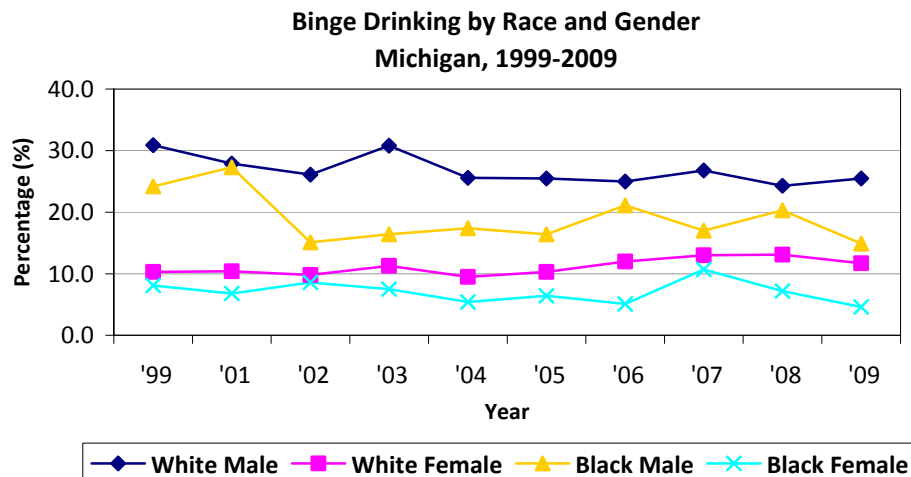
Indicator Overview:

- In 2005, more than 1.6 million hospitalizations and over 4 million emergency room visits nationally were for alcohol related conditions.
- 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.



← **Trends:** When compared with the national median, Michigan consistently has a slightly higher prevalence of binge drinking. The prevalence of binge drinking has remained relatively stable over the past decade in Michigan and the U.S. In 2009, 17.0% of Michigan adults reported binge drinking within the past month, compared to 15.5% of U.S. adults.

→ **Health Disparities:** In Michigan, White males have consistently reported higher prevalence rates of binge drinking when compared to Black males, White females, and Black females. The prevalence of binge drinking among Black males has decreased significantly over the past decade, but the prevalence of binge drinking among White males remains high. Both White and Black females have consistently reported low rates of binge drinking.



Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 1999-2009. (www.michigan.gov/brfs) Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 1999-2009. (www.cdc.gov/brfss)

Links to Related Public Health Programs:

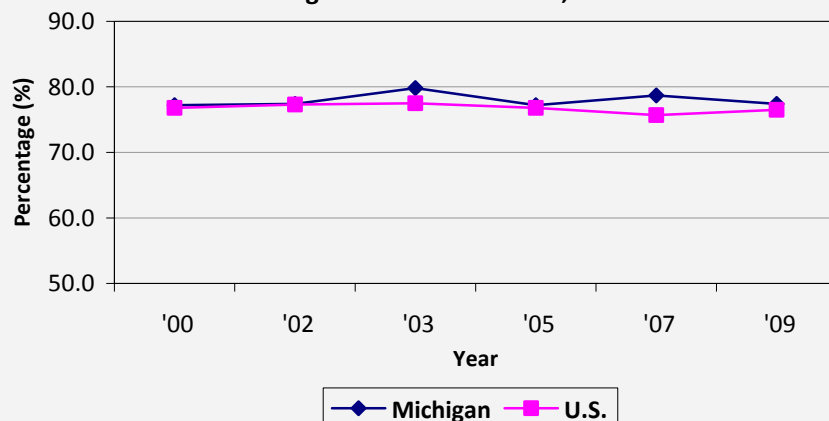
MDCH: Substance Abuse Prevention: http://www.michigan.gov/mdch/0,1607,7-132-2941_4871_29888---,00.html

Indicator Definition: Percentage of Inadequate Fruit and Vegetable Consumption Among Adults.

Indicator Overview:

- Good nutrition is necessary for a healthy, long life. 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 in the Behavioral Health Risk Factor Survey (BRFS) for fruit and vegetable consumption.

**Inadequate Fruit and Vegetable Consumption
Michigan and United States, 2000-2009**



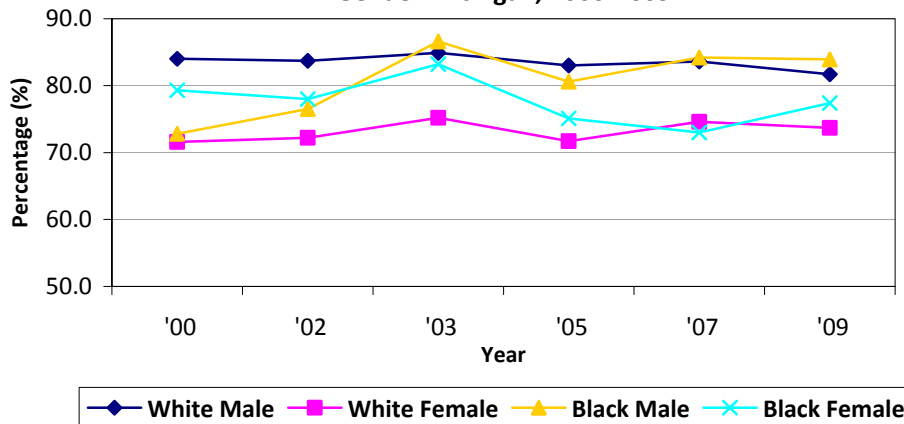
← Trends:

The percentage of adults who report inadequate fruit and vegetable consumption has remained relatively stable over the past ten years for both Michigan and the United States. In 2009, Michigan adults (77.4%) reported a slightly higher prevalence of inadequate fruit and vegetable consumption when compared to the nation as a whole (76.5%).

→ Health Disparities:

In Michigan, White females have consistently reported lower prevalence rates of inadequate fruit and vegetable consumption when compared to White males, Black males, and Black females. Since 2003, Black females have lowered their inadequate fruit and vegetable consumption to levels comparable to that of White females. Both White and Black males continue to report substantially higher levels of inadequate fruit and vegetable consumption.

Inadequate Fruit and Vegetable Consumption by Race and Gender Michigan, 2000-2009



Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs)
Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)

Links to Related Public Health Programs:

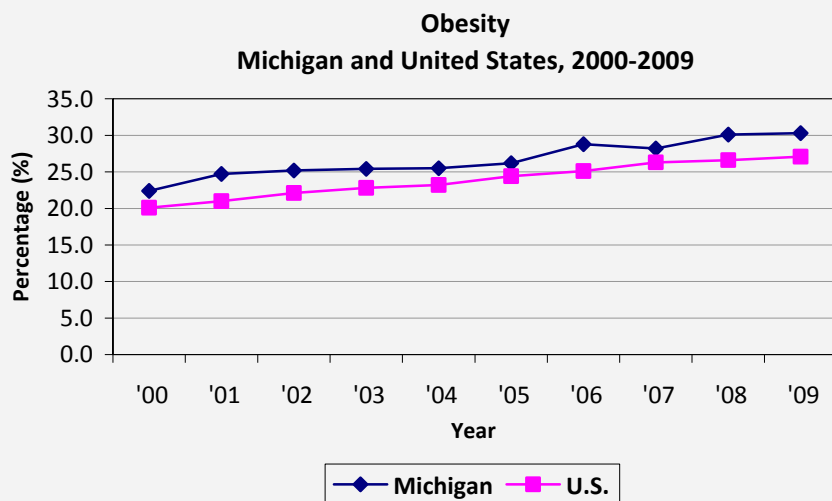
- Building Healthy Communities: www.michigan.gov/healthycommunities
- Obesity Prevention: www.michigan.gov/preventobesity
- Michigan Food Policy Council: www.michigan.gov/mfpc
- Center for Disease Control: www.cdc.gov/nutrition
- Healthy Kids, Healthy Michigan: www.americanheart.org/healthykidshealthymichigan

Obesity

Indicator Definition: Percentage of adults reporting a body mass index of ≥ 30 .

Indicator Overview:

- Obesity is one of today’s most pressing public health issues. The rates of obesity (defined as having a body mass index equal to or greater than 30) 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).

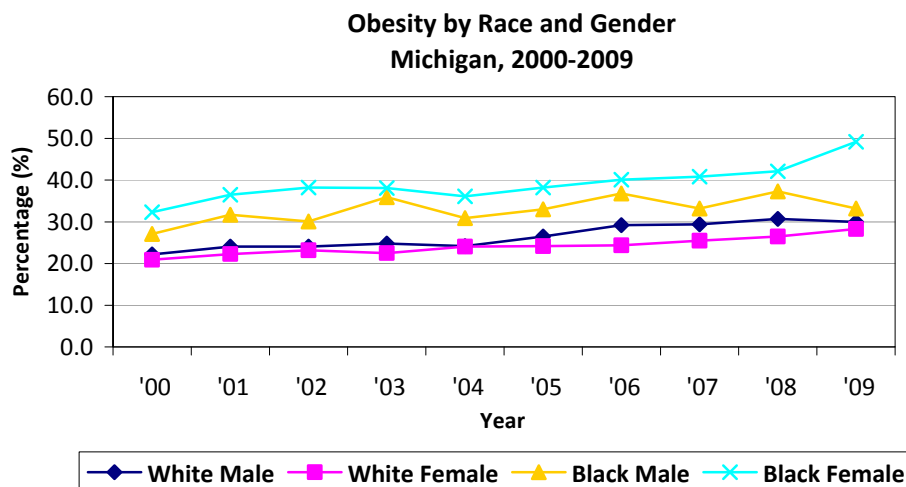


← Trends:

The prevalence of obesity has been increasing in Michigan and the U.S. over the past decade. Michigan has consistently reported higher obesity prevalence rates than the U.S. median. In 2009, Michigan reported the 10th highest obesity rate in the nation.

→ Health Disparities:

In Michigan, Black females have consistently reported higher prevalence rates of obesity when compared to White males, Black males, and White females. White males and females have reported the lowest obesity rates over the past decade, with Black males reporting comparable obesity rates over the past few years. In 2009, Black females reported the highest obesity rate at 49.2%.



Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs)
Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)

Links to Related Public Health Programs:

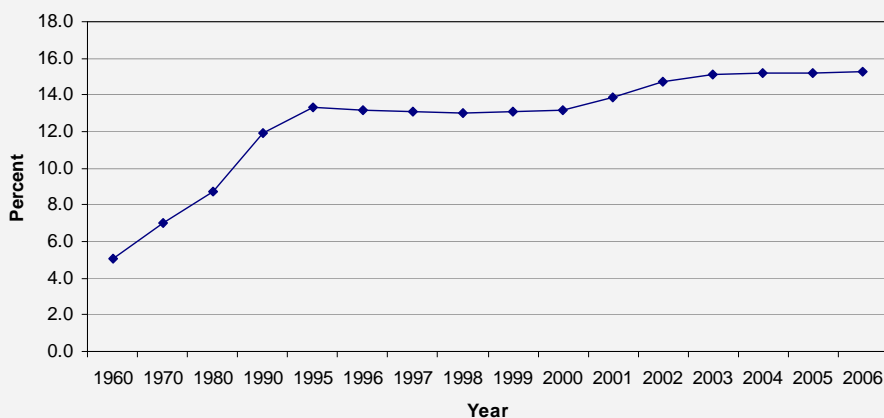
MDCH: Nutrition, Physical Activity and Obesity Prevention: <http://www.michigan.gov/preventobesity>
CDC: Overweight & Obesity: <http://www.cdc.gov/obesity/index.html>

Indicator Definition: Per capita health care expenditures.

Indicator Overview:

- Per capita health spending is used to track expenditures over time within the United States and is one of the most widely used comparative indicators with other countries.
- According to the Kaiser Family Foundation State Health Facts profiles, Michigan’s per capita health expenditures in 2004 were \$5,058 per person, which is \$180 (or 3%) per person less than the U.S. expenditures.
- The breakout of expenditures by service for 2004 shows that Michigan and the U.S. tend to be within 1-2% of each other when comparing each service as a percent of the whole.

Health Care in the United States as a Percent of GDP



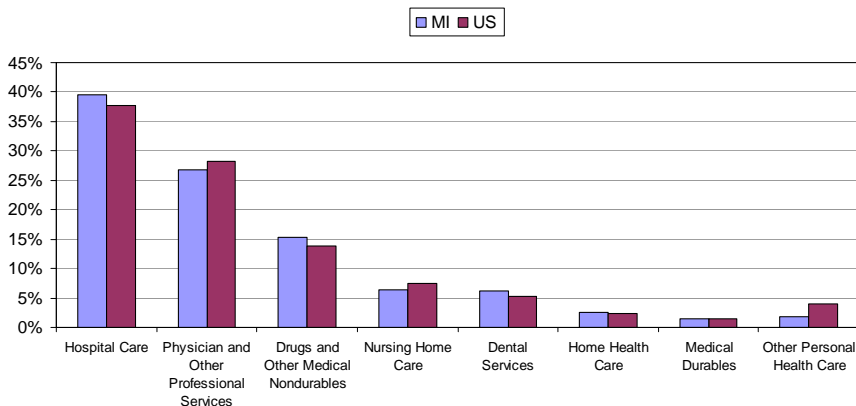
← Trends:

Health care expenditures have been increasing over time. In the 1960s, the total expenditure only amounted to about 5% of the U.S. Gross Domestic Product (GDP). Since 2003, the annual health care expenditures have grown to about 15% of the GDP.

→ Expenditures by Service:

Expenditures by Service in Michigan and the United States as a percent of the whole are similar. In 2004, the total expenditures for the US were \$1,551,255,000 and for Michigan was \$51,048,000. Thirty-five to forty percent of the expenditures are on hospital care, 25 percent goes to physicians and other health professionals, and another fifteen percent is spent on medications.

Percent of Health Care Expenditures by Service, 2004



Links to Other Sources of Information:

Kaiser Foundation Profiles: Michigan – Health Costs & Budgets: <http://www.statehealthfacts.org/profileind.jsp?cat=5&rgn=24&cmprgn=1>
 CMS: National Health Expenditures Data: http://www.cms.gov/NationalHealthExpendData/05_NationalHealthAccountsStateHealthAccountsResidence.asp#TopOfPage

Links to Related Public Health Programs:

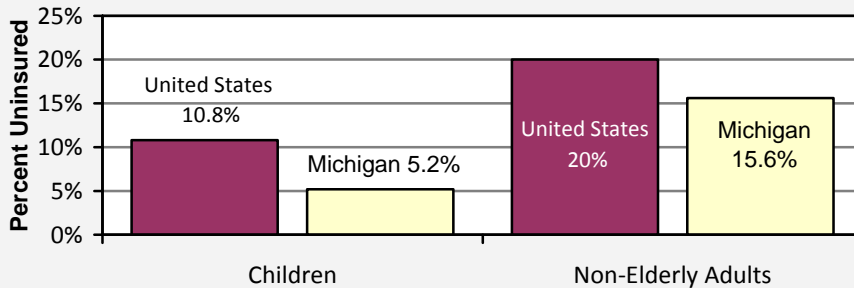
MDCH: Health Care Coverage: <http://www.michigan.gov/mdch/0,1607,7-132-2943---,00.html>
 MDCH: Help finding Health Care: http://www.michigan.gov/mdch/0,1607,7-132-2943_52115---,00.html

Indicator Definition: Percentage of adults without health coverage via insurance or entitlement.

Indicator Overview:

- Health insurance coverage is an important determinant of access to care. A 2009 Institute of Medicine (IOM) literature review found that access to healthcare services improved for children, and that children were less likely to experience unmet healthcare needs when they acquired health insurance.ⁱ The same IOM literature review found that adults without health insurance are less likely to receive effective clinical preventive services, and that among chronically ill adults, those without health insurance were more likely to delay or forgo needed health care and medications. In Michigan, efforts to expand health care coverage primarily focus on persons aged 64 and younger; those aged 65 and older are typically insured by Medicare.
- Adults ages 18-34 years are almost twice as likely to be uninsured (22.9%) as those ages 35-64 years (11.8%).ⁱⁱ Among the non-elderly, Hispanics are most likely to be uninsured at 22.1%, followed closely by Blacks at 19.4%; Whites have an uninsured rate of 10.9%.ⁱⁱ Individuals in families headed by someone with no more education than a high school diploma make up 39.4% of Michigan's population, but they make up 56.7% of the uninsured.ⁱⁱ Single residents without kids are most likely to be uninsured at 25.5% while individuals from families that include married residents with kids are least likely to be uninsured at 6.7%.ⁱⁱ

The United States Compared to Michigan 2006-2008



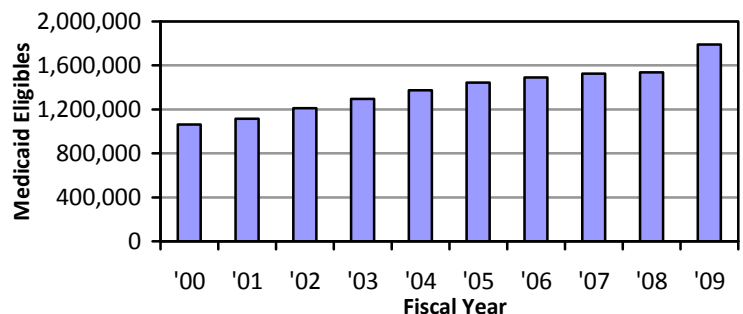
% Uninsured Non-Elderly Adults (18-64)		
	2003-2005	2006-2008
Michigan	14.5% (906,000)	15.6% (969,000)
United States	19.5% (35,547,000)	20.0% (37,653,000)

← **State-National Comparison:** As shown to the left, Michigan children are less than half as likely to be uninsured (5.2%) as children in the United States (10.8%).ⁱⁱ Michigan's uninsured non-elderly adults have risen over time. In 2003-2005, 14.5% of non-elderly adults were uninsured, while in 2006-2008 15.6% of non-elderly adults were uninsured.ⁱⁱ This is a greater increase in uninsured percentage than in the United States over the same period.

← **Trend:** Although Michigan's rate of uninsurance has increased, the proportion of residents without health insurance coverage in Michigan has been consistently lower than the national average for non-elderly adults since 1987, the first year when comparable data was made available.ⁱⁱ

→ **Additional Information:** As of July 2010, over 18% of Michigan's population (1,897,513 residents) is Medicaid eligible (enrolled in Medicaid). Between 2000 and 2009 Michigan has seen a 60% increase in the number of Medicaid eligible's. The increase in Medicaid enrollment and the increase in uninsured correspond with a decrease in employer-based health insurance coverage. From 2000 to 2009, the percent of the non-elderly population with employer-based health insurance coverage dropped from 75.6% to 66%.

Medicaid Enrollment in Michigan



Links to Other Sources of Information:

MDCH, Uninsured Reports and Briefs: http://www.michigan.gov/mdch/0,1607,7-132-2944_5327-17224--,00.html

MDCH, Other Links of Interest on Health Insurance Statistics: http://www.michigan.gov/mdch/0,1607,7-132-2943_37434-128490--,00.html

Links to Related Public Health Programs:

MDCH, Medicaid Program: http://www.michigan.gov/mdch/0,1607,7-132-2943_4860---,00.html

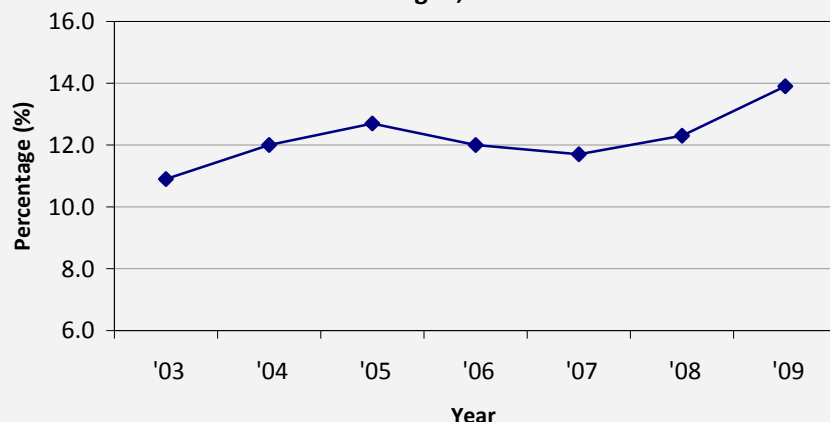
Unmet Medical, Dental, & Prescription Drug Needs

Indicator Definition: Percentage of (non-institutionalized) people who did not receive or delayed receiving needed medical services.

Indicator Overview:

- Unmet needs is an indicator commonly used to portray problems in access to health care services including lack of health insurance and limited availability of providers.
- Unmet needs is also associated with greater emergency room use and disadvantaged individuals delay care for conditions that are associated with longer hospital stays and poorer health outcomes.

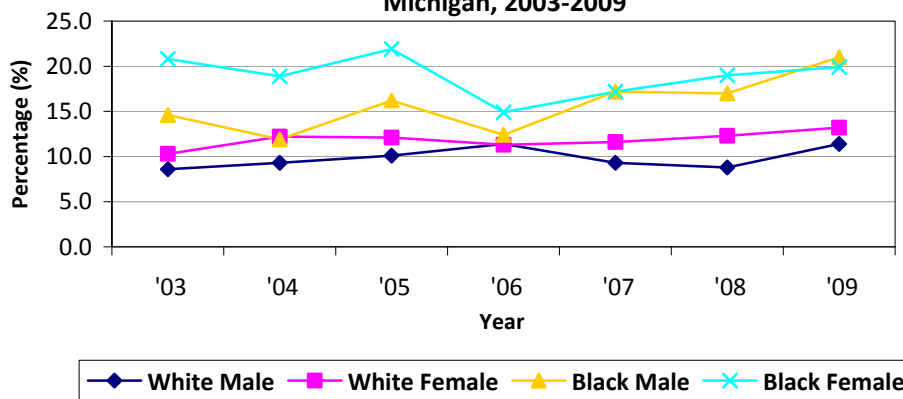
**No Health Care Access in Past 12 Months Due to Cost
Michigan, 2003-2009**



← **Trends:** The percentage of Michigan adults who reported not going to a doctor when they needed to in the past 12 months due to cost has increased significantly over the past seven years. The increase corresponds with a significant percent of adults reporting no health care coverage.

→ **Health Disparities:** In Michigan, Black females have consistently reported higher prevalence rates of cost related health care access barriers when compared to White males and females. Recently, the prevalence of cost prevented care among Black males has increased to similar levels of that of Black females. Both White males and females report similar prevalence rates of cost related health care access barriers.

**No Health Care Access in Past 12 Months Due to Cost
by Race and Gender
Michigan, 2003-2009**



Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2003-2009. (www.michigan.gov/brfs)
Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2003-2009. (www.cdc.gov/brfss)

Links to Related Public Health Programs:

MDCH: Help finding Health Care: http://www.michigan.gov/mdch/0,1607,7-132-2943_52115---,00.html

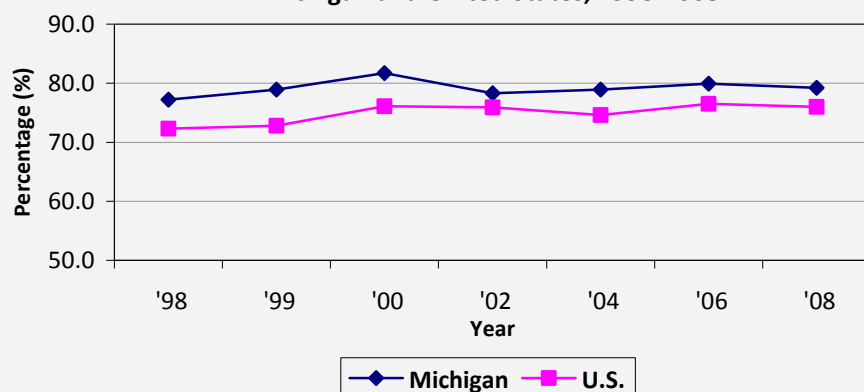
Indicator Definition: Percentage of adults who are up-to-date with age-appropriate screening services.

Indicator Overview:

- Among the many clinical preventive services, the following services are included for this report: Mammograms, Pap Tests, Colorectal Cancer Screenings, and Cholesterol Checks.
- According to the Centers for Disease Control and Prevention (CDC), 7 out of 10 deaths are due to chronic disease; heart disease, cancer, and stroke account for more than 50% of all deaths each year. Preventative screenings can help catch chronic diseases at an earlier stage, which increases longevity with the disease and allows the patient to set up a plan with the provider to manage the disease on a long-term basis.

Mammograms

**Had a Mammogram in the Past Two Years
Among Women Aged 40 Years and Older
Michigan and United States, 1998-2008**

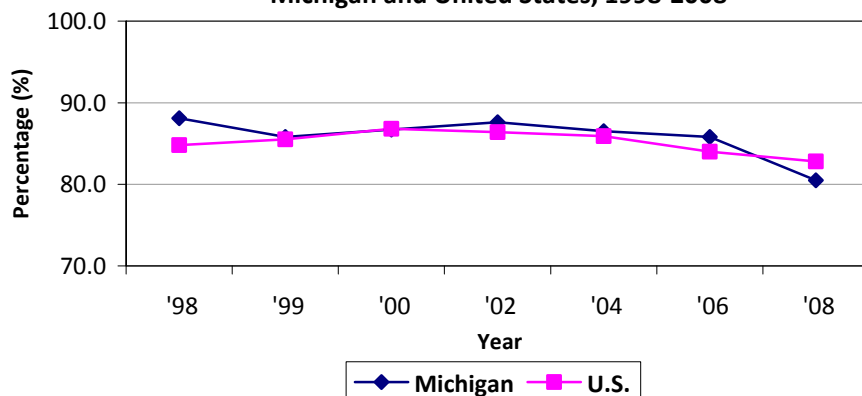


← **Trends:** The percentage of women aged 40 years and older who have had a mammogram in the past two years has remained relatively stable over the past decade for both Michigan and the United States. In 2008, Michigan women aged 40 years and older (79.2%) reported a slightly higher rate of mammography within the past two years when compared to the nation as a whole (76.0%).

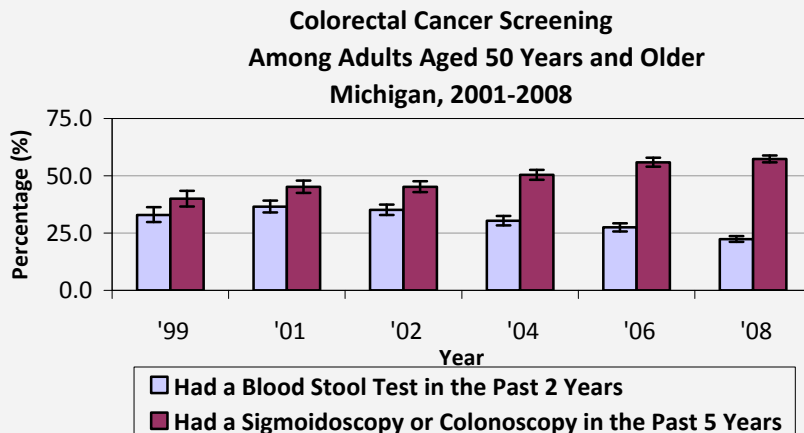
Pap Tests

→ **Trends:** The prevalence of pap testing among women aged 18 years and older has declined slightly over the past decade both at the state and national levels. In 2008, the pap testing rate among Michigan women aged 18 years and older (80.5%) dropped below the U.S. median (82.8%) for the first time in the past several years.

**Had a Pap Test in the Past Three Years
Among Women Aged 18 Years and Older
Michigan and United States, 1998-2008**



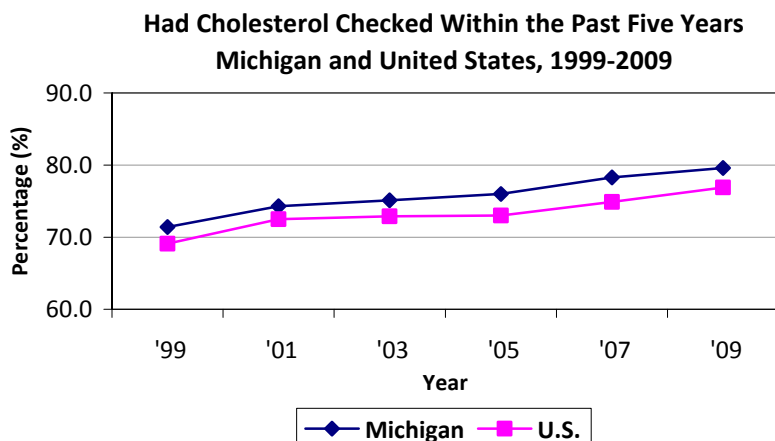
Colorectal Cancer Screening



← **Trends:** The utilization of colorectal cancer screening among Michigan adults aged 50 years and older increased over the past decade. The prevalence of those having a blood stool test in the past two years has decreased slightly, while the prevalence of those having a sigmoidoscopy or colonoscopy in the past five years has dramatically increased.

Cholesterol Check

→ **Trends:** The prevalence of having had cholesterol screening within the past five years in Michigan and the United States has steadily increased over the past decade. In 2009, 79.6% of Michigan adults reported having had their cholesterol checked within the past five years, compared to 76.9% of U.S. adults.



Links to Other Sources of Information:

Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 1998-2009. (www.michigan.gov/brfs)
Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 1998-2009. (www.cdc.gov/brfss)

Links to Related Public Health Programs:

MDCH: Physical Health & Prevention Programs: http://www.michigan.gov/mdch/0,1607,7-132-2940_2955---,00.html
CDC: Chronic Disease Prevention & Health Promotion: <http://www.cdc.gov/chronicdisease/index.htm>

Pediatric & Adult Immunizations

Indicator Definition: Percentage of children aged 19–35 months who are up to date with recommended immunizations. Percentage of adults who are up-to-date with influenza and pneumococcal vaccinations.

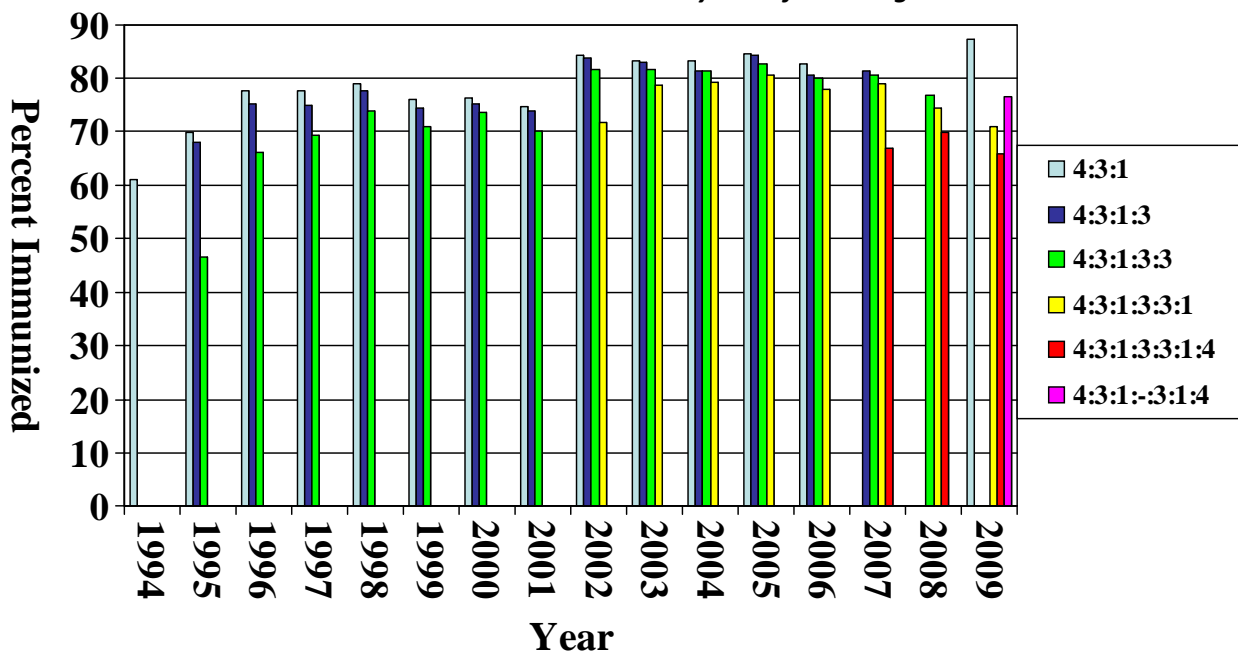
Indicator Overview:

- At the beginning of the 20th century, outbreaks of infectious diseases were frequent in the United States. The development of vaccines has resulted in a significant drop in incidence for many of these diseases. Because many vaccine-preventable diseases primarily affect young children and infants, immunizations are given early in life. Seventy-seven percent of U.S. children 19 to 35 months of age have received the Advisory Committee on Immunization Practices (ACIP) recommended series of childhood vaccines (CDC, 2009c). High rates of childhood immunization are important to protect not only individual children, but also outbreaks of disease among communities.
- Vaccination against influenza is another cost- and health-enhancing measure. The CDC notes, “Influenza vaccination is the most effective method for preventing influenza virus infection and its potentially severe complications” (CDC, 2009h). Rates of serious illness and death from the influenza virus infection are highest among children less than 2 years old, people 65 and older and those with serious medical conditions.

Pediatric Immunizations

- The ultimate goal is to eliminate vaccine-preventable diseases or, at a minimum, reduce the number of serious vaccine-preventable diseases occurring in Michigan. Childhood immunizations provide protection against: Diphtheria, *Haemophilus influenzae* type B, Hepatitis A, Hepatitis B, Measles, Mumps, Pertussis (whooping cough), Pneumococcal disease, Polio, Rubella, Rotavirus, Tetanus, Varicella (chickenpox), Human Papillomavirus (HPV), Influenza (flu), and Meningococcal disease. Prior to 1995, immunization levels in Michigan were measured by the percentage of children who, at two years of age, had received 4 doses of a vaccine containing diphtheria, tetanus and pertussis components (DTP or DTaP), three doses of polio vaccine, and one dose of a vaccine containing measles, mumps and rubella components (4:3:1). In 1995, three doses of *Haemophilus influenzae* type B vaccine (Hib) and three doses of Hepatitis B vaccine (Hep B) were added to the list of vaccines used to assess the extent to which Michigan’s children were appropriately immunized (4:3:1:3:3). One dose of varicella vaccine and four doses of pneumococcal conjugate vaccine are the most recent vaccines that have been added to the National Immunization Survey (NIS), creating a current standard of 4:3:1:3:3:1:4. The data below (4:3:1:-:3:1:4) excludes Hib, due to a vaccine shortage.
- From 2007-2008, the CDC did not measure the 4:3:1 vaccination series, and the CDC did not measure the 4:3:1:3 vaccination series from 2008-2009. These data are absent from the NIS Data for Michigan Chart.

2009 National Immunization Survey Data for Michigan

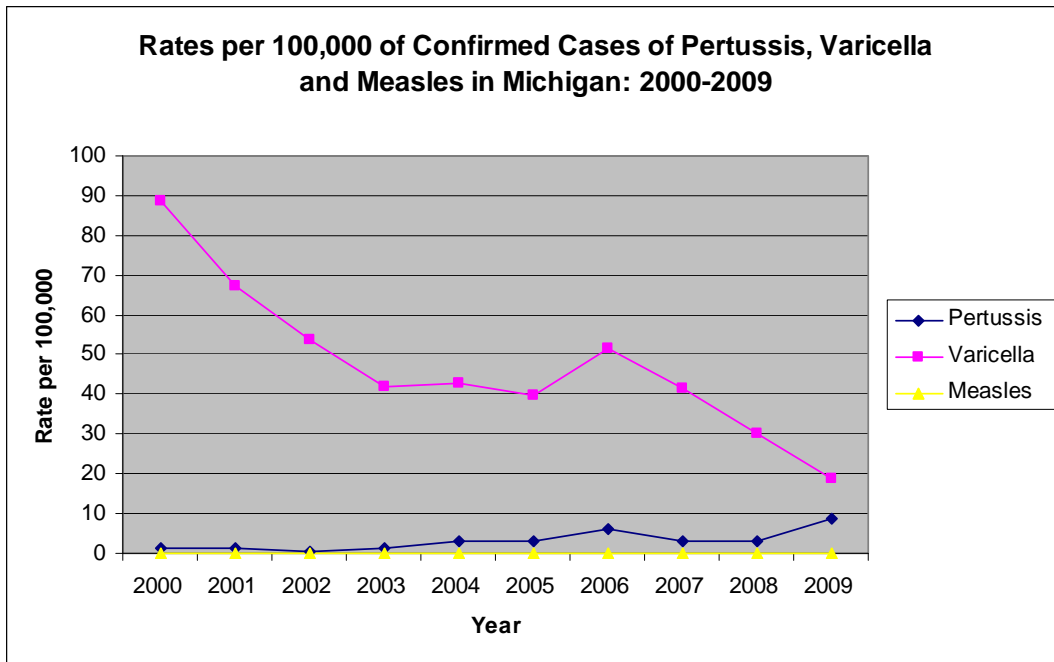


Trends: In 1994 when the first National Immunization Survey was completed by the CDC, Michigan had the lowest immunization rates in the country at 61% for 4:3:1 coverage. Michigan has now improved its immunization rates to 76.5% ±6.4 for the 4:3:1:0:3:3:1:4 series – the national rate is 70.5% ±1.2. This series measures 4:3:1 plus 3 or more doses of HepB, 1 or more doses of Varicella vaccine, and 4 or more doses of PCV. Hib vaccine is excluded due to the national Hib vaccine shortage. This ranks Michigan at 5th in the country. The Michigan Care Improvement Registry (MCIR) is a critical tool used by all clinics who administer vaccines to track immunizations.

→ Vaccine-Preventable Diseases:

From 2000 to 2009, the rate of pertussis disease in Michigan increased from 1.28 per 100,000 people (127 cases) to 8.91 per 100,000 people (902 cases) and continues to increase into 2010.

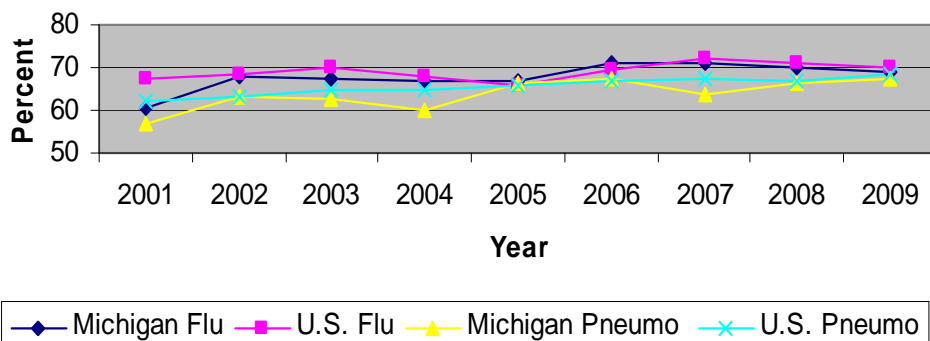
Varicella disease incidence in Michigan dropped from a rate of 88.64 per 100,000 people (8,809 cases) in 2000 to a rate of 18.66 per 100,000 people (1,889 cases) in 2009. In 2009, there were 0 cases of measles in Michigan, however, there were 3 cases in 2007 and 4 cases in 2008. Nationally, there were 71 cases of measles in 2009.



Adult Immunizations

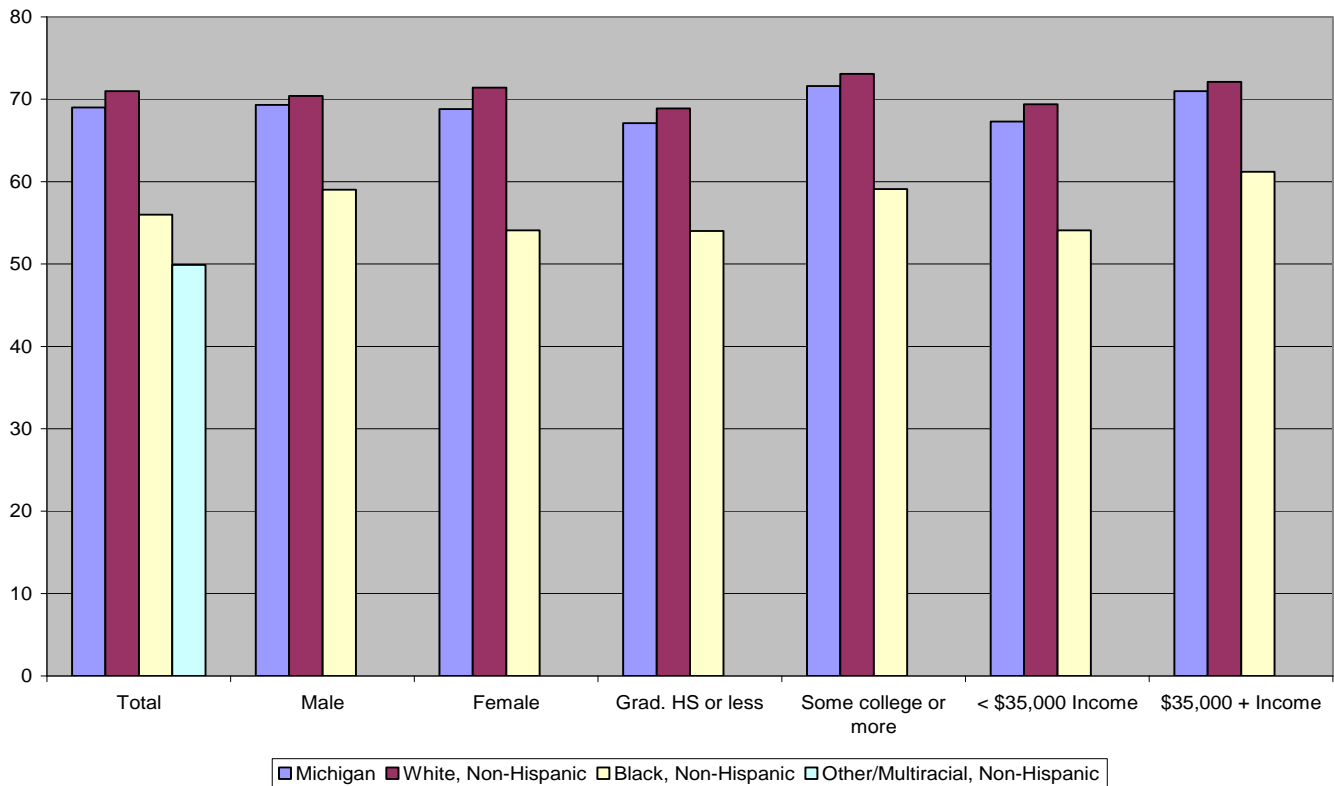
- Vaccination against influenza and pneumonia is a cost- and health-enhancing measure. Influenza vaccine is the single best way to prevent the flu. Rates of serious illness and death from the influenza virus are highest among children less than 2 years old, people 65 years and older, and those with serious medical conditions. Flu seasons are unpredictable and can be severe. Over a period of 30 years, between 1976 and 2006, national estimates of annual flu-associated deaths range from a low of about 3,000 to a high of 49,000 people. Similarly, pneumococcal disease can be fatal. In some cases, it can result in long-term problems, such as brain damage, hearing loss, and limb loss.

Adults aged 65+ with a flu or pneumococcal vaccination in Michigan and the United States: 2001- 2009



←Trends: Among adults aged 65 years and older, the percentage receiving a flu vaccination has varied over the past nine years for both Michigan and the nation. In 2009, Michigan adults aged 65 years and older reported a slightly lower flu vaccination rate (68.9%) than the nation as a whole (70.1%). Similarly, in 2009, Michigan adults aged 65 years and older reported a slightly lower pneumococcal vaccination rate (67.5%) than the United States (68.5%). It is imperative that adults are made aware of the vaccines available.

Had Flu Vaccine in Past Year among Adults 65 Years and Older by Race-Ethnicity



Health Disparities:

There are some significant health disparities that exist among adults 65 years and older who have received the flu vaccine in the past year. In 2009, 71% of white/non-Hispanic MI residents received their flu vaccine, while only 56% of black/non-Hispanic and 49.9% of other/multiracial/non-Hispanic Michigan residents 65 years and old received their flu vaccine. Further, flu vaccination rates are higher among white/non-Hispanic adults who graduated high school or less (68.9%) than black/non-Hispanic adults (54%) of the same educational background.

Immunization Resources and Websites:

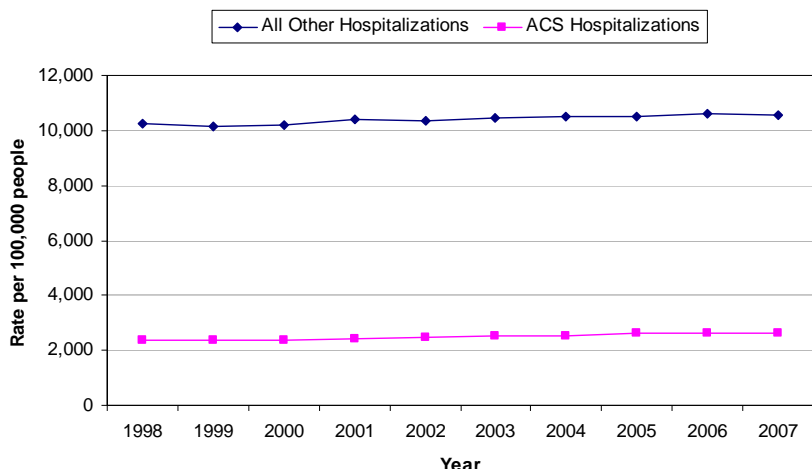
- Centers for Disease Control and Prevention: www.cdc.gov/vaccines
- Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs)
- Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
- Michigan Department of Community Health (MDCH), Division of Immunization: www.michigan.gov/immunize
- MDCH Adolescent Immunization Website: www.michigan.gov/teenvaccines
- MDCH Hepatitis B Website: www.michigan.gov/hepatitisb
- MDCH Flu Website: www.michigan.gov/flu
- Michigan Care Improvement Registry (MCIR): www.mcir.org

Indicator Definition: Hospitalization rate for ambulatory-care-sensitive conditions (ACSC).

Indicator Overview:

- Ambulatory Care Sensitive (ACS) hospitalizations such as asthma, diabetes or dehydration are hospitalizations for conditions where timely and effective ambulatory care can decrease hospitalizations by preventing the onset of an illness or condition, controlling an acute episode of an illness or managing a chronic disease or condition.
- Hospitalization for ACS conditions may indicate problems in: access to ambulatory care, primary care resource shortage, poor-quality outpatient management or monitoring, lack of the patient education needed for appropriate self-management, patient preference not to follow treatment recommendations, and/or other factors that create barriers to obtaining timely and effective care.
- According to the CDC, preventable hospitalization from ACSC increased from 5.9 percent of all hospitalization in 1980 to 11.5 percent in 1998. Since 1998, the national annual average for ACS hospitalizations remains around twelve percent of all hospitalizations (3.1 million hospitalizations).

Hospitalization Rates in Michigan



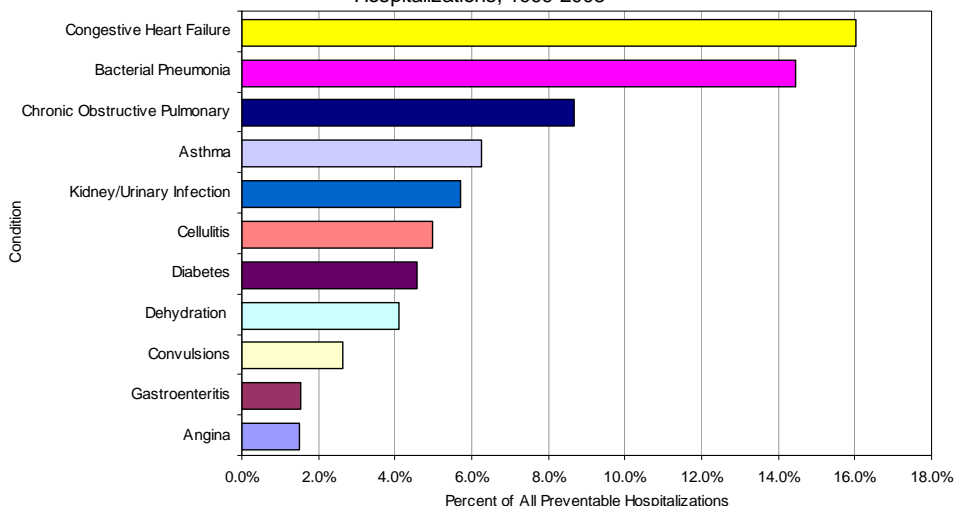
← Trends:

The rate of Ambulatory Care Sensitive hospitalizations in Michigan rose from 2375 per 100,000 population in 1998 to 2643 per 100,000 population in 2007. ACS hospitalizations accounted for 1 of every 5 total hospitalizations by 2007. As the total number of hospitalizations increased annually, so did the total number of ACS hospitalizations. This increase is also reflected in the percent of total hospitalizations. ACS hospitalizations as a percentage of total hospitalizations rose gradually from 18% in 1998 to 20% in 2007. In Michigan, these trends vary by age and area.

→ Additional Information:

Michigan’s leading cause of preventable hospitalization is Congestive Heart Failure (16%), which is almost double the percent of the third leading condition, Chronic Obstructive Pulmonary Disease. Bacterial Pneumonia has only resulted in 1-2% fewer hospitalizations than Congestive Heart Failure.

Leading Ambulatory Care Sensitive Hospitalizations as a Percent of All ACS Hospitalizations, 1999-2008



Links to Other Sources of Information:

MDCH Ambulatory Care Sensitive Hospitalizations Index: <http://www.mdch.state.mi.us/pha/osr/index.asp?id=15>
 National Hospital Discharge Survey: <http://www.cdc.gov/nchs/nhds.htm>

Links to Related Public Health Programs:

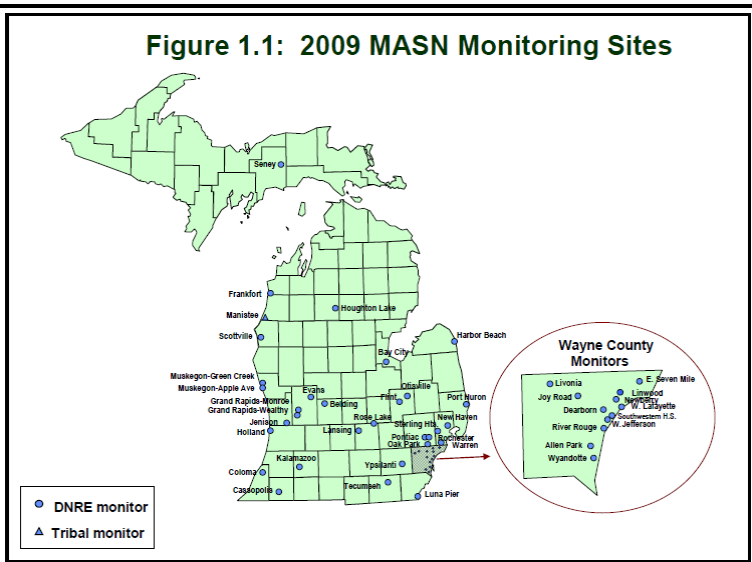
MDCH: Physical Health & Prevention Programs: http://www.michigan.gov/mdch/0,1607,7-132-2940_2955---,00.html
 CDC: Chronic Disease Prevention & Health Promotion: <http://www.cdc.gov/chronicdisease/index.htm>

Air Quality Index (AQI)

Indicator Definition: The Air Quality Index (AQI) is an index for reporting daily air quality, which indicates how healthy or unhealthy the ambient air is. The index is calculated for four major air pollutants regulated by the Clean Air Act: ground-level ozone, particle pollution, carbon monoxide, and sulfur dioxide. For each of these pollutants, the Environmental Protection Agency (EPA) has established national air quality standards to protect public health.

Indicator Overview:

- Under the Clean Air Act, EPA establishes air quality standards to protect public health, including the health of "sensitive" populations. EPA also sets limits to protect public welfare. This includes protecting ecosystems, including plants and animals, from harm, as well as protecting against decreased visibility and damage to crops, vegetation, and buildings. The EPA has set national air quality standards for six common air pollutants: Nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), particulate matter (PM), carbon monoxide (CO), and lead (Pb).
- Sensitive populations include individuals with asthma, children, and older adults.
- The AQI takes a daily measure of four of the six common measures and determines on a scale of 0 to 500 how healthy the air quality is. The scale measures as: Good (0-50), Moderate, (51-100), Unhealthy for Sensitive Groups (101-150), Unhealthy (151-200), Very Unhealthy (201-300), and Hazardous (301-500).
- In many U.S. communities, AQI values are usually below 100, with higher values occurring just a few times a year. Larger cities typically have more air pollution than smaller cities, so their AQI values may exceed 100 more often. AQI values higher than 200 are infrequent, and AQI values above 300 are extremely rare—they generally occur only during events such as forest fires.



← **Michigan DNRE Air Monitoring Division:** Michigan has several sites that monitor air quality state wide. Not all sites monitor every toxin on every day. Due to the variations from day-to-day, it is easier to look at air quality regionally. The following tables include annual summaries from different Metropolitan Statistical Areas (MSAs). For this report, air quality index statistics include Detroit Metro, Grand Rapids-Muskegon-Holland, Flint, and Lansing-East Lansing MSAs.

→ **Trends:**

MSA: Detroit

Between 1998 and 2008, the highest recorded AQI value was 204 in 2003, but the index values have remained below 200 since 2004. In general, Detroit Metro Area has 40%-60% of the days monitored in the good air quality range. For the most recent year reported, 2008, the percent of good air quality days was 62.7% of the days monitored with less than 2% of days in the Unhealthy for Sensitive Group range and less than 1% of days in the Unhealthy index range.

Year	Number of Days AQI was measured	Percent of Days when Air Quality in Detroit Metro Area was...				Max AQI# Value for year
		Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	
1998	182	56.0%	28.0%	14.3%	1.6%	201
1999	365	52.1%	36.7%	9.0%	2.2%	177
2000	366	40.7%	54.4%	4.6%	0.3%	159
2001	365	40.3%	48.5%	9.9%	1.4%	174
2002	365	40.8%	49.3%	6.8%	3.0%	197
2003	365	39.2%	53.4%	5.8%	1.6%	204
2004	366	46.7%	48.9%	4.4%	0.0%	144
2005	365	44.4%	44.9%	8.8%	1.9%	179
2006	365	54.8%	41.4%	3.6%	0.3%	188
2007	365	52.1%	41.9%	4.9%	1.1%	161
2008	311	62.7%	35.0%	1.9%	0.3%	173

Year	Number of Days AQI was measured	Percent of Days when Air Quality in Flint was...				Max AQI# Value for year
		Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	
1998	184	65.8%	28.3%	6.0%	0.0%	150
1999	244	64.8%	25.8%	9.0%	0.4%	154
2000	245	71.4%	26.1%	2.4%	0.0%	129
2001	245	64.1%	27.3%	8.2%	0.4%	179
2002	245	61.6%	29.8%	8.2%	0.4%	154
2003	243	65.4%	29.6%	4.1%	0.8%	190
2004	246	75.2%	23.2%	1.6%	0.0%	124
2005	361	79.8%	17.2%	3.0%	0.0%	128
2006	242	77.3%	22.3%	0.4%	0.0%	101
2007	241	67.2%	29.9%	2.9%	0.0%	135
2008	214	80.8%	18.2%	0.9%	0.0%	111

← Trends:

MSA: Flint

Between 1998 and 2008, the highest recorded AQI value was 190 in 2003, but the index values have remained at or below 135 since. In general, Flint MSA has 60%-80% of the days monitored annually in the good air quality range. For the most recent year reported, 2008, the percent of good air quality days was 80.8% of the days monitored with less than 1% of the days in the Unhealthy for Sensitive Groups range and no days in the Unhealthy index range.

Year	Number of Days AQI was measured	Percent of Days when Air Quality in Grand Rapids Metro Area was...				Max AQI# Value for year
		Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	
1998	365	64.4%	26.6%	7.1%	1.9%	190
1999	219	58.4%	27.9%	11.9%	1.8%	192
2000	242	75.6%	22.7%	1.7%	0.0%	127
2001	240	66.3%	26.7%	6.3%	0.8%	166
2002	242	66.5%	24.8%	5.8%	2.9%	182
2003	242	71.9%	24.8%	2.9%	0.4%	151
2004	241	79.3%	20.7%	0.0%	0.0%	94
2005	365	56.2%	34.5%	8.5%	0.8%	195
2006	243	80.7%	18.1%	1.2%	0.0%	107
2007	243	69.5%	25.1%	4.9%	0.4%	177
2008	285	62.5%	36.5%	0.7%	0.4%	161

→ Trends:

MSA: Grand Rapids - Muskegon - Holland

Between 1998 and 2008, the highest recorded AQI value was 195 in 2005, but the index values have remained below 180 since then. In general, the Grand Rapids-Muskegon-Holland MSA has 60%-70% of the days monitored in the good air quality range. For the most recent year reported, 2008, the percent of good air quality days was 62.5% of the days monitored with less than 1% of days in the Unhealthy for Sensitive Groups range and Unhealthy index range.

Year	Number of Days AQI was measured	Percent of Days when Air Quality in Lansing was...				Max AQI# Value for year
		Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	
1998	365	78.1%	12.9%	7.1%	1.9%	197
1999	260	71.9%	22.7%	5.0%	0.4%	154
2000	243	74.5%	24.7%	0.8%	0.0%	119
2001	245	68.6%	27.3%	3.3%	0.8%	159
2002	242	64.5%	28.9%	6.6%	0.0%	150
2003	241	74.3%	18.3%	7.1%	0.4%	164
2004	240	79.6%	20.0%	0.4%	0.0%	109
2005	244	66.8%	29.9%	3.3%	0.0%	150
2006	365	75.1%	20.3%	3.8%	0.8%	174
2007	239	75.3%	22.6%	2.1%	0.0%	124
2008	214	81.3%	18.2%	0.5%	0.0%	106

← Trends:

MSA: Lansing - East Lansing

Between 1998 and 2008, the highest recorded AQI value was 197 in 1998, and the index values have remained below 190 since then. In general, the Lansing-East Lansing MSA has 60%-70% of the days monitored in the good air quality range. For the most recent year reported, 2008, the percent of good air quality days was 81.3% of the days monitored with less than 1% of the days in the Unhealthy for Sensitive Groups range and no days in the Unhealthy index range.

Links to Other Sources of Information:

U.S. Environmental Protection Agency Air Emissions Sources: <http://www.epa.gov/air/emissions/where.htm>

Michigan Department of Natural Resources & Environment – Air Monitoring: http://www.michigan.gov/deq/0,1607,7-135-3310_4195-79055--00.html

CDC – National Environmental Public Health Tracking Network: <http://ephtracking.cdc.gov/showHome.action>

Links to Related Public Health Programs:

MDCH Asthma Prevention: http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_48758---00.html

CDC – Air Pollution & Respiratory Health: <http://www.cdc.gov/nceh/airpollution/default.htm>

EPA – Patient Exposure & Air Quality Index: <http://www.epa.gov/air/oaqps/eog/ozonhealth/aqi.html>

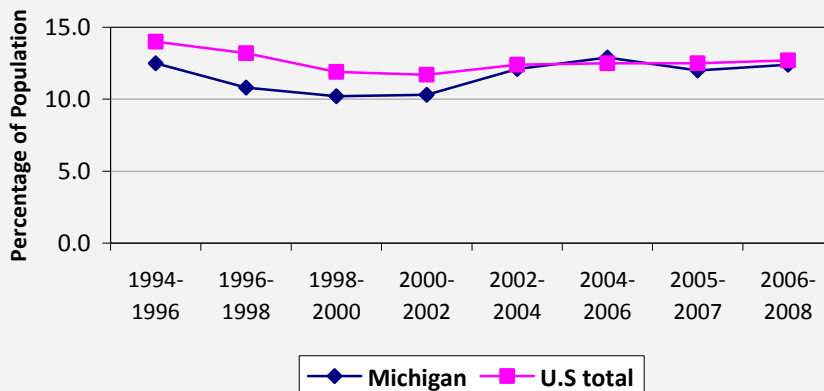
Adults & Children in Poverty

Indicator Definition: The U.S. Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's income is less than the family's threshold, then that family is considered in poverty. The thresholds are updated annually for inflation with the Consumer Price Index (CPI-U). For 2009, the poverty threshold for a single individual is an income of \$10,956, and for a family of four, the threshold is \$21,954.

Indicator Overview:

- The 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.
- Beginning with the late 1950s, the poverty rate for all Americans fell from 22.4 percent. These numbers declined steadily, dropping as low as 11.1% in 1973. Then the poverty rate began to cycle up to as high as 15.2% in 1983. The national poverty rate has remained between 11% and 15% since 1973ⁱⁱ.
- Poverty rates can vary greatly across subpopulations.
- Poverty rates for those who are aged 65 or older have decreased dramatically since the 1960s while the poverty rate for children remains higher than the total population rateⁱⁱ.

Poverty in Michigan and the United States, three year averages 1994-1996 thru 2006-2008



← Trends:

Prior to 2000, the poverty level in Michigan was consistently lower than the national average, reaching a low for the past decade of 10.2% compared to the national rate of 11.9% (1998-2000). Since 2000, the poverty level in Michigan has remained more consistent with the national percentage. According to the National Center for Children in Poverty, in 2008, 37% (896,344) of children lived in low-income families (those living below 200% of the federal poverty level) in Michigan, compared to the National rate of 41%. Children living below the federal poverty threshold in 2008 was 18% compared to the national rate of 19%.

→ Subpopulation Variations:

The poverty rate for families lead by single women (32%) is dramatically higher than the rate for married couple families (4.4%). Among racial and ethnic subgroups, rates increase to 13.9% for Hispanic married couples and 50.5% for Hispanic single mothers. Single mothers with children under 5 years old have a poverty rate of 47.6%. The poverty rate for Hispanic mothers with children under 5 years old is 69%.

POVERTY RATES FOR FAMILIES AND PEOPLE FOR WHOM POVERTY STATUS IS DETERMINED IN MICHIGAN, ACS 2008 DATA

	Total	White	Black	Hispanic
All families	10.5%	7.8%	27.0%	23.8%
With related children under 18 years	16.6%	12.6%	34.7%	30.7%
With related children under 5 years only	18.5%	16.1%	32.4%	29.8%
Married-couple family	4.4%	3.7%	9.9%	13.9%
With related children under 18 years	6.2%	5.1%	12.9%	18.2%
With related children under 5 years only	6.1%	5.6%	11.3%	15.1%
Female householder, no husband present, family	32.0%	27.2%	39.6%	50.5%
With related children under 18 years	40.7%	36.7%	46.3%	56.2%
With related children under 5 years only	47.6%	48.7%	42.2%	69.0%

Links to Other Sources of Information:

- U.S. DHHS Poverty Guidelines, Research, & Measurement: <http://aspe.hhs.gov/poverty/index.shtml#latest>
- Michigan Poverty Awareness: <http://www.michigan.gov/poverty/0,1607,7-253-49518---,00.html>
- University of Michigan National Poverty Center: <http://www.npc.umich.edu/poverty/>
- Spotlight on Poverty: <http://spotlightonpoverty.org/>

Links to Related Public Health Programs:

- Michigan Medicaid Program: http://www.michigan.gov/mdch/0,1607,7-132-2943_4860---,00.html
- MDCH: Help finding Health Care: http://www.michigan.gov/mdch/0,1607,7-132-2943_52115---,00.html

Social, Economic, & Environmental Factors - 22

High School & College Graduation Rates

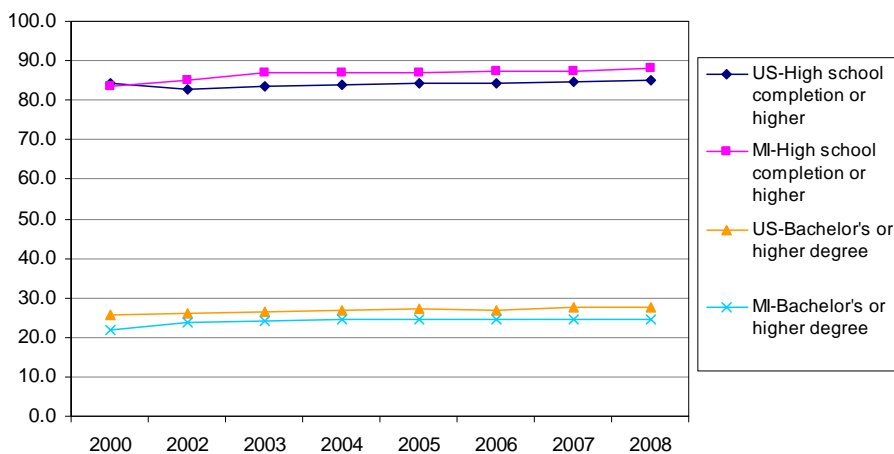
MICHIGAN 2010
CRITICAL
HEALTH
INDICATORS

Indicator Definition: The educational attainment level for the population aged 25 and older.

Indicator Overview:

- The U.S. Census Bureau collects educational attainment information annually through the American Community Survey (ACS) and Current Population Survey (CPS).
- 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 health care 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, US vs. Michigan, 2000-2008



← Trends:

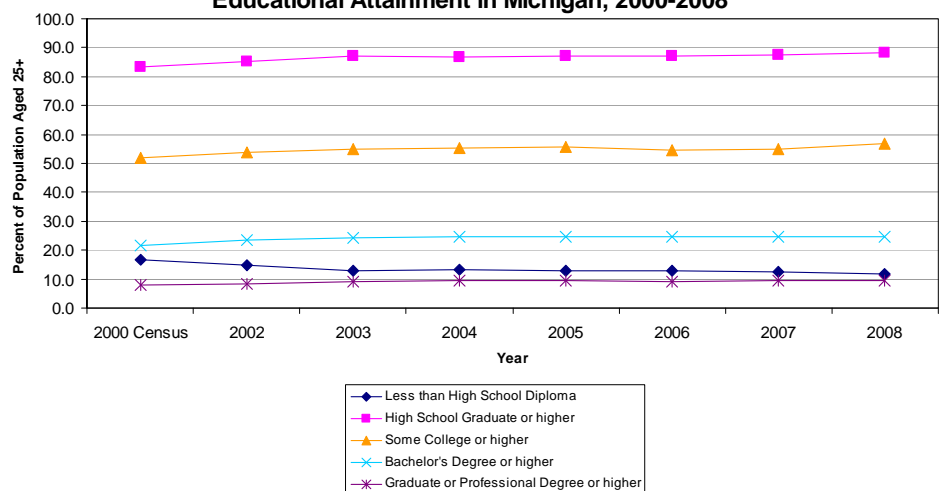
Since 2000, the ACS estimates for the percentage of Michigan's population with education level of completion of high school or higher remain above U.S. estimates. Both the Michigan and U.S. percentages are over 80% and approach 90%.

While Michigan tends to have a higher percentage of high school graduates than the U.S., the state trends for attainment of a Bachelor's degree remain lower than the national average.

→ Levels of Attainment:

Educational attainment is shown in the chart (right) beginning with the 2000 census and tracked on an annual basis with the American Community Survey (ACS) through 2008. The level of educational attainment increases over time, while the percentage of individuals who do not graduate from high school decreases. In 2008, about 65% of those who had graduated from high school also completed some college, and 28% had completed a Bachelor's Degree or higher.

Educational Attainment in Michigan, 2000-2008



Links to Other Sources of Information:

- U.S. Census Bureau – Educational Attainment: <http://www.census.gov/hhes/socdemo/education/>
- Michigan Center for Educational Performance & Information: <http://www.michigan.gov/cepi>
- National Center for Education Statistics: <http://www.nces.ed.gov/>

Links to Related Public Health or Similar Programs:

- MDELEG – Adult Education Program: http://www.michigan.gov/mdcd/0,1607,7-122-1680_2798---,00.html
- MDE – Educational Programs: <http://www.michigan.gov/mde/0,1607,7-140-43092---,00.html>

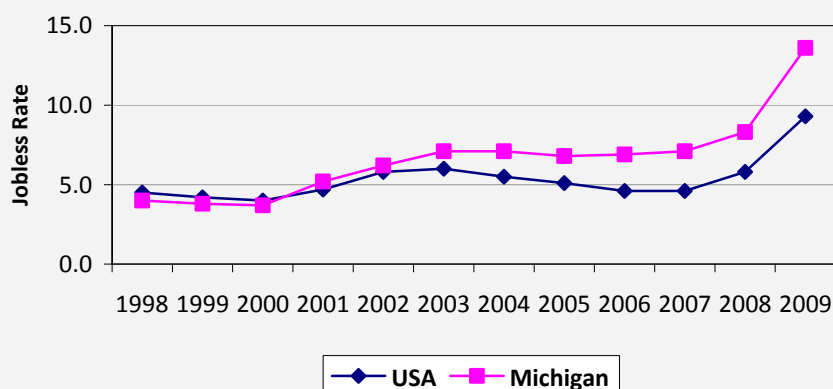
Unemployment Rate

Indicator Definition: The Unemployment (or Jobless) Rate is the percent of people in the Labor Force who are unemployed (= unemployed/labor force * 100).

Indicator Overview:

- Unemployment Rate, or Jobless Rate, is an indicator of the health of the economy, and can be used as a proxy in health status. With a larger percentage of the people out of work, fewer may be able to afford access to preventative 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 Energy, Labor, and Economic Growth, and housed at the Labor Market Information (LMI) site. Nationally, the US Department of Labor oversees the data.

The Jobless Rate in Michigan & the US



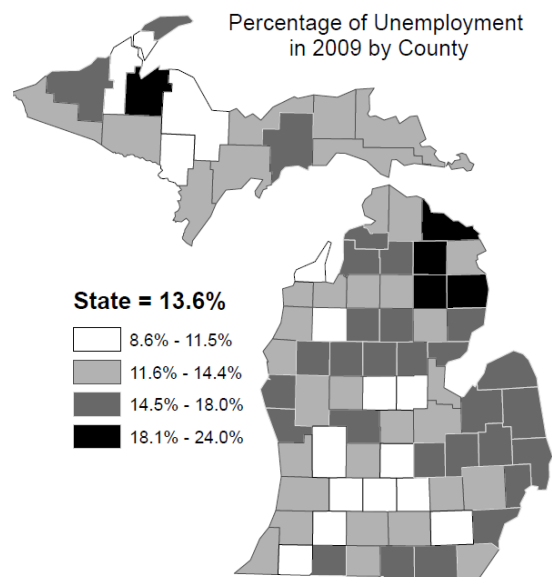
← Trends:

Beginning in the mid- to late-1990s, Michigan’s Jobless Rate was at or below the national Jobless rate, and it was down to 4 percent. Beginning in 2000, the Jobless rate at the state and national levels began to increase. With emerging economic issues, Michigan’s Jobless Rate increased more quickly than the national rate. From 2003 until 2007, the national Jobless Rate decreased by almost 2 points and leveled off, while Michigan only saw a marginal decrease. By 2009, the Jobless Rate nearly doubled from the 2007 levels. Michigan’s Jobless Rates was ranked one of the highest of all states.

→ County Average:

Between 2007 and 2009, the state-wide unemployment rate almost doubled from 7.1 to 13.6. In 2009, the county rates rose to a range of 8.6% to 24.0%. In other words, in some counties as few as 1 in 12 people were unemployed and in other counties as many as 1 in 4 were unemployed. The counties that were the hardest hit included Baraga, Presque Isle, Montmorency, Oscoda, and Alcona. These counties are all rural areas of northern Michigan.

The counties with the lower unemployment rates still had as few as 1 in 10 people unemployed, or more. Many of these counties had larger urban areas in combination with one of the state universities.



Links to Other Sources of Information:

U.S. Bureau of Labor Statistics: <http://www.bls.gov/bls/unemployment.htm>
 DELEG: Labor Market Information: <http://www.milmi.org/>

Links to Related Programs:

Michigan Department of Energy, Labor, and Economic Grow (DELEG) – Labor Market Information site: <http://www.milmi.org/>
 Michigan’s Jobs, Education, and Training (JET) program: <http://www.michigan.gov/dleg/0,1607,7-154-41500--,00.html>

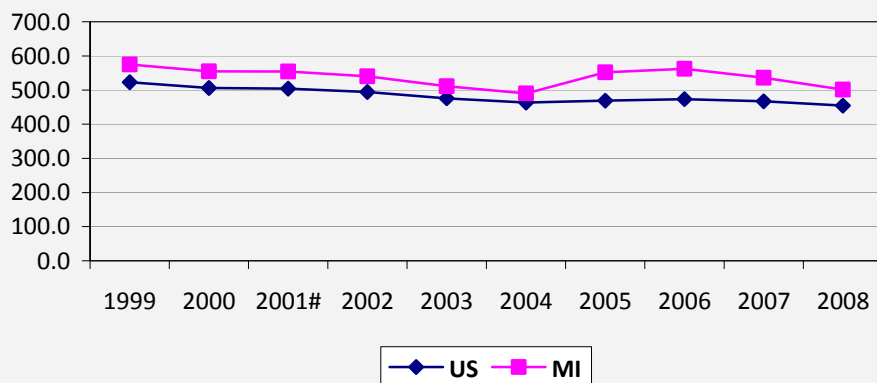
Violent Crime Rate

Indicator Definition: The number of Violent Crimes per 100,000 population.

Indicator Overview:

- According to the FBI Uniform Crime Reports, violent crime includes: murder and non-negligent manslaughter, forcible rape, robbery, and aggravated assault. These are all offenses that include force or threat of force.
- The data for the national set is collected from law enforcement agencies from around the U.S. who submit their data voluntarily to be included in the report.
- Over the last 10 years, nationally, about 60-64 percent of violent crimes were aggravated assaults, 28-32 percent were robberies, 6-7 percent were forcible rape, and just over 1 percent were murders.

Violent Crime Rate per 100,000 population



← Trends:

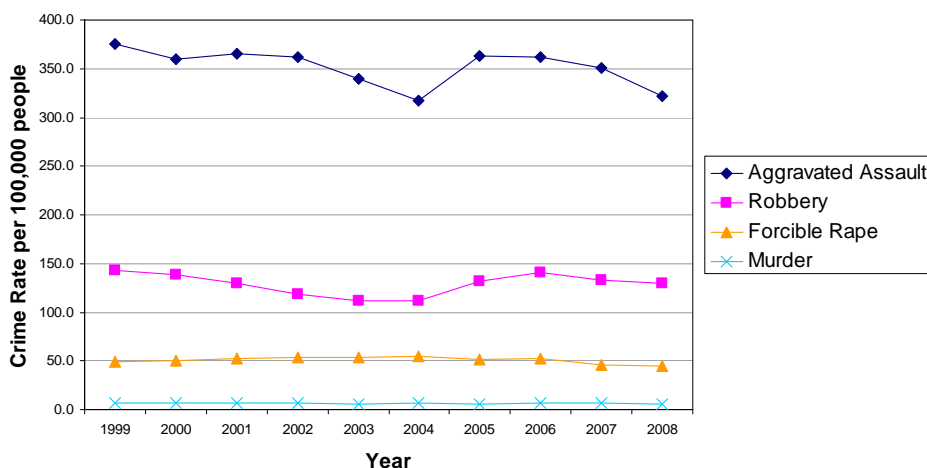
Overall, the U.S. violent crime rate has decreased from 523 down to 454 crimes per 100,000 people, or by approximately 13.1%. While Michigan tends to have a higher rate per 100,000 than the national rate, there was also a decrease in Michigan. Michigan dropped from 575 down to 502 per 100,000 people, which is a decrease by 12.8%.

#-murder and non-negligent homicide that occurred as a result of the events of Sept. 11, 2001, are not included in the National Data Set for this table.

→ Violent Crime in Michigan by Category:

As a whole, the violent crime rate in Michigan decreased from 1999 to 2008. In Michigan the distribution of the different types of violent crimes remain consistent as a percent of all violent crimes. Aggravated assaults accounted for 65 percent, robberies were 25 percent, forcible rapes were 9 percent, and murders accounted for 1 percent of the total. As seen in the graph, the crime rate for forcible rapes and murders has remained consistent, while aggravated assaults and robberies has fluctuated.

Violent Crime by Category



Links to Other Sources of Information:

The FBI's Uniform Crime Reports can be found at: <http://www.fbi.gov/ucr/ucr.htm#cius>
 The FBI's Children's Information page is: <http://www.fbi.gov/fbikids.htm>

Links to Related Public Health Programs:

Michigan's Victim Crime Services page is located at: http://www.michigan.gov/mdch/0,1607,7-132-54783_54853---,00.html
 Michigan's Injury and Violence Prevention program is: http://www.michigan.gov/mdch/0,1607,7-132-54783_54879---,00.html

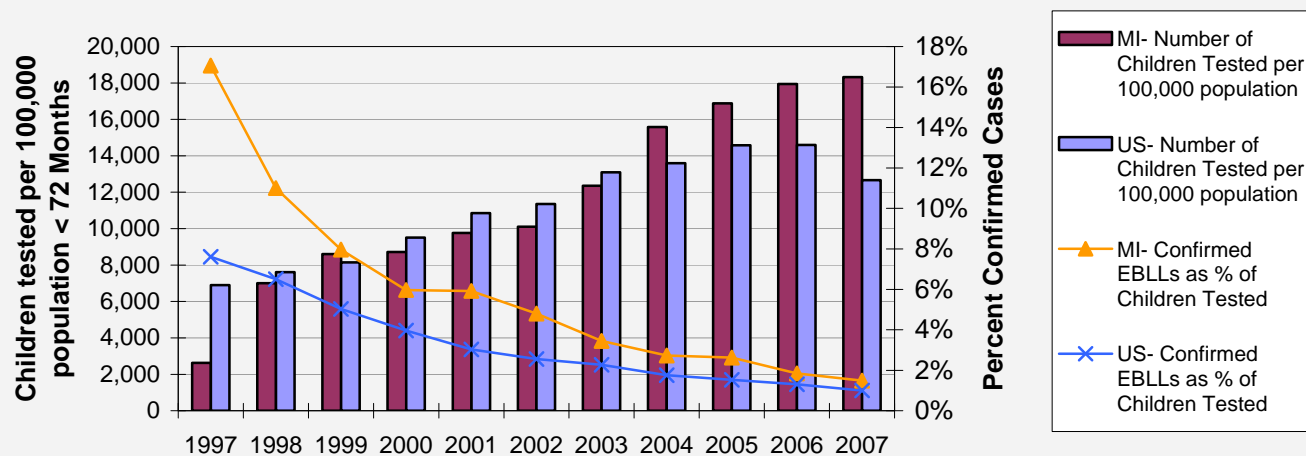
Lead Poisoning: Children's Blood Lead Levels

Indicator Definition: Children tested and confirmed with elevated Blood Lead Levels (EBLLs); BLLs are elevated when the test shows a concentration of 10 µg/dL of lead in the blood, or higher.

Indicator Overview:

- The Childhood Lead Poisoning Prevention Program (CLPPP) was created in response to Section 5474 (2) of Public Act 219 of 1998. The goal of the program was to test children for elevated blood lead levels. The confirmed cases of elevated blood lead levels and children at higher risk would be targeted for lead poisoning prevention and treatment programming.
- According to the American Academy of Family Physicians: High lead levels in the bodies of developing children can cause problems with the brain, kidneys, and bone marrow. Lower levels of lead in the body can still cause problems, such as trouble paying attention, behavior problems, learning difficulties and a fall in the IQ of young children.

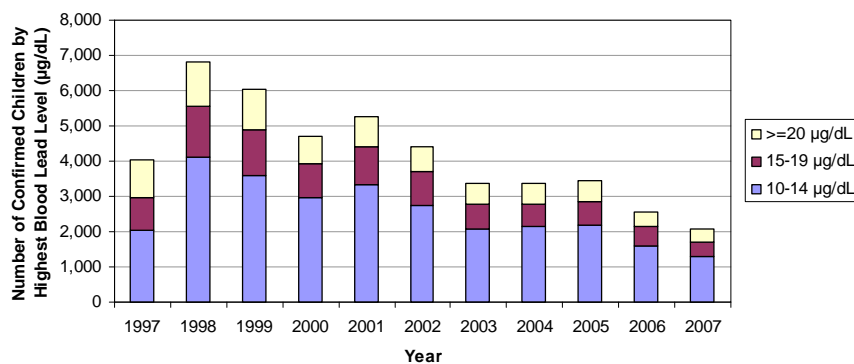
Testing for Elevated Blood Lead Levels in Children and the Percent of Confirmed Cases in Michigan & US, 1997-2007



→ Trends:

In general, as the programs increased the number of children tested since 1997, a lower percent of EBLL cases were documented each year, and this trend existed in Michigan and the U.S. as a whole. Michigan started out with about 17 percent of the children tested being confirmed with EBLL, and the percent of the children confirmed with EBLLs has decreased since 1997. As the number of confirmed cases decreased over time, the distribution of the different ranges of elevated blood lead levels remained constant.

Elevated Blood Lead Levels in Children under 6 years



Links to Other Sources of Information:

- CDC Lead Poisoning Prevention: <http://www.cdc.gov/nceh/lead/tips.htm>
 U.S. Consumer Product Safety Commission (CPSC): Lead Recalls: <http://www.cdc.gov/nceh/lead/Recalls/default.htm>
 American Academy of Family Physicians: Preventing & Treating Lead Poisoning in Children: <http://www.aafp.org/afp/20000801/559ph.html>

Links to Related Public Health Programs:

- Michigan's Children Lead Poisoning Prevention Program (CLPPP): http://www.michigan.gov/mdch/0,1607,7-132-2942_4911_4913---,00.html
 Michigan's Healthy Homes Program: http://www.michigan.gov/mdch/0,1607,7-132-2940_2955_2983---,00.html

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1	Life Expectancy at Birth and at Age 65
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Life Expectancy at birth by sex and race in Michigan, MDCH: http://www.mdch.state.mi.us/pha/osr/deaths/lifexrctrend.asp iii. FastStats Life Expectancy in U.S., CDC: http://www.cdc.gov/nchs/fastats/lifexpec.htm iv. National Center for Health Statistics (NCHS) Vital Statistics reports http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_10.pdf
2	Infant Mortality Rate
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Infant Mortality Rates in Michigan, MDCH: http://www.michigan.gov/mdch/0,1607,7-132-2944_4669_4694---,00.html iii. FastStats Life Expectancy in U.S., CDC: http://www.cdc.gov/nchs/fastats/lifexpec.htm iv. National Center for Health Statistics (NCHS) Vital Statistics reports http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_10.pdf
3	Unintended Pregnancy
	<ul style="list-style-type: none"> i. Michigan Pregnancy Risk Assessment Monitoring (PRAMS): www.michigan.gov/prams ii. Michigan Department of Community Health. Michigan Teen Pregnancy Prevention Initiative. www.michigan.gov/tppi
4	Injury Mortality
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Leading Causes of Fatal Injuries, MDCH: http://www.mdch.state.mi.us/pha/osr/index.asp?Id=29 iii. Fatal Injury Data, CDC: http://www.cdc.gov/injury/wisgars/fatal.html iv. National Center for Health Statistics (NCHS) Vital Statistics reports http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_10.pdf
5	Self-reported Health Status
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Life Expectancy Indicator. http://www.conferenceboard.ca/HCP/Details/health/life-expectancy.aspx iii. Miilunpalo et al. (1997). Self-rated health status as a health measure: The predictive value of self-reported health status on the use of physician services and on mortality in the working-age population. <i>Journal of Clinical Epidemiology</i>. Volume 50, Issue 5, May 1997, Pages 517-528. iv. Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs) v. Centers for Disease Control and Prevention (CDC). <i>Behavioral Risk Factor Surveillance System Survey Data</i>. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
6	Chronic Disease Prevalence
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs) iii. Centers for Disease Control and Prevention (CDC). <i>Behavioral Risk Factor Surveillance System Survey Data</i>. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
7	Serious Psychological Distress
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs) iii. Centers for Disease Control and Prevention (CDC). <i>Behavioral Risk Factor Surveillance System Survey Data</i>. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss) iv. Text and description of Kessler 6 scoring. http://www.hcp.med.harvard.edu/ncs/k6_scales.php v. Kessler, R.C., Barker, P.R., Colpe, L.J., Epstein, J.F., Gfroerer, J.C., Hiripi, E., Howes, M.J., Normand, S-L.T., Manderscheid, R.W., Walters, E.E., Zaslavsky, A.M. (2003). Screening for serious mental illness in the general population <i>Archives of General Psychiatry</i>. 60(2), 184-189.

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8	Infectious Diseases
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9	Smoking
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs) iii. Centers for Disease Control and Prevention (CDC). <i>Behavioral Risk Factor Surveillance System Survey Data</i>. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
10	Physical Activity
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs) iii. Centers for Disease Control and Prevention (CDC). <i>Behavioral Risk Factor Surveillance System Survey Data</i>. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
11	Binge Drinking
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs) iii. Centers for Disease Control and Prevention (CDC). <i>Behavioral Risk Factor Surveillance System Survey Data</i>. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
12	Nutrition
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs) iii. Centers for Disease Control and Prevention (CDC). <i>Behavioral Risk Factor Surveillance System Survey Data</i>. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
13	Obesity
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs) iii. Centers for Disease Control and Prevention (CDC). <i>Behavioral Risk Factor Surveillance System Survey Data</i>. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
14	Health Care Expenditures
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Centers for Medicare & Medicaid Services. National Health Expenditures Data. http://www.cms.gov/NationalHealthExpendData/05_NationalHealthAccountsStateHealthAccountsResidence.asp#TopOfPage iii. Kaiser Foundation. State Profiles – Michigan – Health Costs & Budgets. http://www.statehealthfacts.org/profileind.jsp?cat=5&rgn=24&cmprgn=1

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15	Insurance Coverage
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16	Unmet Medical, Dental, & Prescription Drug Needs
	<ul style="list-style-type: none"> i. Institute of Medicine, <i>State of the USA Report</i>, 2009. ii. Michigan Department of Community Health. Michigan Behavioral Risk Factor Surveillance System, 2000-2009. (www.michigan.gov/brfs) iii. Centers for Disease Control and Prevention (CDC). <i>Behavioral Risk Factor Surveillance System Survey Data</i>. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2000-2009. (www.cdc.gov/brfss)
17	Preventive Services
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18	Immunizations
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19	Preventable Hospitalizations
	<ul style="list-style-type: none"> i. Michigan Department of Community Health. Ambulatory Care Sensitive Hospitalizations Index. http://www.mdch.state.mi.us/pha/osr/index.asp?Id=15
20	Air Quality Index (AQI)
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21	Adults & Children in Poverty
	<ul style="list-style-type: none"> i. U.S. DHHS Poverty Guidelines, Research, & Measurement: http://aspe.hhs.gov/poverty/index.shtml#latest ii. University of Michigan National Poverty Center. http://www.npc.umich.edu/
22	High School & College Graduation Rates
	<ul style="list-style-type: none"> i. U.S. Census Bureau – Educational Attainment: http://www.census.gov/hhes/socdemo/education/

Sources by Indicator

23	Unemployment Rate
	<ul style="list-style-type: none"> i. U.S. Bureau of Labor Statistics: http://www.bls.gov/bls/unemployment.htm ii. DELEG: Labor Market Information: http://www.milmi.org/
24	Violent Crime Rate
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