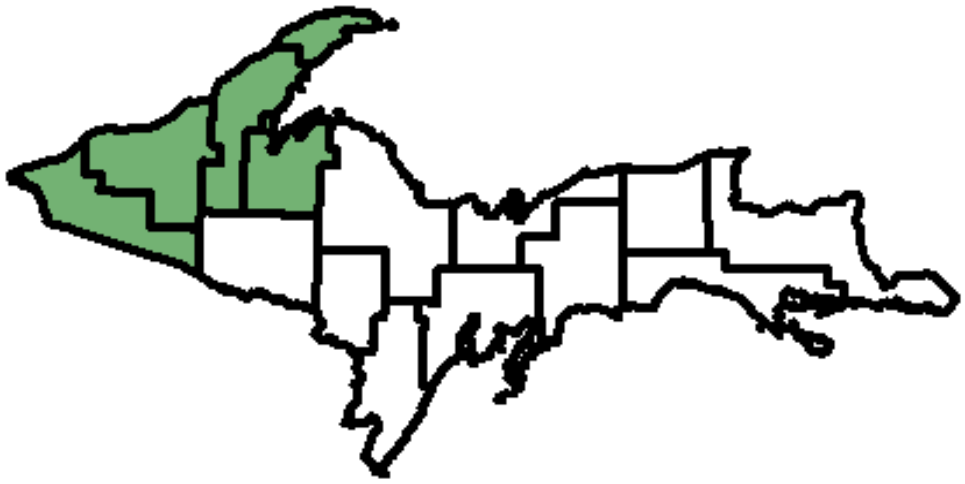
Western Upper Peninsula
2012 Regional Health Assessment

Baraga, Gogebic, Houghton, Keweenaw and Ontonagon Counties, Michigan and Iron County, Wisconsin



Conducted by Western Upper Peninsula Health Department

In Partnership with

Aspirus Grand View

Aspirus Keweenaw

Aspirus Ontonagon Hospital

Baraga County Memorial Hospital

Portage Health

Copper Country Community Mental Health Services

Gogebic County Community Mental Health Authority

Western Upper Peninsula Substance Abuse Services Coordinating Agency

Table of Contents

Executive Summary

Introduction

This 2012 Regional Health Assessment is the result of efforts to better understand and quantify the current health status and future health needs of Western U.P. residents. It was born of an innovative and unique partnership between many of the institutions responsible for promoting, treating and safeguarding the health of local residents, including all five area health systems, two community mental health agencies, the substance abuse services coordinating agency and the public health department, which serves all five counties of the Western U.P. region – Baraga, Gogebic, Houghton, Keweenaw and Ontonagon.

Perhaps the most exciting aspect of this Regional Health Assessment is the inclusion of results from a large local resident survey. Although county-level data, even for small, rural communities, is often included in state and national surveys, the sample sizes are small. To address this concern, a decision was made by the partnership to conduct a scientifically designed local survey capable of producing statistically significant results. The survey content was based on the Behavioral Risk Factor Surveillance System survey conducted annually by the Centers for Disease Control and was completed by over 2,500 adult residents across the Western U.P. region.

The following document contains a vast amount of information on a wide variety of indicators describing the health of local residents. Although no single indicator tells a complete story, each contributes to an overall understanding of community health needs. The reader will find data ranging from household incomes to how often residents see a healthcare provider, from high school graduation rates to how many adults have dental insurance, and hundreds of other indicators. Although it comes as no surprise that for many indicators, Western U.P. results tend to reflect state and national trends, the local survey data allow us to address some questions specific to our community such as: What does our population look like? Is cancer more or less prevalent here than elsewhere? How does economic status impact the health of our residents? Are local citizens accessing the health care services they need? Taken as a whole, the statistics portray past and current health conditions and can be used to identify trends for the future.

The most important take-away messages from this report may be different for each reader, depending on his or her unique perspective. However, three themes emerge from an analysis of health status and behaviors, access to care and health care utilization, and demographic and economic characteristics of the region. These themes will be highly relevant to service providers, policy-makers and other stakeholders when planning for the future:

1. The Impact of an Aging Population:

   Age is a risk factor for chronic disease. The Western U.P. has a much greater proportion of elderly residents than the state and nation.

2. The Importance of Prevention:

   Chronic diseases such as cardiovascular disease, cancer and diabetes are the leading causes of mortality and morbidity in the region, as they are in Michigan and in much of the world. The

leading root causes of preventable death – tobacco use and obesity – are risk factors prevalent among roughly one-quarter and one-third, respectively, of the region's adults.

3. The Effect of Income and Education on Health Status:

   Disparities of health status, behaviors and access to services between socio-economic groups – differences according to income and education – are far more pronounced than those between geographic areas.

Summary of Findings

The Western Upper Peninsula is a five-county region encompassing Baraga, Gogebic, Houghton, Keweenaw and Ontonagon counties in the rural and remote northwest corner of Michigan. The region, with 71,000 residents, has less than one percent of Michigan's population spread over almost 10 percent of the state's land area. Nearly half of residents live within five miles of Houghton/Hancock or Ironwood; the rest live in villages of fewer than 5,000 residents or low-density rural areas. The region is served by five hospitals. Many of the 7,000 residents of Iron County, Wisconsin access medical care in Gogebic County.

The Impact of an Aging Population:

Long-term economic stagnation has led many young people to emigrate from the area in search of economic opportunity. This, combined with a nation-wide trend toward declining birthrates, has resulted in a local population that is considerably older in age distribution compared with state and national demographics. In Michigan, 13.8 percent of residents are age 65-plus. In Houghton County, with its large college population, the age 65-plus percentage is 15.0; in Baraga County, it is 17.3 percent; and in Gogebic, Keweenaw and Ontonagon counties, and Iron County, Wisconsin, greater than 20 percent of residents are age 65-plus. The demographic imbalance has implications for rates of disease and disability and the need for health care services, long-term care and other types of support for the elderly.

The Importance of Prevention:

Chronic diseases such as heart disease, cancer, stroke, diabetes, and arthritis, are leading causes of death and disability in the Western U.P., as in the state and nation. Heart disease and cancer cause half of local deaths, at rates remarkably similar to national data. About one-in-ten Western U.P. adults has diabetes, and diabetes mortality rates in Houghton and Keweenaw counties are higher than statewide. An estimated 69 percent of Western U.P. adults are either overweight or obese according to local survey data, compared with 66 percent statewide, so there should be great concern locally, as nationally, over the prospect of dramatically rising rates of diabetes in the future.

Other factors which lend themselves to prevention and significantly impact health status include:

- High rates of local tobacco and alcohol use contribute to chronic disease burden locally. About one-quarter of Western U.P. adults are current smokers and over half are either current or former smokers. An estimated 12.1 percent of local adults are heavy drinkers, compared with 7 percent statewide.
- Births to teens and to single mothers, and tobacco use during pregnancy, negatively impact the

health of both the mothers and their offspring. Although teen births nationally are on the decline, some Western U.P. counties are actually experiencing an increase in rates. Births to single mothers are increasing across all counties, with some county rates higher than 50 percent. As many as 35-40 percent of women smoked during pregnancy in some counties.

- Adolescent survey data indicate that local teens have high rates of alcohol and tobacco use, many sexually active teens do not use condoms or other forms of contraception, and some 40 percent are either overweight or obese (above the 85th percentile on age- and gender-graded tables.) These self-reported data, especially rates of tobacco use and obesity, raise the risk for heart disease, cancer and diabetes later in life.
- The most commonly reported infectious diseases in the region are chlamydia, varicella (chickenpox), pertussis (whooping cough), hepatitis C, and food-borne illnesses. Successful prevention strategies such as increased vaccination, health screening and education exist that could reduce their prevalence and impact.
- Dental disease is one of the most common chronic illnesses in the U.S. and disproportionately affects low-income adults and children. It contributes to many negative health outcomes, and in spite of this, an estimated 60 percent of low-income adults and as many as 43 percent of children with Medicaid coverage in the Western U.P. received no dental services in the past year.
- An estimated 24 percent of Western U.P. adults report a history of depression, which is a treatable condition with multiple negative health consequences. The prevalence of mental illness combined with a reported shortage of mental health services for adults and children indicates an unmet community health need.

Prevention has been proven to be a cost-effective strategy and must be utilized to address the burgeoning crisis of exploding healthcare costs and chronic disease burden. As stated by Dr. Thomas Frieden, director of the Centers for Disease Control, "Prevention is a best buy in the health care sector."

The Effect of Income and Education on Health Status:

Outside of the Houghton-Hancock area, unemployment in 2009-2011 exceeded 15 percent in most villages and townships. In 2010, more than 20 percent of residents in Houghton and Gogebic counties, the region's most populous counties, lived in households with incomes below the federal poverty standard, and child poverty in Gogebic County topped 30 percent. Across all counties, median household income and per capita income are well below state and national levels.

There have been about 700 births per year to area residents in recent years (750 including Iron County.) About half of local births are paid by Medicaid – including greater than 50 percent of births to residents of all counties except Houghton, and 73 percent of Baraga County births in 2009. Between 15 and 20 percent of the region's residents are on Medicaid, and among children aged 0-17, county Medicaid enrollment rates are between 35 and 50 percent. Every county in the region has multiple federal Health Professional Shortage Area (HPSA) designations. An estimated 18.6 percent of adults aged 18-64 have no health insurance, and for an estimated 22.3 percent of adults, cost is a barrier to health access.

Locally, low-income adults, and those with lower levels of education, report poorer physical and mental health, higher rates of disease and disability, and lower rates for annual physical exams and appropriately timed cancer screenings. Inequalities of socioeconomic status contribute to disparities in access to services, and socioeconomic factors (income and education) strongly correlate with health status.

Conclusions

Over the course of the last century, life expectancies lengthened dramatically due to developments in medical care, antibiotics and vaccines, and improved sanitation and worker safety. While there are parts of the developing world where infectious and vector-borne diseases like tuberculosis, HIV-AIDS, dysentery and malaria are leading causes of death, increasingly mortality and morbidity worldwide are the result of chronic diseases. Heart disease, cancer and diabetes are among the most prominent diseases of affluent countries. Tobacco use and obesity are the leading root causes of preventable death in the United States. It seems that poor diet and lack of physical activity are likely to become the leading killers of the 21st Century, just as microbes were for most of human history.

Age can be thought of as the number one risk factor for chronic disease. As fewer people die in infancy, childhood, childbirth and as a result of infections and vaccine-preventable diseases, more people live long enough to develop progressive disease like cardiovascular disease, cancer, and chronic diseases of the lungs, kidneys and other organs that can take decades to emerge. Because the Western U.P. has relatively more older adults as a percentage of the total population, management of chronic disease will play an increasingly large role in regional health care. Compared to the state and nation, local counties have up to twice the percentage of residents aged 65-plus. The impact of this is that the Western U.P. currently has the demographics and health care needs anticipated for the United States 10-20 years from now, when most Baby Boomers (residents born roughly between 1946 and 1964) will have retired.

An analysis of county-level health statistics such as leading causes of death, combined with a thorough review of the results of the locally conducted behavioral risk factor survey of the health status, health habits and access to care of more than 2,500 Western U.P. adults, confirms that health disparities are not primarily between regions, but instead closely correlate with socio-economic factors like employment status, income and education. The differences in health needs are much more pronounced between socioeconomic levels than between counties, and between the Western U.P. and the rest of Michigan. It is too early to predict all the long-term impacts of the federal Affordable Care Act on health disparities. Its central provisions should increase access to health insurance and preventive health care services for vulnerable populations.

This report can be used as a baseline assessment against which to measure future community health improvement efforts. It is the intent of the Western U.P. Community Health Assessment partnership that this document may also be read as a call to action to develop strategies to ensure that all Western Upper Peninsula residents have opportunities to live healthier lives.

Project Background and Acknowledgements

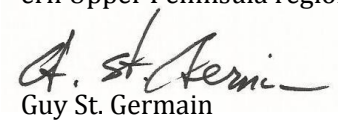
The following report documents findings from the regional community health needs assessment conducted in 2012 by Western Upper Peninsula Health Department in partnership with health care providers Aspirus Grand View, Aspirus Keweenaw, Aspirus Ontonagon Hospital, Baraga County Memorial Hospital, Portage Health, Copper Country Mental Health Services, Gogebic County Community Mental Health Authority, and Western Upper Peninsula Substance Abuse Service Coordinating Agency. The assessment covers the Western U.P. region: Baraga, Gogebic, Houghton, Keweenaw and Ontonagon counties in Michigan, the jurisdiction of the health department and the primary catchment area of the five hospitals. For many indicators, Iron County, Wisconsin data are given as available, because many residents of Iron County access health care services at Aspirus Grand View, located in Ironwood, Michigan. All references to Iron County in this report denote Iron County, Wisconsin rather than Iron County, Michigan.

The purpose of this assessment is to provide a picture of the health status and needs of the region's 70,000 residents. Data for the assessment report were gathered from a wide array of published sources, from a survey of more than 2,500 local adults, and from health care providers. Published sources included the U.S. Census, the American Community Survey, and statistics compiled by the Michigan Department of Community Health, the Wisconsin Division of Public Health, and other government and private agencies.

The local health survey is perhaps the most ambitious and unique element of this project. A shortcoming of national and state health surveys is that the samples are designed to represent the national or state population as a whole. This means that in small population cohorts, like the Western U.P. counties, not enough residents will be included in the sample to make reasonable estimates at the county level. The addition of local data to this report allows us to understand the health needs of our citizens more thoroughly.

The local survey was designed and administered by health department staff. In addition, many hours of labor were donated by members of the Western U.P. Retired and Senior Volunteer Program to accomplish the mass mailing and data entry. Dr. Adam Wellstead, Assistant Professor at Michigan Technological University, assisted with the statistical analysis of the survey responses.

This report is intended to inform health practitioners, planners, policymakers, and the public. It can be read as a baseline accounting of the region's health status and used to determine priorities for community health improvement. If knowledge is power, it is hoped that this report will empower citizens and health care professionals alike to work effectively for improved health and wellbeing in the Western Upper Peninsula region.



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How to Use This Report

Report Organization

The report begins with statistics describing the demographics (population counts and characteristics) of the region, followed by a section focused on populations considered more vulnerable to poor health outcomes. Access to care is assessed next. From there the report follows the chronology of life, beginning with measures of maternal and infant wellbeing, followed by health data on young children and adolescents. Chronic disease and mortality statistics are the next major topics addressed. Substance abuse data and statistics related to public safety follow that section. The report concludes with the complete findings of the locally conducted behavioral risk factor survey, modeled after the annual nation-wide survey used to contribute data to the CDC's Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is used to estimate the prevalence of various health behaviors, medical conditions, and preventive health care practices among U.S. adults. In addition to the complete set of local survey findings appearing at the end of this report, findings relevant to a particular topic are interspersed throughout the document, easily recognizable by the following text box format:

Local Survey Findings: Cancer Prevalence

- Among Western U.P. adults, an estimated 11.6% have ever been told they had skin cancer or any other type of cancer. Rates of lifetime diagnosis were higher in Gogebic and Ontonagon counties.
- The likelihood of a cancer diagnosis increases with increasing age. The higher rates observed in Gogebic and Ontonagon counties are consistent with greater than 20% of the population of those counties being aged 65 or older as of the 2010 U.S. Census.

Data Forms

The data included in the report are generally summarized in one of four forms: trends over time, single-year tabulations, multi-year tabulations, or snapshots in time. Trends are shown when multiple years of data are available and when examining an indicator over time tells something meaningful about a problem that is increasing, being resolved, or not responding to intervention efforts. Single-year tabulations or snapshots are used when a single year's worth of data or a snapshot gives a reasonably representative picture of an indicator, or when trend data are not available. Multi-year tabulations are used for rare or low-probability events where single-year calculated rates fluctuate greatly with a change of relatively few events.

Statistics

Population Statistics

It is important to understand several statistical concepts when using this report. Wherever possible, data resulting from an accounting of all individuals appear in this report. Examples of these types of data are population statistics taken from the U.S. Census, and annual birth and death counts. For the time period in which they were collected, these data have no uncertainty associated with them.

Estimates and Confidence Intervals

A second type of statistic commonly found in this report is an estimate based on a survey administered to a random sample of the population. Examples of this type of data are educational attainment estimates produced by the American Community Survey and rates of binge drinking prevalence calculated from the Michigan Behavioral Risk Factor Survey. Sampling error is unavoidable and arises from estimating a population characteristic by looking at only one portion of the population rather than the entire population. The degree of uncertainty introduced into these estimates by sampling error is conveyed to the reader by the use of confidence intervals. These intervals do not take into account response errors, which result if data is incorrectly requested, provided, or recorded.

In this report, 95 percent confidence intervals are most commonly used. A confidence interval is a range around a measurement that conveys how precise the measurement is. Narrower confidence intervals indicate more precise estimates. For example, suppose a survey given to a random sample of Michigan adults indicated that 23.3% ± 1.3% of those adults were current smokers (95 percent confidence interval indicated). This means that there is a 95 percent chance that between 22.0% and 24.6% of Michigan adults are current smokers. There is a 5 percent chance that the current adult smoking rate is lower than 22.0% or higher than 24.6%.

When comparing estimates that have confidence intervals associated with them, non-overlapping confidence intervals are an indication that a statistically significant difference exists between the two groups being compared. If confidence intervals overlap, then a statistically significant difference may or may not exist.

Infrequent Events and Their Effect on Rates

A rate of a particular event occurring within a population is calculated by dividing the number of events by the number of persons in the population of interest. A small number of events in the numerator of this calculation results in a rate that is highly sensitive to small changes in the numerator. For example, two events versus one doubles the observed rate, as does four events versus two. In general, less than twenty events in numerator tends to yield an unreliable result due to random error. For this reason, some secondary sources do not publish rates for events that occur fewer than twenty times in a specified time interval.

Defining the Western U.P.

In the context of this report, the terms Western Upper Peninsula, Western U.P., and Western U.P. region all refer to an area encompassing Baraga, Gogebic, Houghton, Keweenaw and Ontonagon counties in Michigan.

Sources:

http://www.iarc.fr/en/publications/pdfs-online/epi/cancerepi/CancerEpi-6.pdf

http://www.cscu.cornell.edu/news/statnews/stnews73.pdf

http://www.doh.wa.gov/Portals/1/Documents/5500/ConfIntGuide.pdf

Demographics Chapter Introduction

Demography, the starting point for community health needs assessment, is the study of statistical characteristics of a population; of its various cohorts such as age, gender and ethnic groups; and of trends and rates of change. Demographics provide a count of people living in a county, region, or catchment area for health care services. Trends in population growth or decline are useful in planning for future programs and resource allocations. Furthermore, the distribution of a population among its subsets or cohorts can be used to understand the needs of residents in greater detail.

Age and gender are the two most important demographic characteristics in health assessment. Many health conditions, diagnoses and procedures, such as pregnancy, prostate cancer, and mammography, are gender-exclusive. And age is a primary factor in planning for prevention and health care services. The health care needs of infants, pre-adolescents, teens, young adults and older adults vary greatly. Guidelines for preventive services like immunizations and cancer screenings are age-specific. In general, rates of disease, disability and mortality increase with age. An area with many older adults and a large group of Baby Boomers (residents born roughly between 1946 and 1964) can expect to have higher gross rates of the diseases of aging such as heart disease, cancer, stroke and chronic obstructive pulmonary disease (COPD).

The total population of the five Michigan counties declined by about 1 percent from 2000 to 2010, to around 71,000, with declines in Gogebic, Keweenaw and Ontonagon counties largely offset by modest increases in Houghton and Baraga counties. Over the decade, Gogebic County's population declined by 843 persons, or 5.4 percent; Ontonagon County lost 1,038, or 13.3 percent; and Iron County lost 845, or 13.8 percent. In the latter two counties, this represents an acceleration of a trend that has been underway for many decades. In fact, in the early 1900s, the population of the region was twice what it is today. Declining populations affect both the need for services and the resources available. Declining school enrollments over time inevitably lead to closing of facilities and consolidation.

Throughout history, the search for economic opportunity has been an impetus for migrations of people. As young adults leave an area in search of work, the remaining population becomes relatively older, and birth rates decline. In every county in the study area, there are more adults age 65 and older as a percentage than the statewide figure of 13.8 percent (U.S. Census 2000). Houghton County's age distribution is closest to Michigan's, with 15.0 percent age 65 or older, owing in part to several thousand university students; among permanent residents, it is higher. In Baraga County, where birth rates have not declined as much as in other counties, 17.3 percent are age 65-plus. In the other counties, the differences are more pronounced—21.4 percent in Gogebic County, 24.0 percent in Keweenaw, 25.4 percent in Iron, and 26.4 percent in Ontonagon, nearly double the state percentage. The skewing of age distribution toward the older cohorts has profound implications on the needs for health care and human services.

In most parts of northern Michigan and Wisconsin, large majorities identify as White on census forms. The largest minority groups in the region are Native American populations centered in Baraga (Baraga County) and Watersmeet (Gogebic County). In Baraga County, 13 percent of the population in the 2010 census was in the category American Indian or Alaska Native, and when excluding the incarcerated population housed at Baraga Correctional Facility, the figure climbs to greater than 15 per-

cent. Given the fact that Native American families have accounted for more than one-quarter of births in recent years, it is reasonable to expect that the Native American population in Baraga County as a percentage may increase over time.

Local Focus

- The Western U.P. has a larger proportion of senior citizens and relatively fewer young people, similar to Japan and some Western European nations, and 10-20 years ahead of what demographers predict for the United States as the Baby Boomers enter old age.
- Birth rates are on the decline across the country. This trend is made more prominent locally by the migration of adults of child-bearing age leaving the area. As a result, the number of local births per year is declining, especially in Gogebic, Keweenaw and Ontonagon counties.
- The largest minority population is Native American, and the birth rate for this population in Baraga County has held steady as the birth rate in the majority White population has declined.
- Houghton County, with its larger cohort of 18-24 year olds, may differ somewhat in measures of health as young adults (and higher educated adults) tend to be healthier. This larger young adult population is due in part to the presence of two universities.

Potential Future Implications

- An aging population will increase the prevalence of many chronic diseases within our communities.
- Increased need for health services for the elderly is anticipated, including assisted living and long-term care facilities, and home health, hospice and other services.
- Decreased funding for schools and youth programs may result from declining populations of young people.

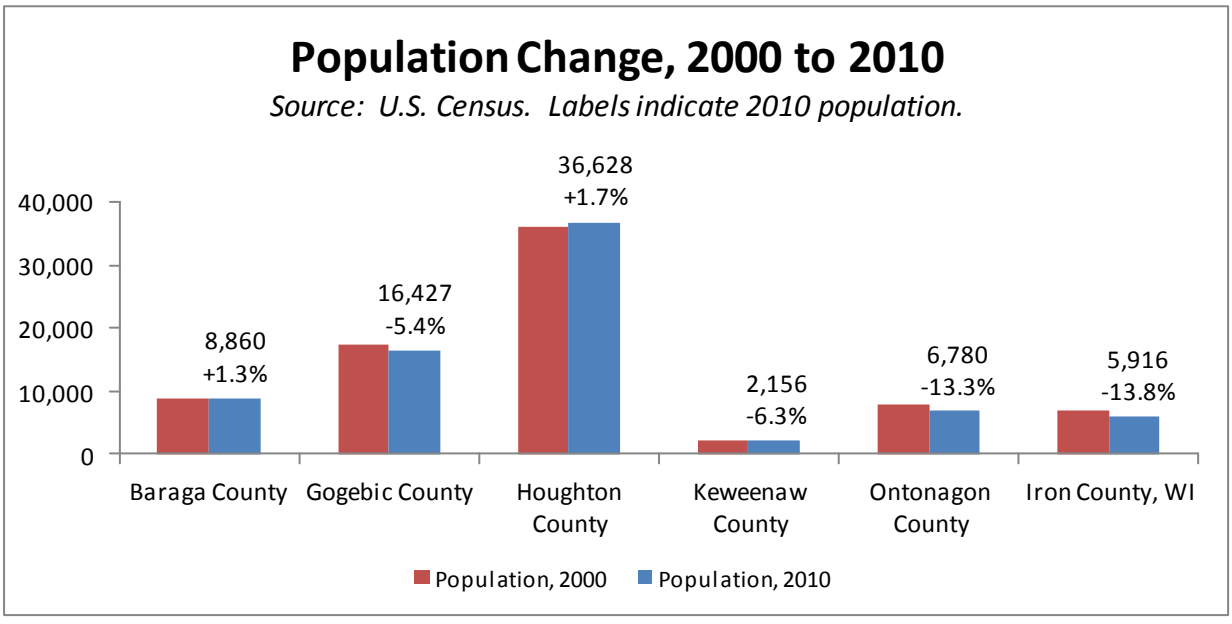
Demographics

The decennial census is a count of everyone residing in the United States, both citizens and non-citizens. A person's "usual residence" determines the address at which he or she is counted during the census. Usual residence is defined as the place where a person lives and sleeps most of the time. This place is not necessarily the same as the person's voting residence or legal residence. Two notable outcomes of the usual residence principle are that full-time college students are counted toward the population of the county in which the campus is located, and incarcerated persons are counted toward the population of the county in which the correctional facility is located. The most sizable college student population in the Western U.P. region is that of Michigan Technological University. In 2010, 6,916 students were enrolled in on-campus programs at Michigan Tech. Other institutions of higher learning — Finlandia University, Gogebic Community College, and Keweenaw Bay Ojibwa Community College — have smaller enrollments. Both Baraga and Gogebic counties have state correctional facilities located within them. At the end of 2010, Baraga Correctional Facility housed 854 inmates while Ojibway Correctional Facility housed 1,081. Both facilities house only males.

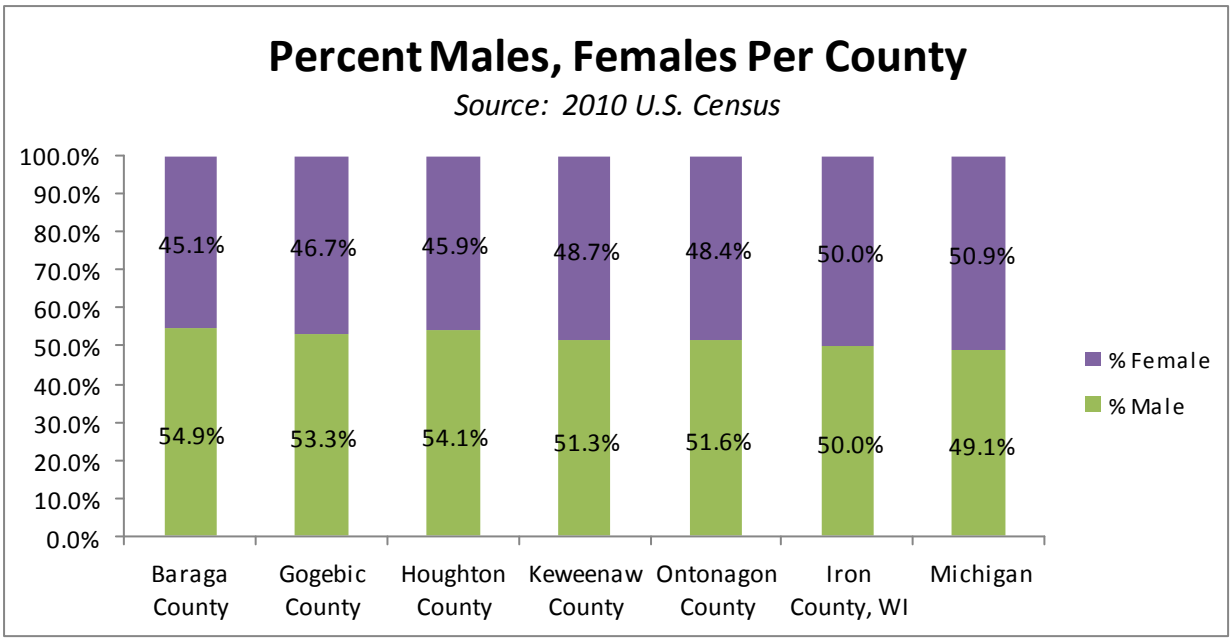
The graph below shows the change in population between the previous two census years, 2000 and 2010. Baraga and Houghton counties saw population increases of between one and two percent, Gogebic and Keweenaw counties experienced declines of more than five percent, and Iron and Ontonagon counties saw decreases of more than thirteen percent.

Job losses in Gogebic and Ontonagon counties have contributed to emigration of working-age adults and, secondarily, to fewer births per year, leading to population declines and a demographic shift toward an older population.

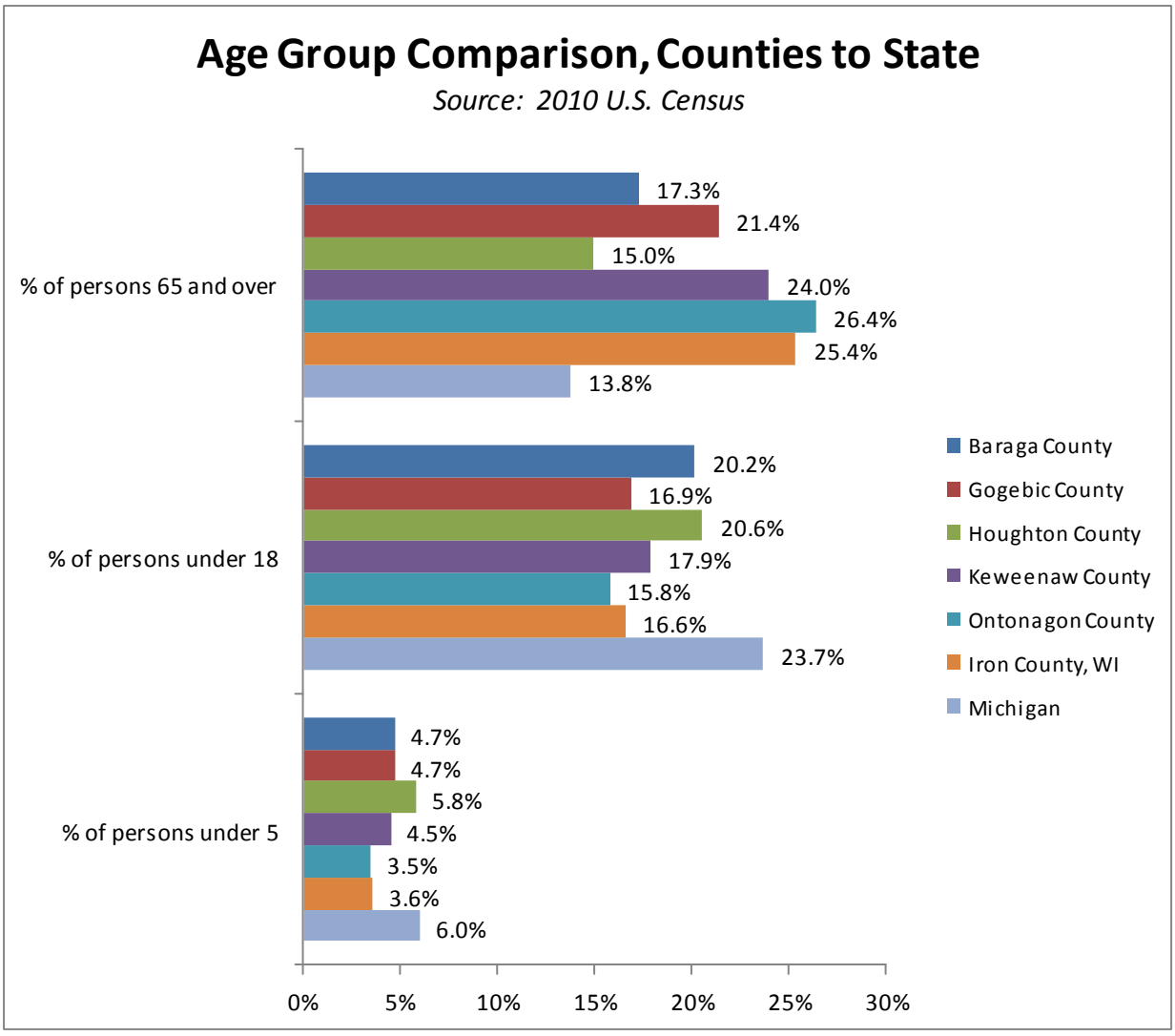
Sources:
Fact Book 2010-2011, Office of Institutional Analysis, Michigan Technological University
Michigan Department of Corrections 2010 Statistical Report



The graph below depicts the percentage of males versus females that comprise each county population according to the 2010 Census. As previously described, incarcerated populations are counted in the census as are college students that may live elsewhere for part of the year. The exclusively male inmate populations of Baraga Correctional Facility and Ojibway Correctional Facility contribute to the higher percentage of males in Baraga and Gogebic counties. Michigan Tech's high male-to-female student ratio, almost three-to-one in 2010, accounts for the higher percentage of males in Houghton County.



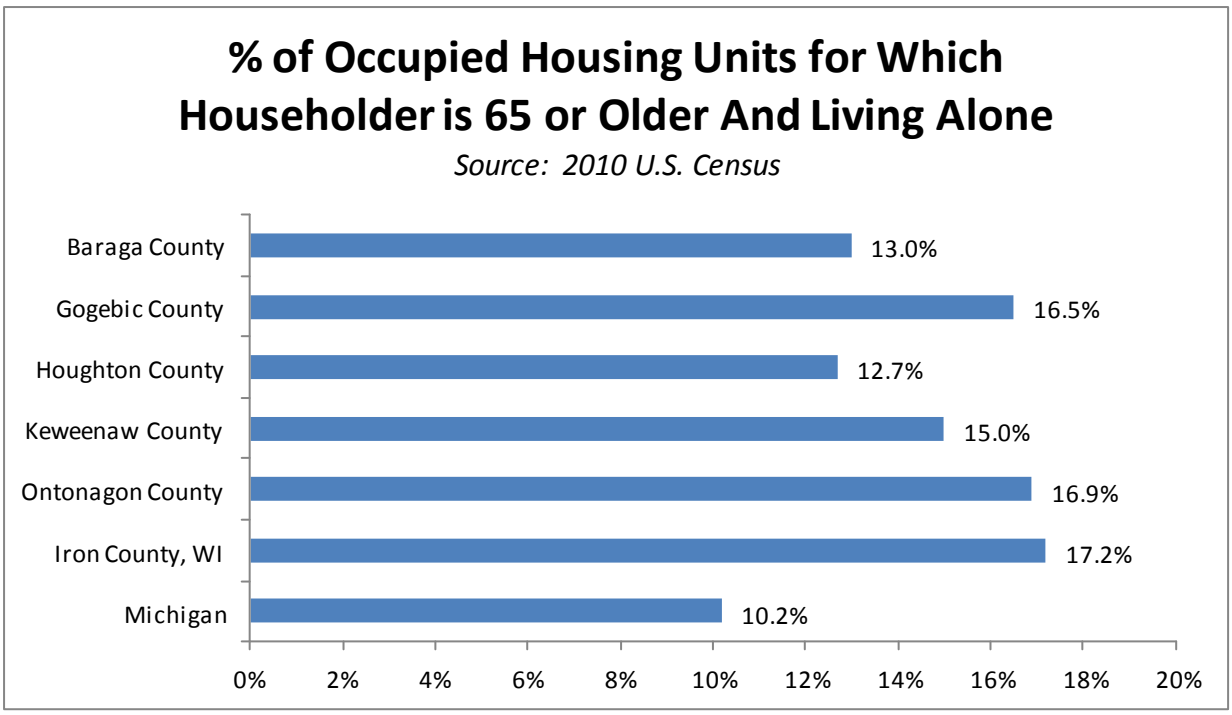
The next graph compares each county and Michigan in terms of the percentage of the population that is very young (under age five, or 0 - 4 inclusive), juvenile (under age eighteen, or 0-17 inclusive), and senior (age 65 and older). Baraga, Gogebic, Keweenaw, Ontonagon, and Iron counties all have significantly older populations than Michigan overall. Houghton County's cohort of young adults age 18-24 is significantly larger as a percentage because of the student bodies of Michigan Tech and Finlandia University, which makes the remaining age groups a smaller percentage of the whole.



Demographics suggest there may be a greater demand in the future for gerontological care, chronic disease management, assisted living and long-term care facilities, home nursing, and other medical, social and transportation services to meet the needs of a growing cohort of older adults. Conversely, the declining population of children affects school enrollments and other programs, services and funding streams related to youth which are allocated on a population basis.

In U.S. Census terms, the householder refers to the person in whose name the housing unit is owned or rented. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is intended to be occupied as separate living quarters. Not included are group quarters, such as dormitories, prisons or nursing homes where ten or more unrelated persons live.

The following graph shows the percentage of occupied housing units for which the householder is age 65 or order and living alone, according to the 2010 Census. All of the counties under study exceed the Michigan rate for this metric.



Most older adults live in private homes or apartments for the majority of their senior years, and may need some supportive services based on their health, level of independence, and whether there are relatives or friends who can assist them.

Local Survey Findings: Health Status of Seniors

- Among Western U.P. adults aged 65 and older, an estimated 27.7% described their general health status as fair or poor. Adults younger than 65 more frequently described their general health as Good, Very Good, or Excellent.
- Approximately 19% of adults aged 65 and older reported experiencing poor physical health on at least 14 of the past 30 days. Fewer young adults reported 14 or more days of poor physical health.
- An estimated 38.4% of adults aged 65 and older reported being limited in their activities by physical, mental, or emotional problems, or required the use of special equipment such as a cane or wheelchair.

Racial Distribution

The table below contains data from the 2010 U.S. Census that show the distribution of races within each county as a percentage of the total population. With the exception of Baraga County, the Western U.P. is significantly more racially homogeneous than Michigan. Baraga County, where the Keweenaw Bay Indian Community is located, has a sizable American Indian population. The majority proportions of non-white inmates housed at Baraga Correctional Facility in Baraga County and Ojibway Correctional Facility in Gogebic County increase the racial diversity of those counties. At the end of 2010, 601 of Baraga Correctional Facility's 854 inmates were non-white. At Ojibway Correctional Facility, 597 of 1,081 inmates were non-white. Overall, incarcerated individuals made up roughly 10 percent of Baraga County's total population and 7 percent of Gogebic County's total population in 2010.

Source: Michigan Department of Corrections 2010 Statistical Report

	White Alone	Black Alone	American Indian or Alaska Native Alone	Asian Alone	Some Other Race Alone	Two or more races
Baraga County	75.0%	7.2%	13.1%	0.1%	0.2%	4.4%
Gogebic County	91.7%	4.1%	2.4%	0.2%	0.2%	1.4%
Houghton County	94.5%	0.5%	0.6%	2.9%	0.2%	1.3%
Keweenaw County	98.5%	0.1%	0.1%	0.0%	0.0%	1.3%
Ontonagon County	97.3%	0.1%	1.1%	0.2%	0.1%	1.2%
Iron County, WI	97.9%	0.1%	0.6%	0.3%	0.2%	0.9%
Michigan	78.9%	14.2%	0.6%	2.4%	1.5%	2.4%

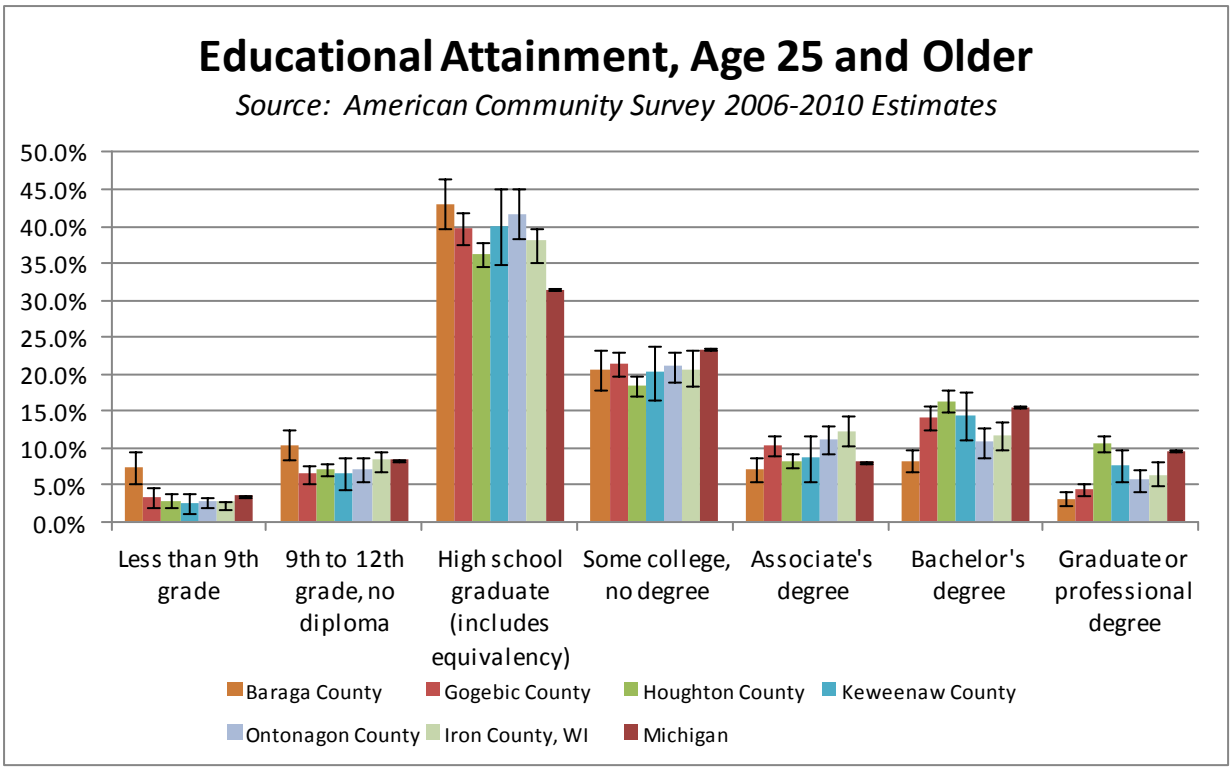
Source: 2010 U.S. Census.

American Indians in Baraga County, as a group, are younger than non-Indians. In 2010, 26 percent of Baraga County's population age 0-5 were American Indians, and American Indian children account for much of the growth in the county population over the past decade, as populations of Whites and inmates have not changed significantly.

The data in the next graph come from the American Community Survey (ACS). This survey, conducted by the U.S. Census Bureau, collects population and housing information every year instead of every ten years. Since 2006, people living in group quarters, including correctional facilities, are included in the survey sample. In addition to estimates based on one year of data, three-year and five-year estimates are produced from ACS data. For sparsely populated areas such as the Western U.P., it often takes five survey cycles to accumulate enough data to produce reasonably reliable estimates.

The black bars on the graph represent 90 percent confidence intervals. Taking these intervals into account, we can conclude with high confidence that compared to Michigan adults overall, a larger proportion of Western U.P. adults ended their formal education with a high school diploma. Compared to the rest of the region and the state overall, a larger proportion of Baraga County adults have not completed 9th grade. Persons who did not complete high school are also more common in Baraga County, although the difference in proportion between Baraga and Iron counties is not statistically significant. The low levels of educational attainment in Baraga County may reflect in part the inclusion of prison inmates in the survey sample. A 2011 study found that among males age 18 and older, 40 percent of incarcerated men did not complete high school compared to 15 percent of men in the general population. Graduate or professional degrees are more common in Houghton County than in most of the other Western U.P. counties. This is likely explained by the presence of two universities and two hospitals in the county, which combined employ a significant number of persons possessing advanced degrees.

Source:
Educational Characteristics of Prisoners: Data from the ACS, U.S. Census Bureau Housing and Household Economic Statistics Division, 2011.

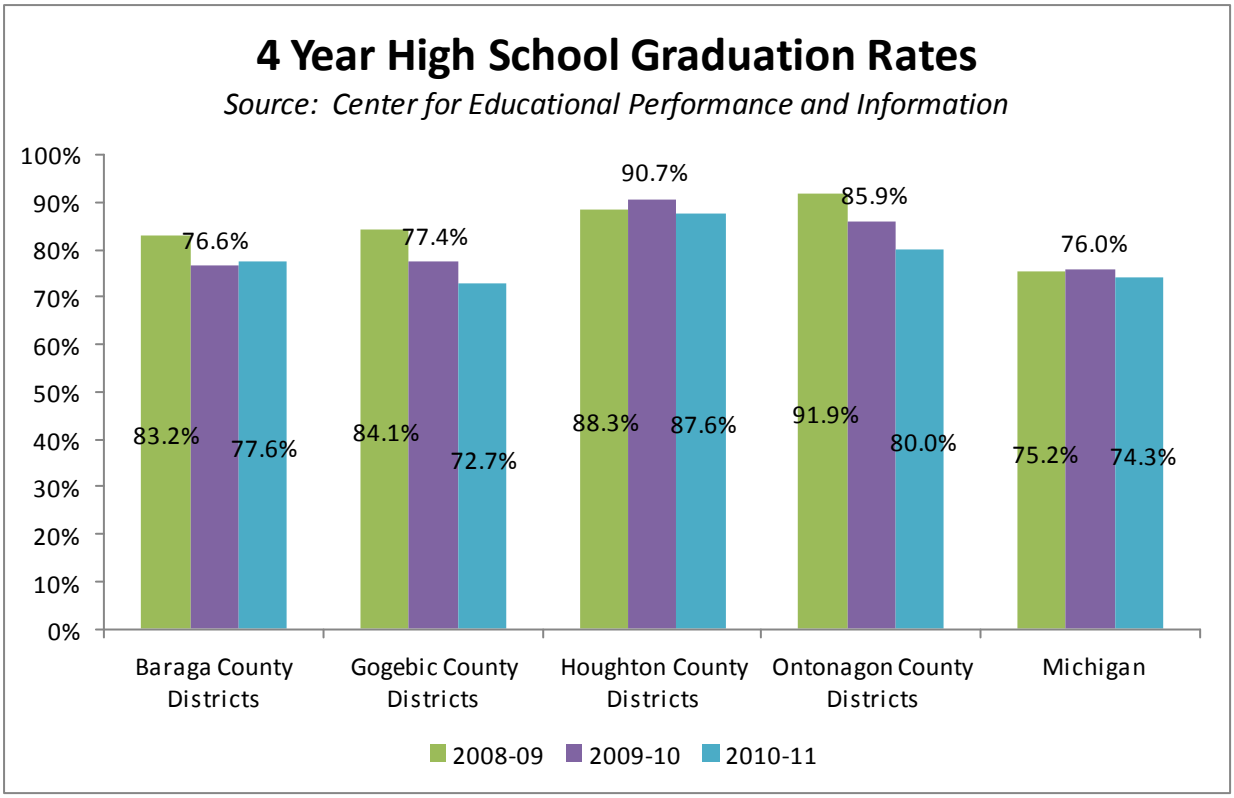


The next two graphs depict three-year trends in the percentage of students who either graduated from high school or dropped out after four years of enrollment. Data from all public high schools located within a county were combined to produce a single rate for the county.

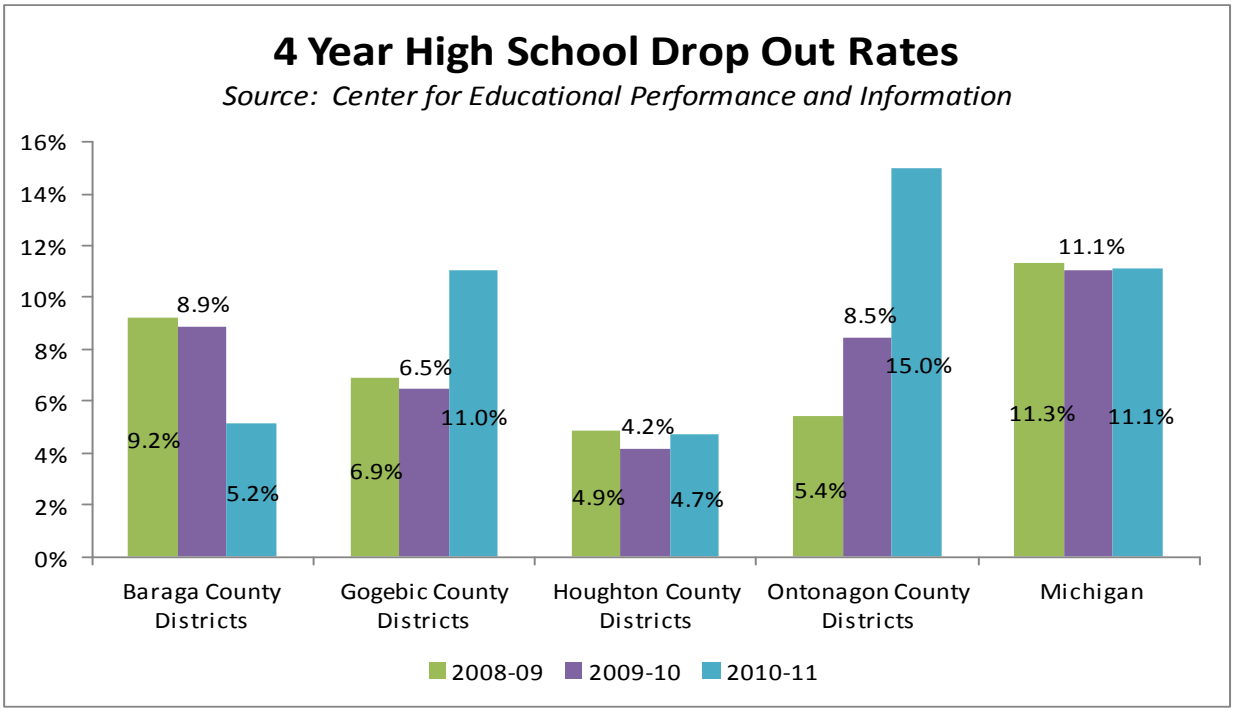
As an example of how to interpret these graphs correctly, 77.6 percent of Baraga County students that began high school in the 2007-08 school year graduated four years later, at the end of the 2010-11 school year. Of the remaining 22.4 percent, 5.2 percent dropped out as indicated on the second graph. The 17.2 percent unaccounted for are presumed to be continuing in school and may eventually graduate.

No statistics are available for Keweenaw County because no high school is located within that county. Most Keweenaw County students attend the CLK Public Schools in Calumet (northern Houghton County.)

Historically four year graduation rates for Western U.P. counties have been higher than the state rate, however Gogebic County's rate for the four years ending with the 2010-11 school year broke that trend. Across the three years shown, Gogebic and Ontonagon counties show a declining trend in graduation rates. When considering this trend, it is important to note that small cohort sizes make percentages very sensitive to small changes in the numerator. The 2010-11 four-year Baraga County cohort had 116 students, Gogebic County had 154, Houghton County 403 and Ontonagon County 60.



The graph below depicts a three-year trend in the percentage of students who dropped out of high school after four years of enrollment. Over this time span, Baraga County drop out rates have decreased. Gogebic and Ontonagon counties show a generally increasing trend in drop out rates. With the exception of the Ontonagon County cohort completing its fourth year of high school in 2011, Western U.P. counties have had a lower dropout rate than the state overall.



Two small public school districts, Mercer and Hurley, are located within Iron County, Wisconsin. The 2010-11 Mercer senior class consisted of 11 students compared to 60 for Hurley. For the four years ending with the 2010-11 school year, the four year graduation rates were 85 percent for Mercer, 95 percent for Hurley, and 87 percent for Wisconsin. Small cohort sizes make it difficult to comment on whether these rates are typical. Because different states have different high school completion requirements, caution must be used when comparing graduation rates between Michigan and Wisconsin. Drop out rates in the Mercer and Hurley districts were lower than the state dropout rate of 6 percent for the four years ending with the 2010-11 school year.

Local Survey Findings: Health and Education

- Western U.P. adults whose educational attainment did not extend beyond high school reported the highest rates of poor physical health.
- The mean number of days of poor physical health for those whose highest educational attainment was a high school diploma was more than twice that of those holding at least a 4-year college degree.
- Rates of activity limitation due to poor physical or mental health were highest among those who did not pursue education beyond high school.

Vulnerable Populations Chapter Introduction

Vulnerable populations, in terms of community health, are groups of people who are at greater risk of disease, disability and difficulty accessing services, based on socioeconomic status or other social determinants of health. As defined by the World Health Organization (WHO), social determinants of health are "the circumstances in which people are born, grow up, live, work, and age, as well as the systems put in place to deal with illness. These circumstances are in turn shaped by a wider set of forces: economics, social policies, and politics." Summarizing the same 2008 WHO report on health disparities, the Centers for Disease Control and Prevention (CDC) defines social determinants as:

> the complex, integrated, and overlapping social structures and economic systems that are responsible for most health inequities. These social structures and economic systems include the social environment, physical environment, health services, and structural and societal factors. Social determinants of health are shaped by the distribution of money, power, and resources throughout local communities, nations, and the world.

Even in the United States, poverty is a statistically significant factor when health disparities are analyzed. Multiple studies in this country and other industrialized nations find that long-term living in poverty more than doubles the risk of chronic disease, disability and premature death. While a poor individual may live to 100 and a wealthy one may die young, in large population studies, those with the least wealth and educational attainment live less healthy and shorter lives.

Over the last four years, the United States experienced its longest period of high unemployment since the Great Depression. For many Western U.P. communities, economic contraction, unemployment and declining property values are nothing new; they have been the story, more or less, for decades. The region was especially hit hard, though, by the recent recession. Unemployment rates in Michigan and all local counties roughly doubled between 2007 and 2009, and Baraga County ranked among the nation's worst with official unemployment rates above 23 percent for 2009 and 2010.

Other economic data confirm that many Western U.P. residents live in or near poverty. Median household incomes are two-thirds to three-quarters of state and national levels. About a fifth of all individuals and a quarter of all children live at or below the federal poverty line. About 50-60 percent of K-12 students across the region qualify for free or reduced-price school meals, and in some buildings the rate is closer to two-thirds.

For most of the indicators in the locally conducted 2012 adult behavioral risk factor survey, low-income respondents as a group reported worse health status, higher prevalence of behavioral risk factors and chronic diseases, and lower utilization of health care services. For instance, some 27 percent of people in households with incomes below $25,000 indicated they had fair or poor health, compared with about 17 percent among those earning $25,000 to $49,999, and about 12 percent for those above $50,000.

An estimated 36 percent of people in households earning less than $25,000 per year reported smoking, more than twice the reported rates for those earning more. And only about 62 percent of those in

the low-income cohort reported ever having their cholesterol checked in their lifetime, compared with about 80 percent for the middle and higher earners. In these and many more examples found in the survey results that comprise the final chapter of this report, health data from the low-income cohort is worse in a statistically significant manner.

While it is important to understand that correlation does not prove causation, population health studies demonstrate that living in poverty poses a significant health risk factor. The Western U.P. economy has generally performed worse than the state and national economies for decades, and many local areas were especially hard-hit in the recent recession and accompanying years of high unemployment. Local behavioral risk factor survey data show that low-income residents have poorer health status, lower rates of insurance coverage and utilization of preventive health care services, and higher rates of poor health habits, disease and disability.

Local Focus

- Outside of the City of Houghton and its immediate surrounding area, the unemployment rate in the region has been higher than in the United States as a whole in recent years.
- Median household incomes are lower in the Western U.P. than statewide.
- Per capita incomes for all five counties were lower than the state averages. Per capita income varies in the region from Baraga County on the low end to Keweenaw County on the high end.
- A staggering 25 percent of children in the region live at or below the poverty level. In Gogebic County the estimated rate of child poverty is closer to one-in-three. These rates are not dissimilar to Michigan rates. Throughout the state, too many children are raised in poverty.

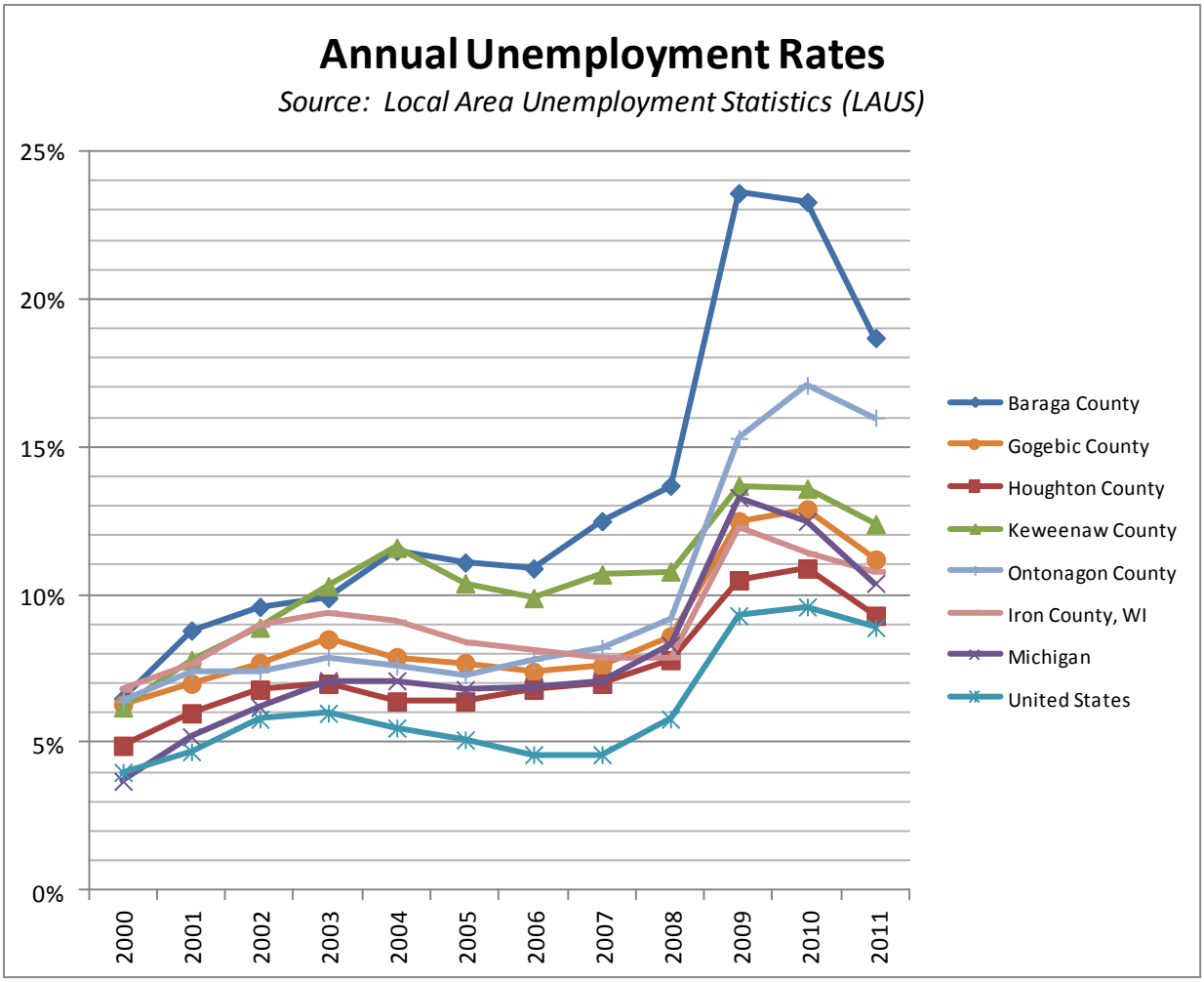
Potential Future Implications

- Low-income individuals and household members are especially likely to have poor health outcomes, so they are an important population for targeted prevention and outreach. Many Western U.P. residents, adults and children alike, are vulnerable from a health standpoint because of their income status.
- The federal Affordable Care Act will expand access to health insurance and preventive services, but the full impact this will have on the health outcomes of vulnerable populations is not yet known.
- Health disparities are related to economic status, independent of insurance coverage; therefore, expansion of health insurance is not expected to fully eliminate disparities of health outcomes as long as wide income inequalities persist.

Vulnerable Populations

The unemployment rate is the number of unemployed persons expressed as a percentage of the civilian labor force. The civilian labor force consists of all persons in the civilian non-institutional population classified as either employed or unemployed and seeking work. The civilian non-institutional population is made up of persons 16 years of age and older who are not inmates of correctional facilities, mental institutions, or nursing homes or other long-term care facilities, and who are not on active duty in the Armed Forces. When monthly unemployment rates are calculated, persons are classified as unemployed if they do not have a job, have actively looked for work in the prior 4 weeks, and are currently available for work.

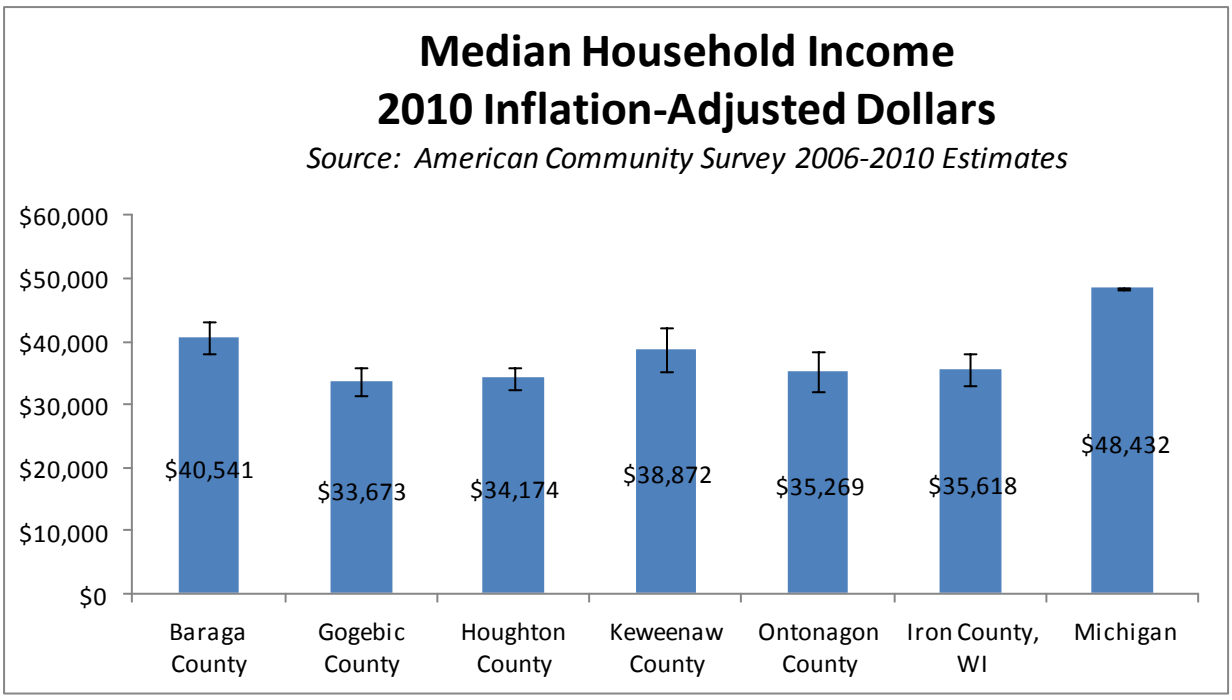
The data in the next graph illustrate that since 2000, the annual unemployment rates for all of the counties under study have generally followed the same rising and falling pattern that the Unites States rate has experienced. Without exception regional unemployment rates have exceeded the national rate. Since 2004, Baraga County's unemployment rate has exceeded 10 percent, and in September 2009 was third highest in the nation at 24.5 percent. Houghton County has had the lowest unemployment rate of the counties in the Western U.P.



The following graph gives median household income estimates calculated from the 2006-2010 American Community Surveys. The margin of error depicted by black bars equates to roughly a 90 percent confidence interval. When interpreting this graph, several definitions are important:

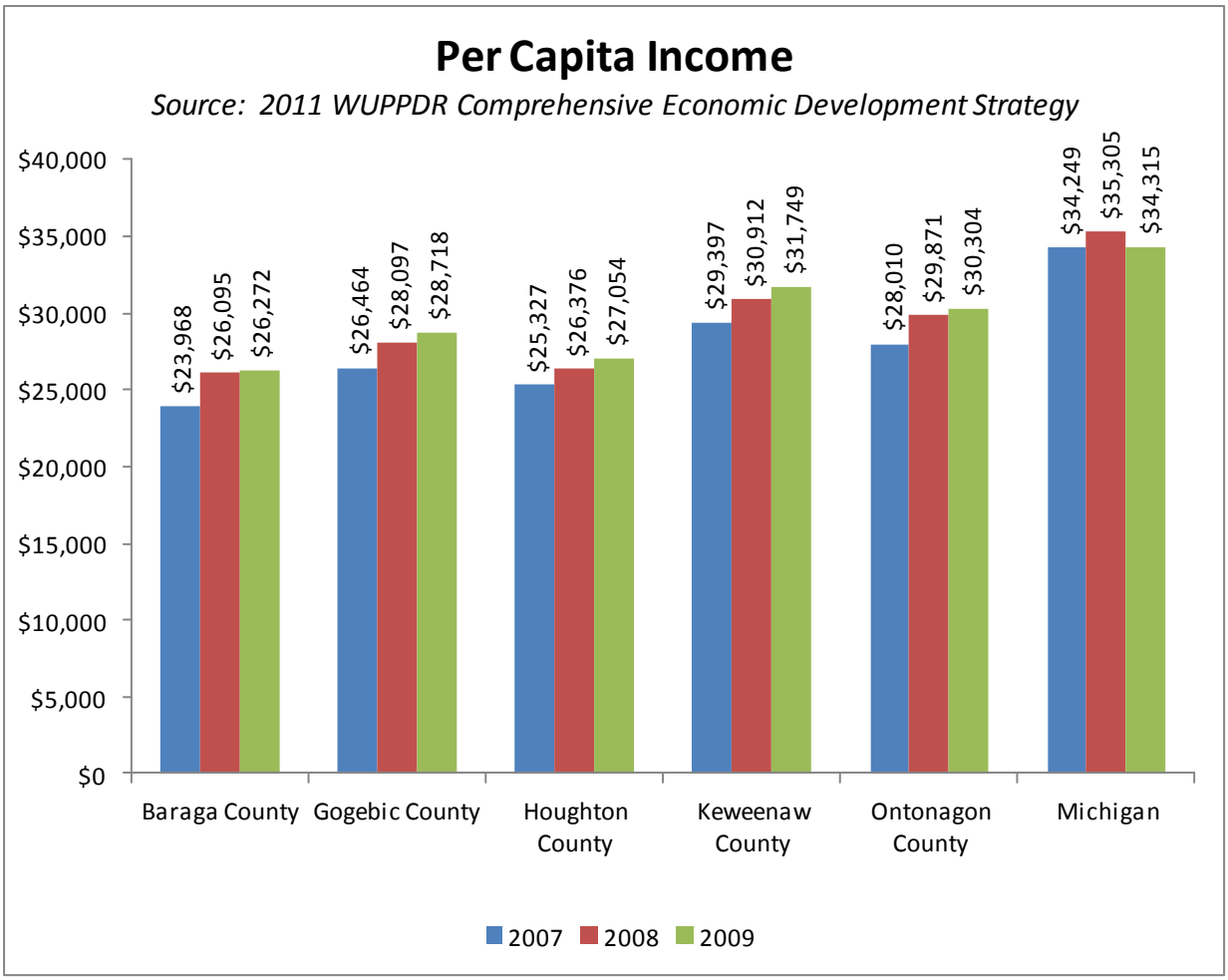
- A household includes all the persons who occupy a housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is intended to be occupied as separate living quarters. Not included are group quarters, such as dormitories, prisons or nursing homes where ten or more unrelated persons live.
- Household income includes the income of the householder and all other individuals 15 years old and over in the household, whether they are related to the householder or not. The householder refers to the person in whose name the housing unit is owned or rented.
- The median divides the income distribution into two equal parts: one-half of the households falling below the median income and one-half above the median. The measure provides no information about the distribution of income within each of these halves. It may be fairly uniform, with all values close to the median, or it may include significant numbers of values below and/or above the median.

The median household income for Michigan overall exceeded that of all counties in the Western U.P. region. The number of wage-earners in a household and the magnitude of those wages both contribute to household income levels.



Per capita income is commonly used as a measure of an area's overall economic status. This mean income measure is calculated by dividing the total income of all people 15 years old and older in a geographic area by the total population in that area. Income amounts are not included for people under 15 years old even though those people are included in the denominator of per capita income.

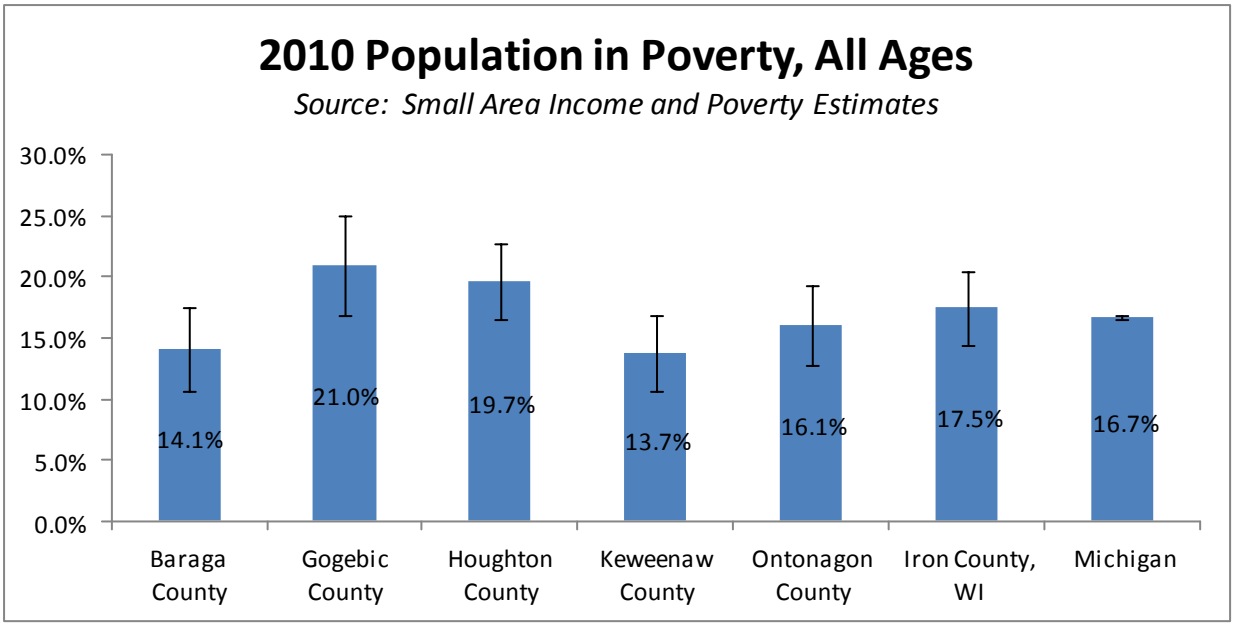
Per capita income serves as a one-year gauge of the overall wealth of an area. The quantity is likely to vary from year to year as employment patterns and compensation levels change. The graph below includes per capita income for 2007 through 2009. Among the Western U.P. counties, Baraga County had the lowest per capita income in each of these years. Per capita incomes for all five counties were lower than the state averages.



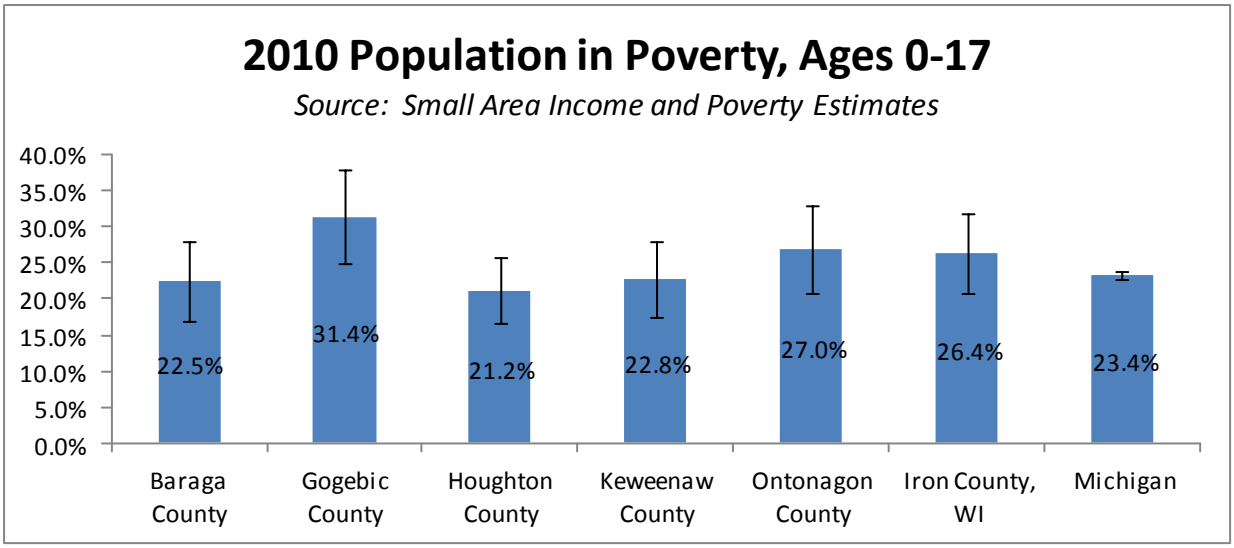
The poverty estimates in the next two graphs come from the Small Area Income and Poverty Estimates program, SAIPE. The U.S. Census Bureau, with support from other Federal agencies, created the SAIPE program to provide more current estimates of selected income and poverty statistics than those from the most recent decennial census. The SAIPE models combine data from administrative records, intercensal population estimates, and the decennial census with direct estimates from the American Community Survey to provide consistent and reliable single-year estimates. According to the Census Bureau, these model-based single-year estimates are more reflective of current conditions than multi-year survey estimates.

The Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. A family consists of two or more people (one of whom is the householder) related by birth, marriage, or adoption residing in the same housing unit. If a family's total income is less than the family's threshold, then that family and every individual in it is considered in poverty. For individuals who do not live with family members, their own income is compared with the appropriate threshold. In 2010, the threshold for a family consisting of two adults and 2 children was $22,113. For more information, see http://www.census.gov/hhes/www/poverty/about/overview/measure.html.

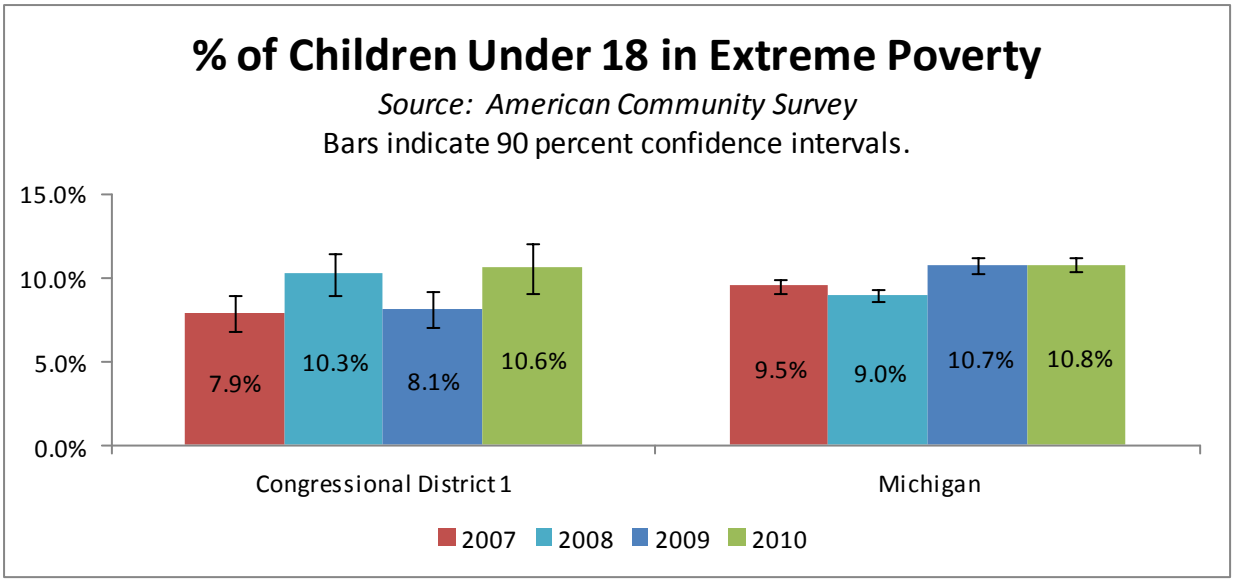
The error bars shown in the graphs represent 90% confidence intervals. Since all of the confidence intervals in the first graph overlap at least to some extent, we should not conclude that differences in overall poverty levels exist between any of the counties under study and/or the state. We can be quite confident that at least 10 percent of people in Baraga and Keweenaw counties, 12 percent of people in Ontonagon County, 14 percent of people in Iron County, and 16 percent of people in Gogebic and Houghton counties were living in poverty in 2010.



In the graph below, a statistically significant difference in child poverty rates is observed between Gogebic County and Michigan overall. We can be very confident that at least 25 percent of Gogebic County children were living in poverty in 2010. For Baraga, Houghton, and Keweenaw counties this minimum is approximately 17 percent, and for Ontonagon and Iron counties 21 percent.



Data for the next graph came from the American Community Survey. Congressional District 1 consists of the entire Upper Peninsula and multiple counties in the northern Lower Peninsula. The larger sample size taken from this expanded geographical region produced estimates with smaller confidence intervals than would be the case with individual county estimates. A person is considered to be in extreme poverty if the family in which they live has a household income less than 50 percent of the federal poverty level. The estimates below indicate that rates of extreme poverty among children in Michigan increased from 2008 to 2009 and remained at that new higher rate in 2010. Rates in Congressional District 1 were lower than those in Michigan overall in 2009, but increased in 2010. In 2010 it is likely that at least 9 percent of children under age 18 were living in extreme poverty.



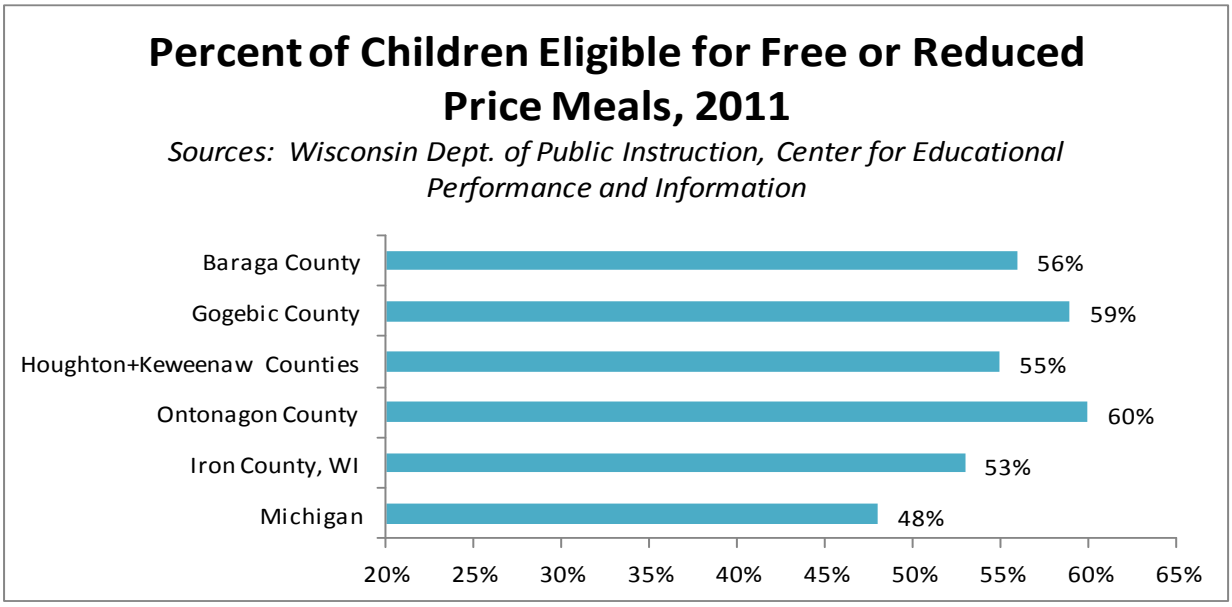
Local Survey Findings: Health Status and Income

- Adults with household incomes less than $25,000 reported higher rates of fair or poor health (27.1%) than adults with household incomes of $50,000 or more (11.6%). Other survey choices were Good, Very Good, and Excellent.
- Adults with household incomes less than $50,000 reported higher rates of poor physical health than those with incomes above that amount.
- An estimated 17.1% of adults with household incomes under $25,000 reported 14 or more days of poor mental health in the past month, significantly higher than adults living in households with higher incomes.
- The lowest income group more frequently reported that poor health limited their activities, and was more likely to report a disability (35.1%, compared to 25.2% among Western U.P. adults overall).

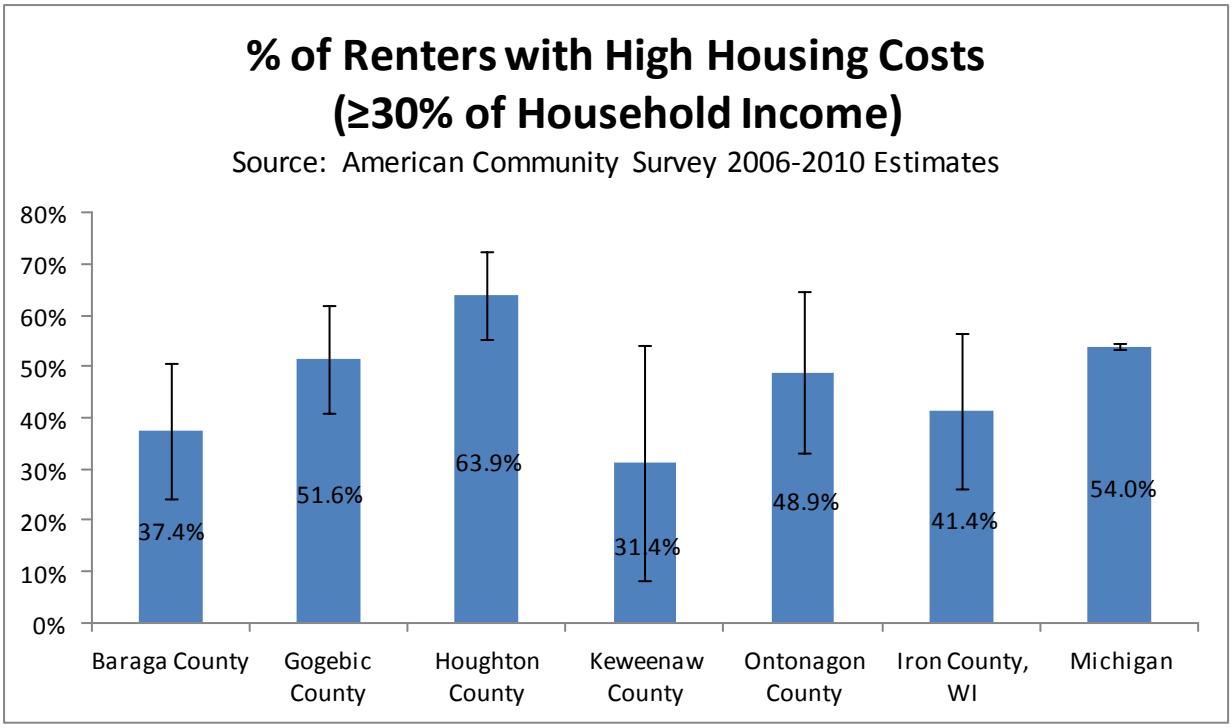
The next graph depicts the percentage of children enrolled in public schools who were eligible for either a free or reduced-price lunch in 2011. Students from families with incomes below 185 percent of the poverty level are eligible for free or reduced prices in the federal School Lunch Program. Students from families reporting income between 130 and 185 percent of the federal poverty line are eligible for reduced-price meals, while children from families with incomes below 130 percent of poverty are eligible for a fully subsidized or "free" meal.

School-lunch eligibility is generally the best measurement annually available to estimate the percentage of low-income children in each school district. A limitation of these percentages is that there are an unknown number of students who do not apply for the program, but who would otherwise be eligible. This is particularly true in high school age students. Therefore, percentages of eligible students may underestimate the actual percentage of low–income students in each district.

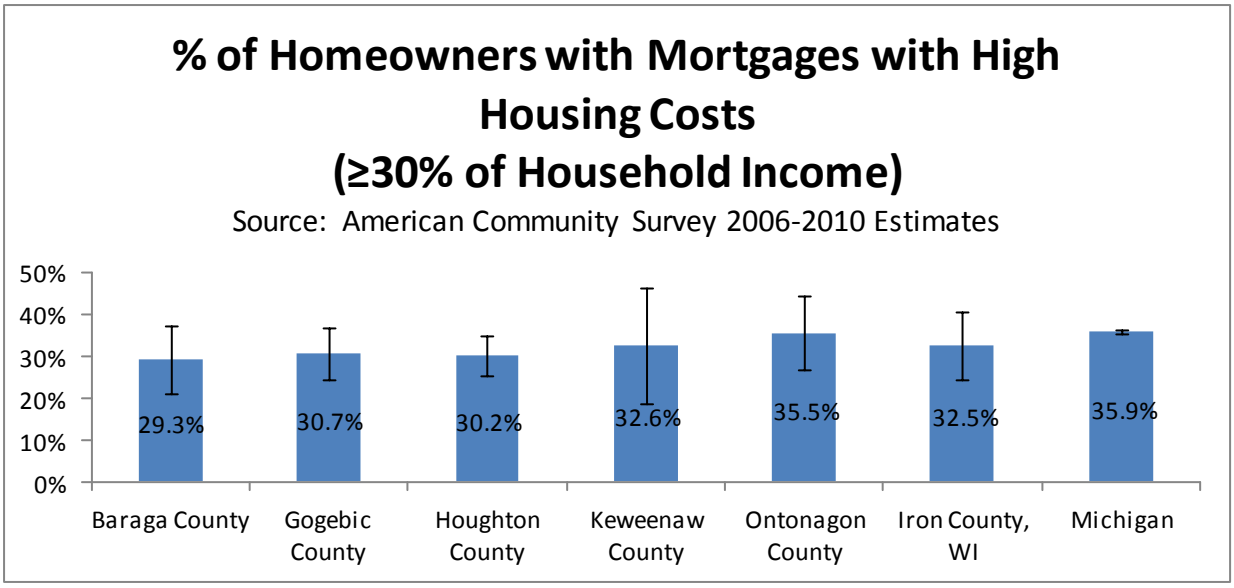
In all of the counties under study in this report, over half of the student body were eligible for free or reduced price lunch in 2010. The need for federally subsidized lunches was highest in Gogebic and Ontonagon counties. Note that depending on family size, a student might qualify for reduced-price meals with a household income at or above the median income for the region, so it may be more accurate to consider these data as measurements of children from families of low or moderate income.



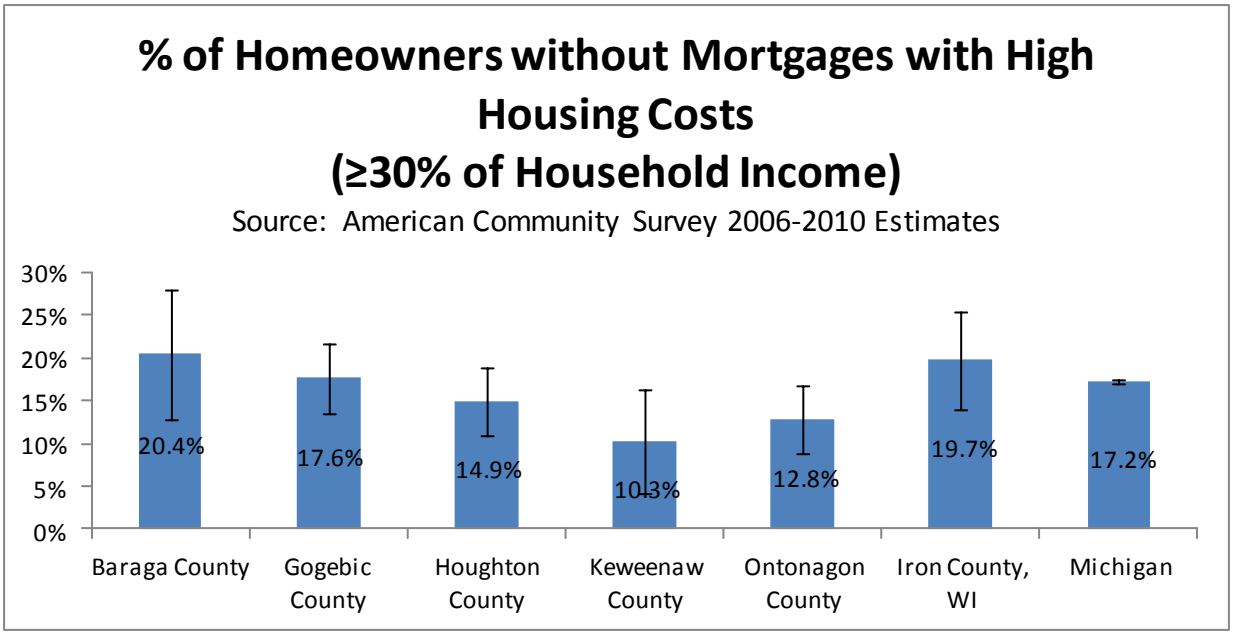
The conventional public policy indicator of housing affordability in the United States is the percent of income spent on housing. Housing expenditures that exceed 30 percent of household income have historically been viewed as an indicator of a housing affordability problem. The next graph shows the estimated portion of the renting population that pay gross rents which exceed 30 percent of household income. Black bars indicate the 90 percent confidence interval. Occupied housing units where gross rent as a percentage of household income cannot be computed have been excluded from the calculation. The data show that Houghton very likely has a higher percentage of renters with high housing costs than both Baraga County and the state overall. The fairly wide confidence intervals do not allow any other comparisons to be made with a high degree of certainty. The large percentage of Houghton County renters with high housing costs is partially explained by the presence of many Michigan Tech and Finlandia University students who rent. Many college students have little or no income, paying a portion of their rent with family savings or borrowed money from student loans, so their housing costs may actually exceed income.



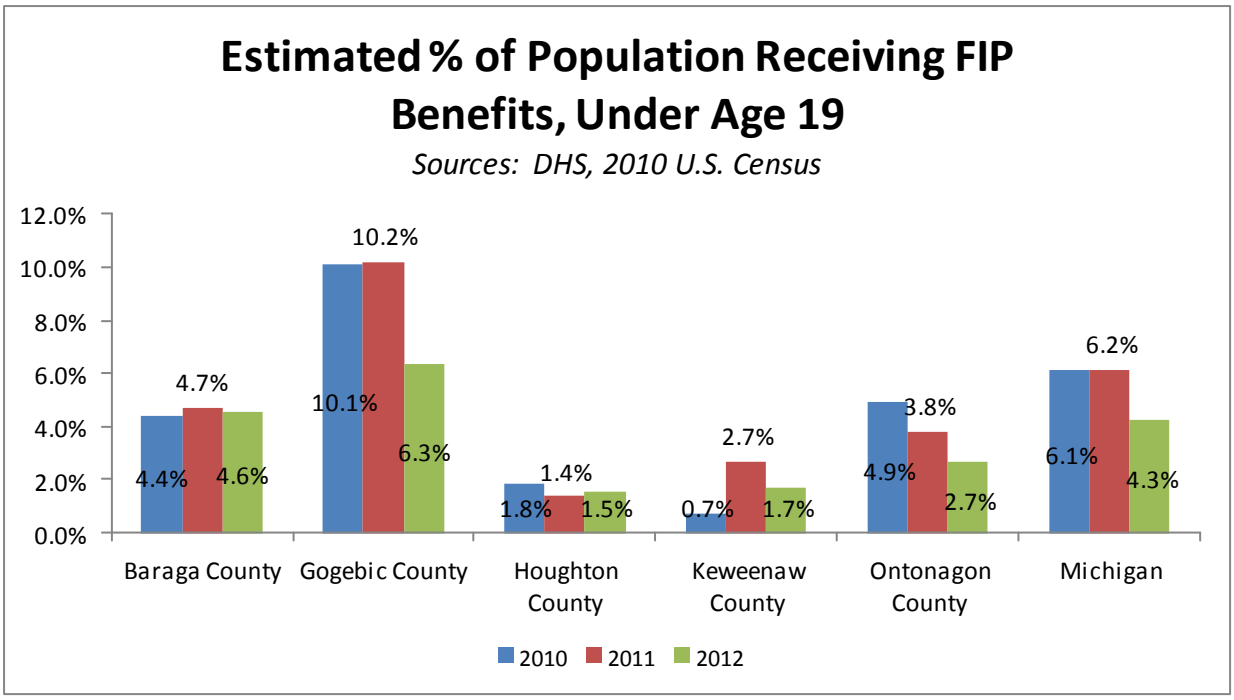
For homeowners, housing costs tabulated by the American Community Survey are the sum of payments for mortgages, deeds of trust, contracts to purchase, or similar debts on the property; real estate taxes; fire, hazard, and flood insurance; utilities; fuels (oil, coal, kerosene, wood, etc.); condominium fees; and mobile home costs. The next graph shows the percentage of homeowners with a mortgage for whom housing costs are 30 percent or more of household income. Black bars roughly bracket the 90 percent confidence interval. Taking these intervals into account, we can be reasonably confident that Houghton County has a smaller proportion of homeowners with high housing costs than the state overall. Except for Keweenaw County, the minimum proportion of mortgage-holding homeowners with high housing costs is likely 20 percent. Among renters, this minimum proportion is most likely 40 percent in Gogebic County and 55 percent in Houghton County.



The third graph in this series shows the percentage of homeowners without mortgages for whom monthly housing costs are 30 percent or more of household income. Not surprisingly, fewer households fall into this category because rent or a mortgage payment are no longer part of monthly expenses. Property insurance, utilities, and fuel costs are examples of monthly expenses that persist for the duration of home ownership. Taking the 90 percent confidence intervals into account, the data indicate that Keweenaw and Ontonagon counties probably have a smaller proportion of mortgage-free homeowners with high housing costs than the state overall.



The Family Independence Program (FIP) provides cash assistance to families with children and pregnant women to help them pay for living expenses such as rent, heat, utilities, clothing, food and personal care items. In order to qualify for this benefit program, a person must be a resident of the state of Michigan, either pregnant or responsible for a child under 19 years of age, a U.S. national, citizen, legal alien, or permanent resident, have low or very low income, and be either under-employed (working for very low wages), unemployed or about to become unemployed. The next graph shows three-year trends in the percentage of people under age 19 who were receiving FIP benefits according to January snapshots. Program enrollment statistics came from DHS. 2010 U.S. Census data was used to approximate population size. Among Western U.P. counties, Gogebic County families with young people received FIP benefits to the greatest degree, exceeding the state utilization rate in each of the three years considered.



Homeless Persons

Michigan's statewide Homeless Management Information System (MSHMIS) combines data from more than 600 homeless service agencies located throughout Michigan. The database provides an unduplicated count of homeless persons living in a particular geographic region, called a Continuum of Care. These persons are defined as homeless by at least one of four federal homeless definitions (SHP, ESG, HHS, DOE). These definitions encompass homeless persons of any age living on the street, in places not meant for habitation, or in shelters. Children who are temporarily doubled up due to a housing crisis or living in a motel with no other permanent address also qualify, as do some disabled persons living in these types of arrangements. For a series of helpful case examples depicting persons who do and do not qualify as homeless under the federal definitions, see Michigan's Campaign to End Homelessness 2010 Annual Summary. This summary is available from the Campaign's website.

Not all agencies that assist the homeless report to MSHMIS, but estimates of coverage are provided. The table below provides HMIS data for 2011. The counts within each row are unduplicated, but the same individual may be counted in multiple rows (for example, a child who turned 18 during 2011). Application of the estimated coverage rate to the total HMIS homeless count for each continuum yields projected homeless counts of 853 for Baraga/Houghton/Keweenaw and 92 for Gogebic/Ontonagon.

2011 Homeless Management Information Systems (HMIS) Data

	Baraga/Houghton/Keweenaw Continuum of Care	Gogebic/Ontonagon Continuum of Care
Total Homeless in HMIS	495	76
Adults in Families	181	25
Adult Singles	106	23
Unaccompanied Youth	1	0
Children in Families	214	28
Total Family Households	111	15
Estimated Coverage	58%	83%

Source: http://www.thecampaigntoendhomelessness.org/MichigansCampaign/TheData.aspx

Access to Care Chapter Introduction

Access to care is a critical factor in assessing community health. Broadly defined, access to care is whether people are able to receive appropriate and timely physical, dental and mental health care services for prevention, screening, diagnosis and treatment. Access depends on the availability of primary providers and other health care professionals, and on whether individuals and families have the means, through personal wealth, private insurance, or public programs, to pay for the care they need.

The data in this section, from public sources, focus on public insurance programs like Medicaid, and on federal designations based on the availability of certain health care professionals. But to begin the discussion of access to care, it must be stated that two main federal health programs, Medicaid and Medicare, cover poor children and all seniors, respectively. The largest group that does not have health insurance is the 50 million or so adults ages 18-64 who do not have employer sponsored health care plans because they work in low-wage jobs without benefits, work for small employers, are self-employed, or are in fact unemployed, and cannot afford insurance. Here are some facts about that group, from a recent study by the National Center for Health Statistics:

- In the first 3 months of 2012, 47.3 million persons of all ages (15.4%) were uninsured at the time of interview, 59.7 million (19.4%) had been uninsured for at least part of the year prior to interview, and 34.6 million (11.3%) had been uninsured for more than a year.
- Unemployed adults had poorer mental and physical health than employed adults; this pattern is found for insured and uninsured adults.
- Unemployed adults were less likely to receive needed medical care due to cost than the employed in each insurance category.
- The unemployed were less likely to receive needed prescriptions due to cost than the employed in all insurance categories.
- Uninsured adults were less likely to receive needed medical care and prescription drugs due to cost than those with public or private insurance, regardless of employment status.

In the local 2012 behavioral risk factor survey, an estimated 18 percent of Western U.P. adults age 18-64 reported no health insurance, similar to the Michigan rate. The rate is lower in the Houghton-Keweenaw area, where unemployment also tends to be lower, and higher in Gogebic and Ontonagon counties, where there are higher rates of unemployment and many seasonal tourism-related jobs that typically don't provide insurance. About a quarter to a third of members of the 18-64 group in Ontonagon County do not have a personal physician, which could be related both to lack of health insurance and to health care professional shortages. And close to a quarter of the region's adults reportedly did not access health care in the last year because they could not afford it. As the main provisions of federal Affordable Care Act are implemented in 2014, including Medicaid expansion, health insurance exchanges, and mandated coverage of certain preventive screenings, there will undoubtedly be an impact on the numbers of uninsured and on the utilization of routine and preventive services.

In the tables and graphs in this section, note: Medicaid enrollment rates, at 15-20 percent in most local counties, are similar to the Michigan rate; between one-third and one-half of children are covered by Medicaid, with rates highest in Gogebic County and Iron County, Wisconsin; all counties have feder-

ally designated health professional shortages, and all counties are considered medically underserved areas.

Local Focus

- Local rates of uninsured adults are similar to Michigan and national rates, with about 18 percent of Western U.P. adults under age 65 reporting no health insurance. Health insurance coverage correlates with employment status and income, as most adults currently access health insurance through employer-funded plans.
- Low income adults are less likely to access routine physical exams and preventive screenings.
- Ontonagon County adults are significantly less likely than other Western U.P. residents to have a personal health care provider and to get annual physicals.
- An estimated 60 percent of low-income adults in the Western U.P. received no dental services in the past year and 71 percent of adults with household incomes less than $25,000 had no dental insurance.
- Among children with dental coverage through Medicaid, 25-43 percent still received no dental care in the past year. All local counties are federally-designated shortage areas for dental services to low-income or Medicaid populations.
- A 2012 stakeholder survey conducted by Copper Country Mental Health Services (CCMHS) for Houghton, Baraga, Keweenaw and Ontonagon counties, together with focus group input, identified the top three priority needs in the region as: 1) increased mental health services for persons not meeting Community Mental Health (CMH) eligibility criteria; 2) increased mental health services for children 0-18 years; and 3) increased services to address the problem of substance abuse within the community.
- Local resident health survey results suggest that at least 10 percent of area residents have experienced poor mental health on at least 14 days in the previous month and nearly 25 percent report a current or past diagnosis of depression

Potential Future Implications

- Low-income residents, on average, have poorer access to care and poorer health status, making them an important population for targeted outreach and services.
- The Affordable Care Act will expand the number of people with insurance and the health services covered, although it is not yet known how this will specifically impact health outcomes.
- Poor oral health has been linked to other health concerns such as cardiovascular disease and poorer birth outcomes for affected pregnant women. In addition, routine dental care provides an opportunity to screen for findings suggestive of head and neck cancers, diabetes and other disease processes. Lack of access to or utilization of these services may have a broad impact on the health status of local residents.

- Dental decay is one of the most common chronic diseases of childhood. In addition to pain and self -esteem concerns, it may result in higher school absenteeism, infection, poor nutritional status and the need for intensive and costly treatment.
- Available data provided by local Community Mental Health and supported by local resident survey data suggests a current unmet and future increasing need for mental health services, especially for the low- to moderate-income population.

Source:

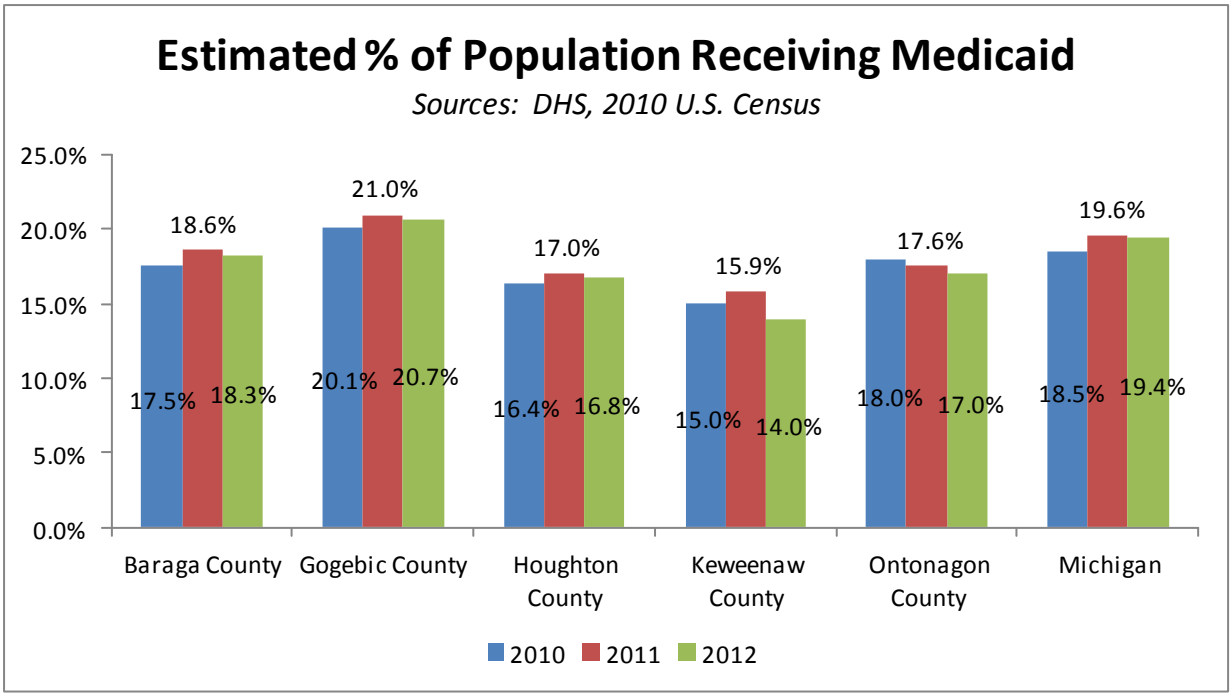
Driscoll AK, Bernstein AB. Health and access to care among employed and unemployed adults: United States, 2009–2010. NCHS data brief, no 83. Hyattsville, MD: National Center for Health Statistics. 2012.

Access to Care

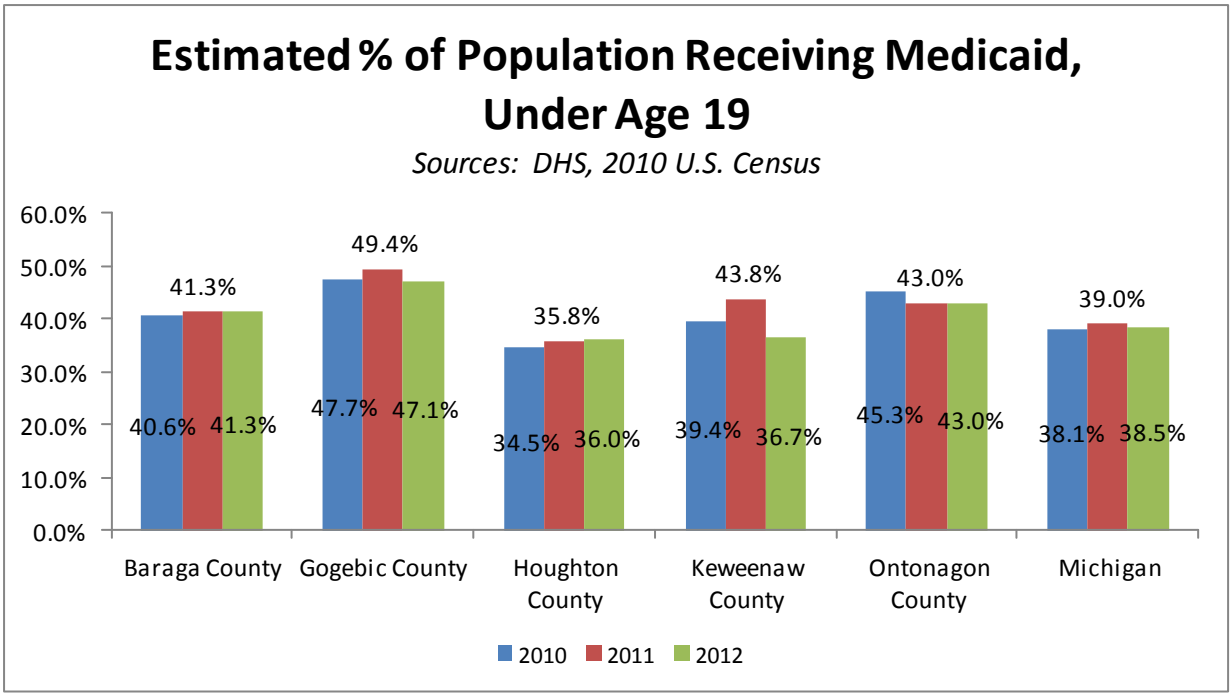
The Michigan Medicaid Health Care Program is intended to provide medical and health-related assistance to low-income individuals and families who have no medical insurance or have inadequate medical insurance. Generally, the program serves persons aged 65 or older, blind or permanently disabled persons, dependent children, children in foster care homes, pregnant women, and individuals under age 21 in psychiatric hospitals.

Because Wisconsin's Medicaid program has different benefits and different eligibility guidelines, enrollment figures for Iron County, Wisconsin are presented in a later section.

The data in the next graph approximate the trends in Medicaid enrollment for the past three years. The percentages were calculated from January Medicaid enrollment snapshots provided by DHS and population statistics from the 2010 U.S. Census. In general the proportion of the population receiving Medicaid has been fairly constant for the past three years. Within the Western U.P., enrollment levels are highest in Gogebic County and lowest in Keweenaw County.



The percentages in the next graph were also calculated from January Medicaid enrollment snapshots and 2010 U.S. Census data. Reflected are the proportions of children under age 19 receiving Medicaid over the past three years. Again we see fairly constant enrollment levels year to year, with Gogebic County having the highest participation level of the five counties in the Western U.P. Nearly half of Gogebic County children under the age of 19 are enrolled in Medicaid. Houghton County enrollment percentages are the smallest at around 35 percent.



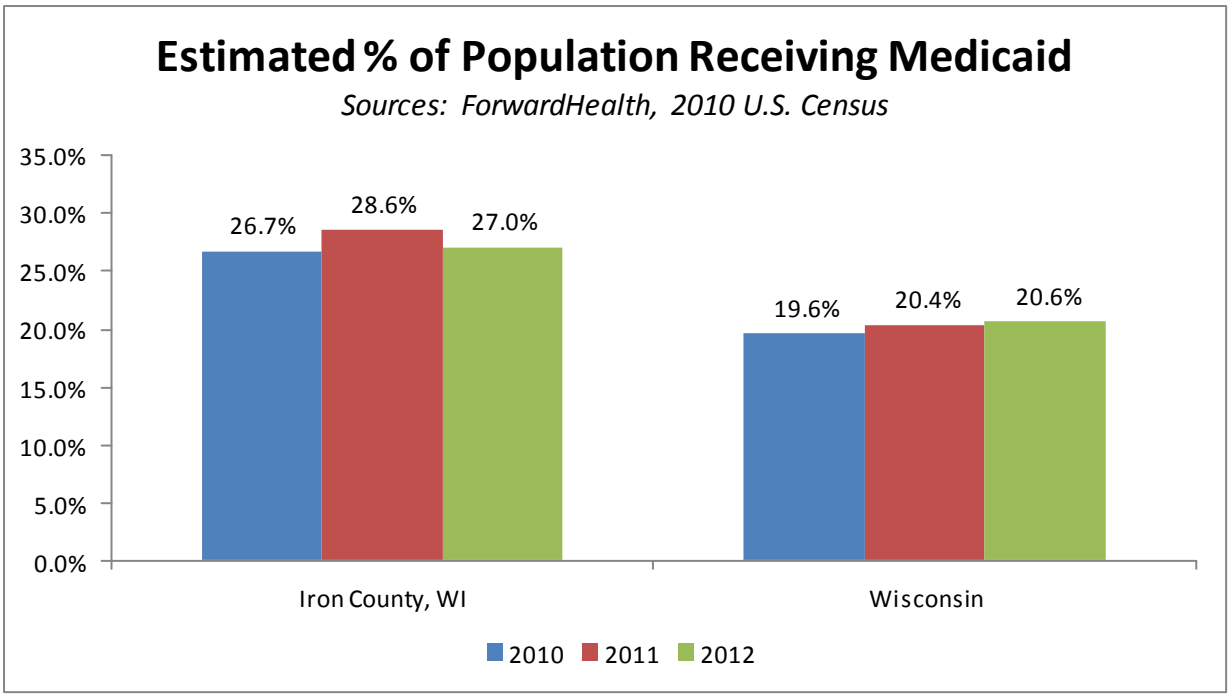
Medicaid is available to adults who are aged, blind, or disabled and meet various income and asset guidelines. The table on the next page shows the numbers of Western U.P. residents who were enrolled in this particular Medicaid program in January of each of the years listed. Supplemental Security Income (SSI) is a cash benefit to low-income adults who are aged, disabled, or blind. SSI beneficiaries are automatically eligible for Medicaid. Both SSI and non-SSI recipients are included in the counts presented.

Medicaid Enrollment—Aged, Blind and Disabled Population

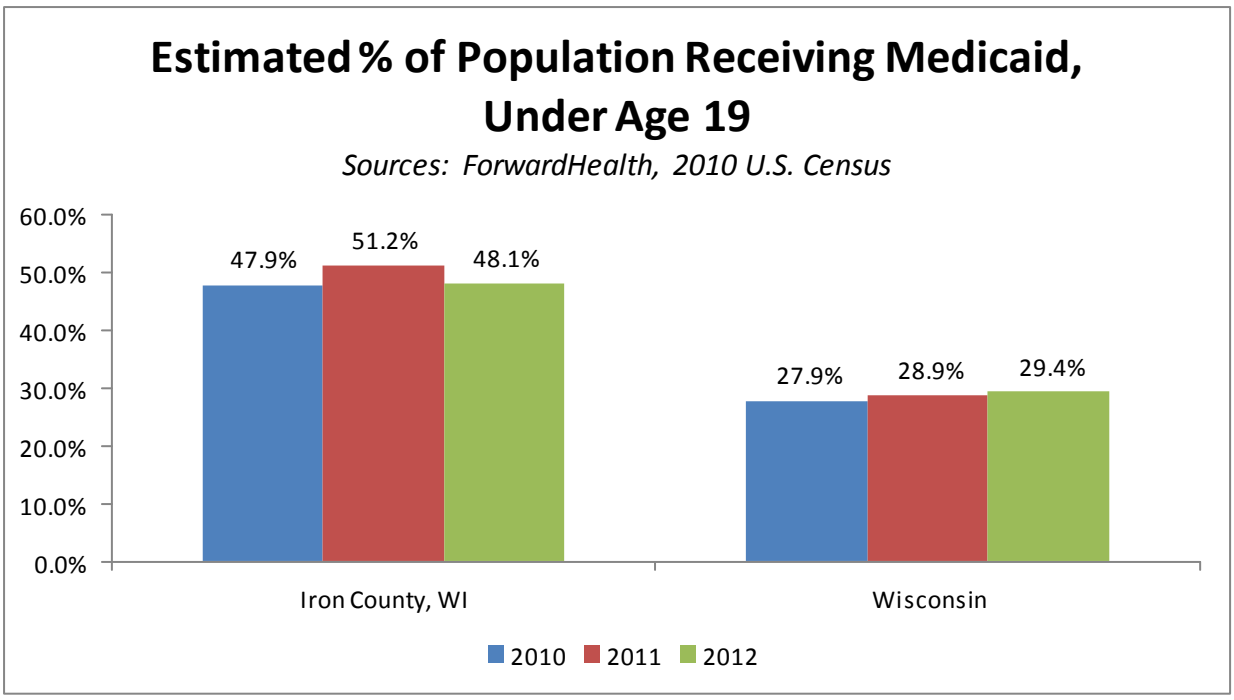
	2010	2011	2012
Baraga County	418	422	423
Gogebic County	1,105	1,110	1,159
Houghton County	1,645	1,679	1,657
Keweenaw County	100	96	91
Ontonagon County	421	411	422

Source: DHS, January snapshots.

Wisconsin's Medicaid Program, or ForwardHealth, provides medical coverage for needy Wisconsin residents who qualify. ForwardHealth plans differ in terms of coverage and eligibility from Michigan Medicaid programs, making direct comparisons between regions inappropriate. The next two graphs show the proportion of Iron County residents enrolled in any of the ForwardHealth Medicaid plans. The percentages were calculated from January enrollment snapshots and 2010 U.S. Census population statistics. Over the past three years, Iron County residents have received Medicaid benefits at a higher rate than Wisconsin residents overall



Unlike Michigan Medicaid eligibility rules, as of 2008 all Wisconsin children under 19 years of age are eligible for the BadgerCare Plus Medicaid plan, regardless of family income. The next graph shows a three year trend in Medicaid enrollments of Iron County children. The percentages were calculated from January enrollment snapshots and 2010 U.S. Census population statistics. Approximately half of Iron County children under 19 years of age receive Medicaid benefits, compared to roughly 30 percent of Wisconsin children overall. These proportions remained nearly constant over the past three years.



Local Survey Findings: Health Care Access

- An estimated 18.6% of Western U.P. adults between the ages of 18 and 64 have no health care coverage.
- Lack of health insurance is most prevalent in Ontonagon County, and among those with lower household incomes and lower levels of educational attainment.
- Ontonagon County adults are least likely to have a personal health care provider (27.3%, compared to 17.1% across the Western U.P. region).
- Younger adults, and those with lower household incomes, are less likely to have a personal health care provider than older adults and those with higher incomes.
- Cost presents a barrier to accessing health care for an estimated 22.3% of Western U.P. adults.
- Lack of transportation was cited as a barrier to accessing health care services for approximately 4% of Western U.P. adults overall, and 8.5% of adults with household incomes below $25,000.
- Roughly 40% of Western U.P. adults did not have a routine physical exam by a health professional in the past year.
- Men were less likely to have had an annual checkup than women, as were younger adults compared to older adults.

Health Professional Shortage Areas and Medically Underserved Areas

Health Professional Shortage Areas

Health Professional Shortage Areas (HPSAs) and Medically Underserved Areas (MUAs) are areas, population groups, and facilities designated by the United States Department of Health and Human Services as having met criteria indicating a significant need for additional primary health care resources. The purpose of these designations is to identify areas of greatest unmet primary health care need, so that limited resources can be prioritized and directed to those areas.

An area, population group, or facility designated as a HPSA or MUA has specific programs made available to it targeted at enhancing primary care infrastructure through recruitment and retention of health care providers and support for primary health care facilities. Federal and State programs utilizing shortage designations as criteria for eligibility include: National Health Service Corps, State Loan Repayment Program, Federally Qualified Health Center and Health Center Look-Alike Certification, Medicare Incentive Payment Program, CMS Rural Health Clinics Program, J-1 Visa Waiver and the National Interest Waiver Programs, as well as scoring preferences for various Title VII and VIII grants.

HPSA designations are granted in three disciplines:

- Primary medical care HPSAs are designated if there is an established shortage of primary care physicians for the population.
- Dental care HPSAs are granted if there is an established shortage of general dentists and pedodontists for the population.
- Mental health care HPSAs are granted if there is an established shortage of psychiatrists, or a shortage of psychiatrists, psychologists, clinical social workers, psychiatric nurse specialists, and marriage and family therapists for the population.

Within each discipline, there are three types of HPSA designations:

- Geographic areas - designations based on the ratio of an area's resident civilian population (the total population excluding those in institutions) to the number of full time equivalent (FTE) providers in the area.
- Population groups - designations based on the ratio of a particular population group (i.e. the low-income population of an area) to the number of FTE providers serving that population group (i.e. those physicians seeing Medicaid patients and/or low-income uninsured patients paying on a sliding fee scale). Members of federally recognized Native American tribes are automatically designated population groups.
- Facilities - designations granted to the facility itself based on unique criteria depending on the type of facility (general public or non-profit facility, state or federal correctional institution, state or county mental hospital, Federally Qualified Health Center, or Rural Health Clinic).

The table on the next page summarizes the types of HPSA designations in place as of July 2012 in the counties under study in this report.

Source: http://www.michigan.gov/mdch/0,1607,7-132-2945_47514-176068--,00.html

Medically Underserved Areas

Determining whether an area is medically underserved involves application of the Index of Medical Underservice (IMU) to data on a service area to obtain a score for the area. The IMU scale is from 0 to 100, where 0 represents completely underserved and 100 represents best served or least underserved. Under the established criteria, each service area found to have an IMU of 62.0 or less qualifies for designation as an MUA. The IMU involves four variables - ratio of primary medical care physicians per 1,000 population, infant mortality rate, percentage of the population with incomes below the poverty level, and percentage of the population age 65 or over. The value of each of these variables for the service area is converted to a weighted value, according to established criteria. The four values are summed to obtain the area's IMU score.

The rightmost column in the table below summarizes the MUA designations in place as of July 2012 in the counties under study in this report.

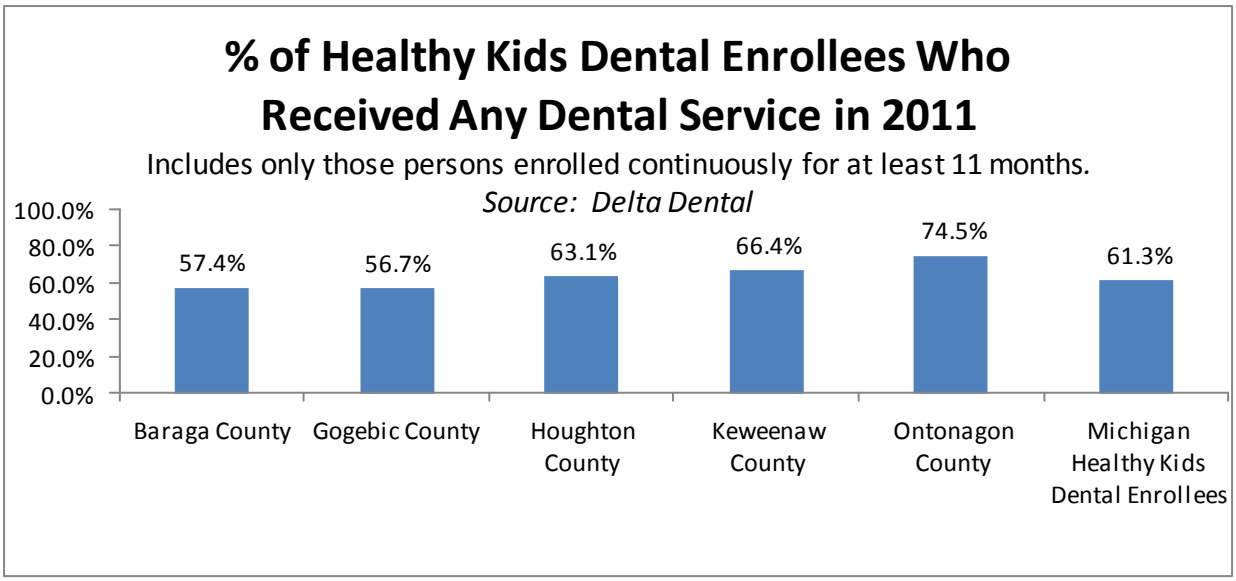
	Primary Medical Care HPSA?	**Dental Health Care HPSA?**	**Mental Health Care HPSA?**	**Medically Underserved Area?**
Baraga County	Keweenaw Bay Indian Community, Baraga Maximum Correctional	Medicaid population	Geographic area—entire county	Yes
Gogebic County	Low income population, Lac Vieux Desert Band of Lake Superior Chippewa Indians	Medicaid population	Geographic area—entire county	Yes
Houghton County	Low income population	Low income population	No	Yes
Keweenaw County	Low income population	Medicaid population	Geographic area—entire county	Yes
Ontonagon County	Low income population	Medicaid population	Geographic area—entire county	Yes
Iron County, WI	Geographic area—entire county	Low income population	Geographic area—entire county	Yes
Sources: http://www.michigan.gov/mdch/0,1607,7-132-2945_47514_47515-176079--,00.html http://worh.org/hpsamaps				

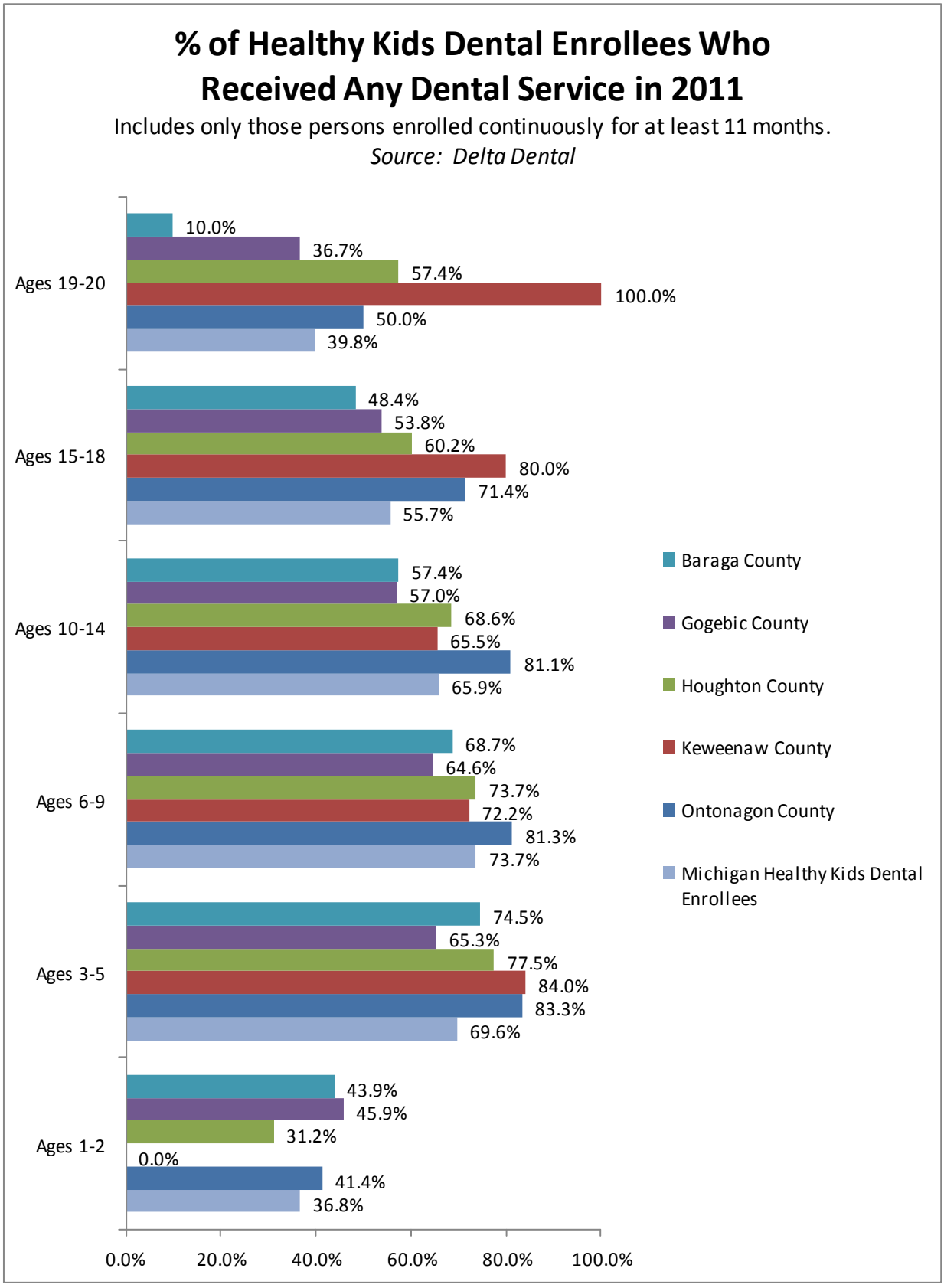
As of October 1, 2012, the Healthy Kids Dental (HKD) program is available to Medicaid-eligible children under the age of 21 in 75 of Michigan's 83 counties, all U.P. counties among them. Delta Dental administers the HKD program. Participating dentists agree to accept Delta Dental's payment for covered services as payment in full and do not charge the enrollee. Covered services include examinations, x-rays, teeth cleaning, fluoride treatments, sealants, fillings, and extractions. Eligible HKD enrollees can receive treatment from any Delta Dental Premier participating Michigan dentist who agrees to accept the lesser of the submitted fee or the amount in the HKD fee schedule as full payment for services. This schedule is, on average, 66–89 percent higher than traditional Medicaid reimbursement. In 2004, the American Dental Association (ADA) named Michigan's HKD program one of five national models for improving access to dental care for low-income populations.

The two graphs that follow show the percentage of children continuously enrolled in HKD for at least eleven months in 2011 who received any dental service in 2011. The first graph depicts rates among children under 21 years of age as a single group. The second graph shows rates within various age groups. A child's first visit to the dentist should be between the time the first tooth appears (5 - 8 months) and the time when all the primary teeth are visible (before 2 1/2 years). After the first visit, children should return to the dentist every six months for a cleaning and general examination. This schedule should be maintained through adulthood.

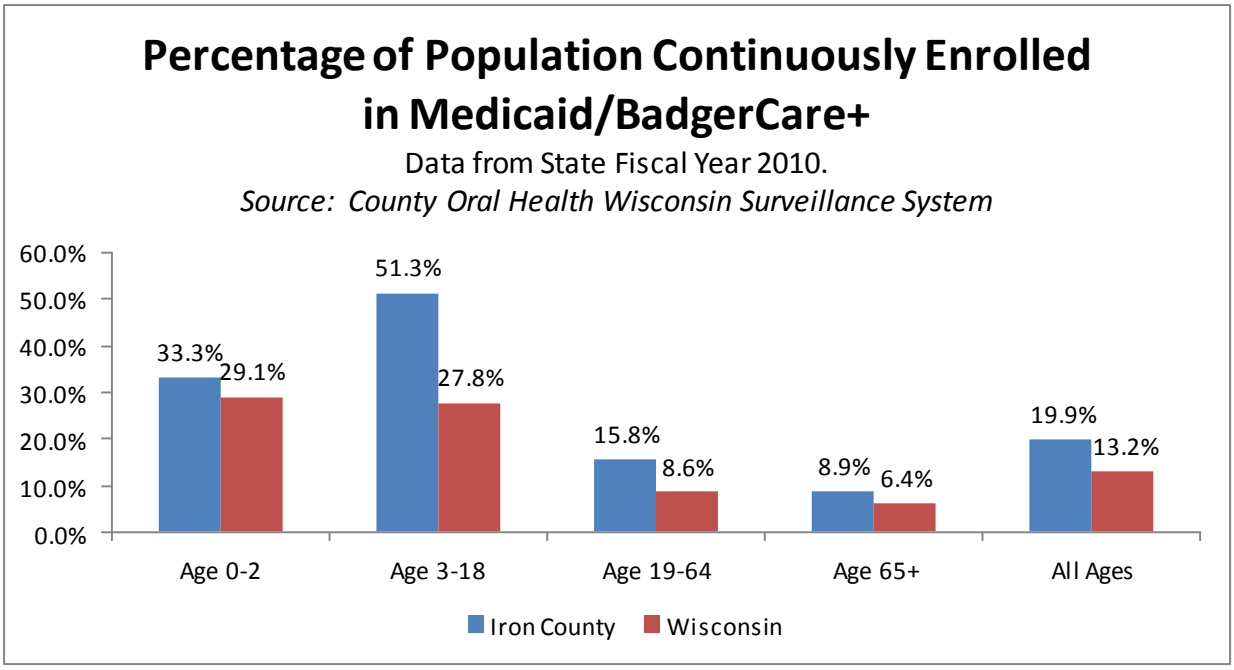
Baraga County and Gogebic County resident rates of accessing dental services were approximately 4 percent lower than Michigan's rate of 61.3 percent. Rates for residents of Houghton, Keweenaw and Ontonagon counties were higher than the state rate. In the second graph, rates across all counties jump significantly between the 1-2 year age group and 3-5 year age group. This may reflect the Head Start requirements of proof of a dental visit at age three and annually thereafter.

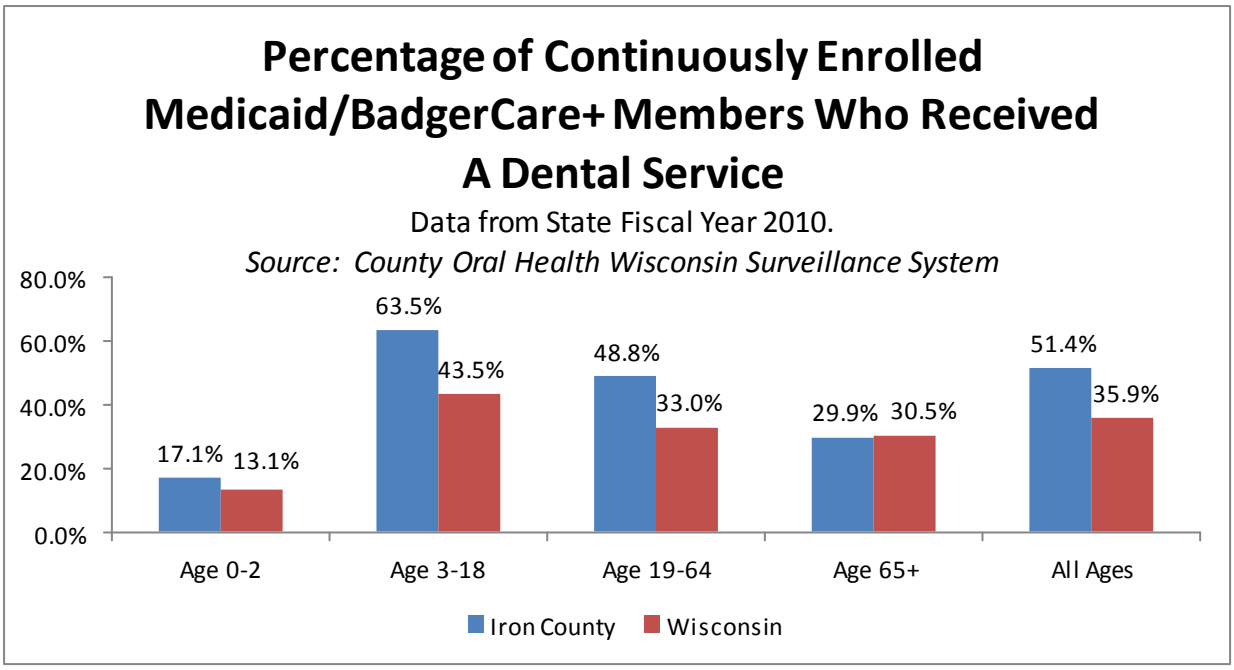
Sources:
http://www.deltadentalmi.com/
http://www.nlm.nih.gov/medlineplus/ency/article/002213.htm




% of Healthy Kids Dental Enrollees Who Received Any Dental Service in 2011
Includes only those persons enrolled continuously for at least 11 months.
Source: Delta Dental
Ages 19-20
10.0%
36.7%
57.4%
100.0%
50.0%
39.8%
Ages 15-18
48.4%
53.8%
60.2%
80.0%
71.4%
55.7%
Ages 10-14
57.4%
57.0%
68.6%
65.5%
81.1%
65.9%
Ages 6-9
68.7%
64.6%
73.7%
72.2%
81.3%
73.7%
Ages 3-5
74.5%
65.3%
77.5%
84.0%
83.3%
69.6%
Ages 1-2
43.9%
45.9%
31.2%
0.0%
41.4%
36.8%
0.0%
20.0%
40.0%
60.0%
80.0%
100.0%
Baraga County
Gogebic County
Houghton County
Keweenaw County
Ontonagon County
Michigan Healthy Kids Dental Enrollees

Medicaid provides no-cost or low-cost health coverage for eligible children and adults in Wisconsin, including dental coverage. Covered services include examinations, x-rays, teeth cleaning, fluoride treatments, sealants, fillings, and extractions. The first graph below shows the percentage of Iron County and Wisconsin residents continuously enrolled in BadgerCare+ (Medicaid) during the state's 2010 fiscal year. The second graph shows the percentage of these continuously enrolled individuals who received any dental service in 2010. Across all age groups except 65 and older, rates in Iron County are significantly higher than the state of Wisconsin overall, but still suggest a need for improved service utilization.





Local Survey Findings: Oral Health

- An estimated 41.9% of Western U.P. adults received no oral health care in the past year.
- About 50% of local adults had no dental insurance, and cost was a barrier to accessing dental services for about 25% of Western U.P. adults in the last year.
- Men were less likely than women to visit a dentist.
- Adults with household incomes below $25,000 were the least likely to visit a dentist in the past year (59.7%), the least likely to have dental insurance (71.4%), and the most likely to cite cost as a barrier to dental access (38.0%).

Community Mental Health Services Utilization

Mental Health and Developmental Disability services in Michigan are delivered through county-based community mental health services programs (CMHSPs). In the Western U.P., Copper Country Community Mental Health Services is the CMHSP for Baraga, Houghton, Keweenaw and Ontonagon counties and Gogebic County Community Mental Health Authority is the CMHSP for Gogebic County. The Michigan Department of Community Health, along with the CMHSPs, contracts public funds for mental health and developmental disability services. Due to the limited availability of public funds, the client-base of CMHSPs is skewed toward the severely mentally ill. Persons experiencing mild to moderate mental illnesses may request services from their regional CMHSP, but may be denied service due to lack of severity and advised to seek help from private-pay providers.

The data in the table that follows are 2011 counts provided by Copper Country Community Mental Health Services and Gogebic County Community Mental Health Authority. The number of clients with a current diagnosis of a major depressive disorder is approximate due to database reporting limitations.

Selected Statistics from Community Mental Health Services Programs

	Baraga, Houghton, Keweenaw and Ontonagon Counties		Gogebic County	
Number of Persons Who Received Face-to-Face Mental Health Services in 2011	*Ages 0-17:* 87	*Ages 18+:* 532	*Ages 0-17:* 148	*Ages 18+:* 365
Approximate Number of Clients with a Current Diagnosis of a Major Depressive Disorder (2011)	*Ages 12-17:* 6	*Ages 18+:* 487	*Ages 12-17:* 10	*Ages 18+:* 85
Number of Clients with a Developmental Disability (2011)	*All ages:* 209		*All ages:* 122	
Number of People Who Received a Face-to-Face Acute Service Screening in 2011	*Ages 0-17:* 58	*Ages 18+:* 332	*Ages 0-17:* 29	*Ages 18+:* 135

Sources: Copper Country Community Mental Health Services, Gogebic County Community Mental Health Authority

As indicated previously, persons experiencing mild to moderate mental illnesses may request services from their regional CMHSP, but may be denied service due to ineligibility. NorthCare Network performs the initial service eligibility screening for Western U.P. residents by telephone. The following table summarizes the number of requests for behavioral health services received in fiscal year 2011, and the response to those requests—either the scheduling of a face-to-face screening with a CMHSP or a denial of services. Eventual denial of services is possible as a result of the face-to-face screening. This was the case for 6 requests in the Copper Country Community Mental Health Services catchment area in fiscal year 2011, and 31 requests in Gogebic County.

When interpreting this table it is important to note that additional persons sought behavioral health services from providers other than their regional CMHSP. These numbers should not be interpreted as a complete quantification of need.

Outcomes of Preliminary Requests for Behavioral Health Services
October 1, 2010—September 30, 2011

	Requests for Services	Face-to-Face Screenings Scheduled	Services Denied After Preliminary Screening
Baraga County	75	42	33
Houghton and Keweenaw Counties	342	208	134
Ontonagon County	70	32	38
Gogebic County	255	152	103

Sources: Copper Country Community Mental Health Services, Gogebic County Community Mental Health Authority

Local Survey Findings: Depression

- An estimated 24.2% of Western U.P. adults have at some point in their lives been told by a doctor they had a depressive disorder.
- The local estimated lifetime depression diagnosis rates were higher among adults younger than age 65 and among those with less than a 4-year college degree.
- Females reported a significantly higher prevalence of depression than males (29.3% vs. 17.8%).

Maternal, Infant, and Child Health Chapter Introduction

The well-being of mothers, infants, and children determines the health of the next generation and can help predict future public health challenges for families, communities, and the medical care system. Moreover, healthy birth outcomes and early identification and treatment of health conditions among infants can prevent death or disability and enable children to reach their full potential. Despite major advances in medical care, critical threats to maternal, infant, and child health exist in the United States. Among the nation's most pressing challenges, according to the national Centers for Disease Control and Prevention (CDC) are reducing the rate of preterm births, which has risen by more than 20 percent from 1990 to 2006, and reducing the infant death rate, which in 2011 remained higher than the infant death rate in 46 other countries. Here is a summary of CDC research on some risk and protective factors for pregnancy-related complications and infant-child health:

- 1 in 5 women are obese at the beginning of their pregnancy, placing them at increased risk of complications, including high blood pressure and diabetes, during pregnancy. Infants born to obese women are twice as likely to be obese and to develop type 2 diabetes later in life.
- Approximately 12 percent of pregnant women in the United States smoke during pregnancy and another 12% of pregnant women in the United States have consumed alcohol in the past 30 days. These behaviors not only negatively affect women's health and safety, but significantly increase their infants' risk of serious health problems—including premature birth and birth defects—and increased infant mortality.
- Of women who could get pregnant, 69% do not take recommended folic acid supplements, 31% are obese, and about 3% take prescription or over-the-counter drugs that are known to cause birth defects.
- Approximately 1 in 10 women are depressed during any trimester of pregnancy, or any month within the first year after delivery. Depression can inhibit a woman's ability to perform daily activities, bond with her infant, and relate to her family.
- Birth defects are one of the leading causes of infant deaths, accounting for more than 20% of all infant deaths. Some of these birth defects can be prevented and, with proper prenatal care, many can be detected before birth, enabling better care during and after birth.
- Newborn health screenings and wellness visits can detect and sometimes prevent or ameliorate diseases and serious health disorders, such as sickle cell disease or hearing loss, that can have profound effects on a child's health throughout his or her lifetime.
- Scheduled immunizations can protect infants and children from numerous vaccine-preventable diseases, including chickenpox, measles, and mumps. Scheduled immunizations are especially important for children age 2 and younger, who are at the highest risk for certain infectious diseases like pneumonia, sepsis, and meningitis.

Local Focus

- Regional infant mortality rates, while they fluctuate in any given year based on one or few events, over time are somewhat below the state long-term rate, at around 6/1,000 in the Western U.P. compared with about 7/1,000 statewide. The United States, at 6.81/1,000, ranked 34th among 194 nations in a 2011 United Nations report. The lowest rate was in Singapore (1.98) and the highest in Afghanistan (136).
- Between a quarter and half of all local infants are born to single-parent households, and in 2010, 58.8 percent of births to Baraga County residents, and 52.2 percent in Gogebic County, were to unmarried women. Those two counties have experienced increases in births to teens and births to less than high school graduates in recent years.
- Half to three quarters of local births in recent years have been paid by Medicaid, with rates above 60 percent in Gogebic and Ontonagon counties and as high as 73 percent in Baraga County in 2009, an indication of high rates of child poverty and unemployment.
- Tobacco use during pregnancy is common, with the percentages of births to women who smoked while pregnant exceeding 20 percent in all counties, above 30 percent in Ontonagon County, and above 40 percent in Baraga County.
- Local childhood immunization rates (the percentage of children aged 19-35 months who have received all recommended vaccine doses) have risen in recent years after dropping in the last decade in part due to fears about vaccine safety. The recent-year rates of fully immunized toddlers in Baraga, Ontonagon and Gogebic counties are around three-in-four, similar to the Michigan rate, whereas in Houghton and Keweenaw counties, still about one-third of toddlers are not fully immunized.

Potential Future Implications

- Access to prenatal care, well-child examinations, immunizations and other maternal-child health services is an on-going priority, as prevention efforts in these earliest years is the most cost-effective and has the best chance of success.
- Tobacco use in pregnancy is a risk factor for delivery of low birth weight infants, as well as increased perinatal and neonatal loss. Low birthweight is risk factor for a number of poor outcomes for infants.
- Teen births are associated with poorer outcomes for both mother and child. Teen mothers are more likely to drop out of school with overall lower educational attainment and lower income. Teens are at increased risk of delivering preterm and low birthweight infants. The children of teen mothers are more likely to drop out of school, have poorer health status and be incarcerated during adolescence. They are also more likely to be unemployed as young adults and to experience teen pregnancies themselves.
- Increasing rates of births to unmarried mothers is a health concern because they and their infants are more likely to experience poorer health in general. Compared to their married counterparts, single mothers are less likely to get adequate prenatal care, more likely to smoke and more likely

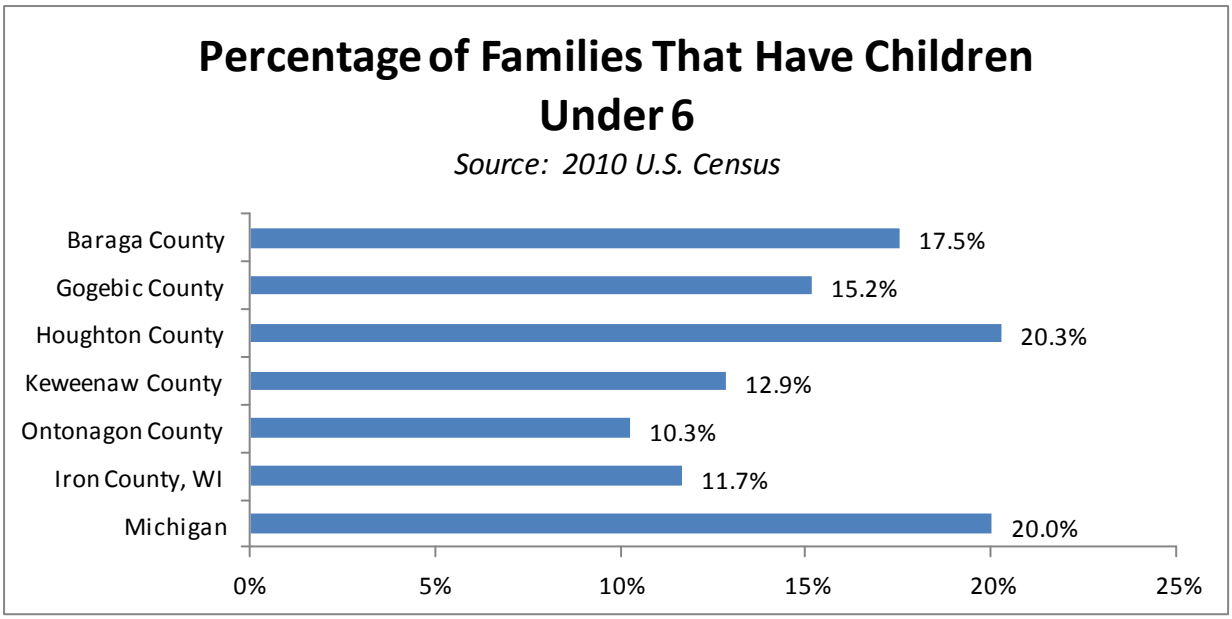
to deliver a low birthweight baby with attendant risks.

Source:

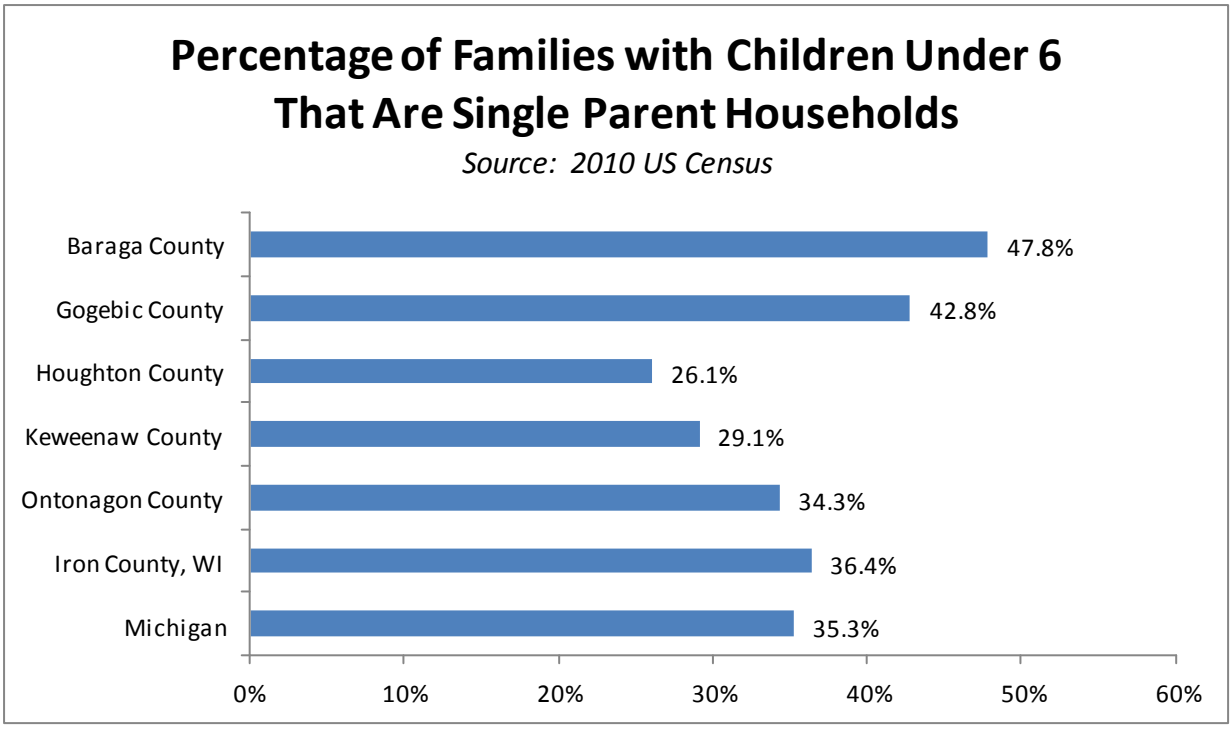
United Nations World Population Prospect, 2011 Revisions, Infant Mortality Country Rankings, 2005-2009 Estimates.

Maternal, Infant, and Child Health

The data presented first in this section are intended to help quantify the size of the Western U.P. region's young child population. Earlier data presented in this report showed that all of the counties under study had a lower percentage of children in the under 5 age group than the state overall, with Houghton County being closest to the state proportion at 5.8 percent. The first graph in this section shows the percentage of families that included children under age 6 when the 2010 census was taken. A family consists of a householder and one or more other people related to the householder by birth, marriage, or adoption. The data indicate that a family in Ontonagon County is least likely to have young children while families in Baraga County and Houghton County are most likely. With the exception of Houghton County, families with children under age 6 are less common in the Western U.P. than in the state overall.



The next graph shows the percentage of families with children under age 6 that were single parent households in 2010. A household is classified as single parent even if another adult is present, but it is not the spouse of the householder. In Baraga County, almost half of families with children under age 6 are single parent households. This situation is also quite common in Gogebic County, where 42.8 percent of families with very young children have only one parent living in the home.



The majority of the remaining graphs in this section summarize statistics related to infants born in the Western U.P. region. The table below shows the number of births to residents of each county per year from 2006 through 2010. It will be helpful to keep these relative birth rates in mind when viewing rates expressed as percentages or numbers per 1,000 population. When the total number of births in a year is small, as is the case for many of the counties under study in this report, the addition of one more events to the numerator can result in a significant change in the rate. Despite this limitation, normalized rates are necessary for making comparisons between areas with different population sizes.

Numbers of Births to Residents (based on residence, not location of delivery)

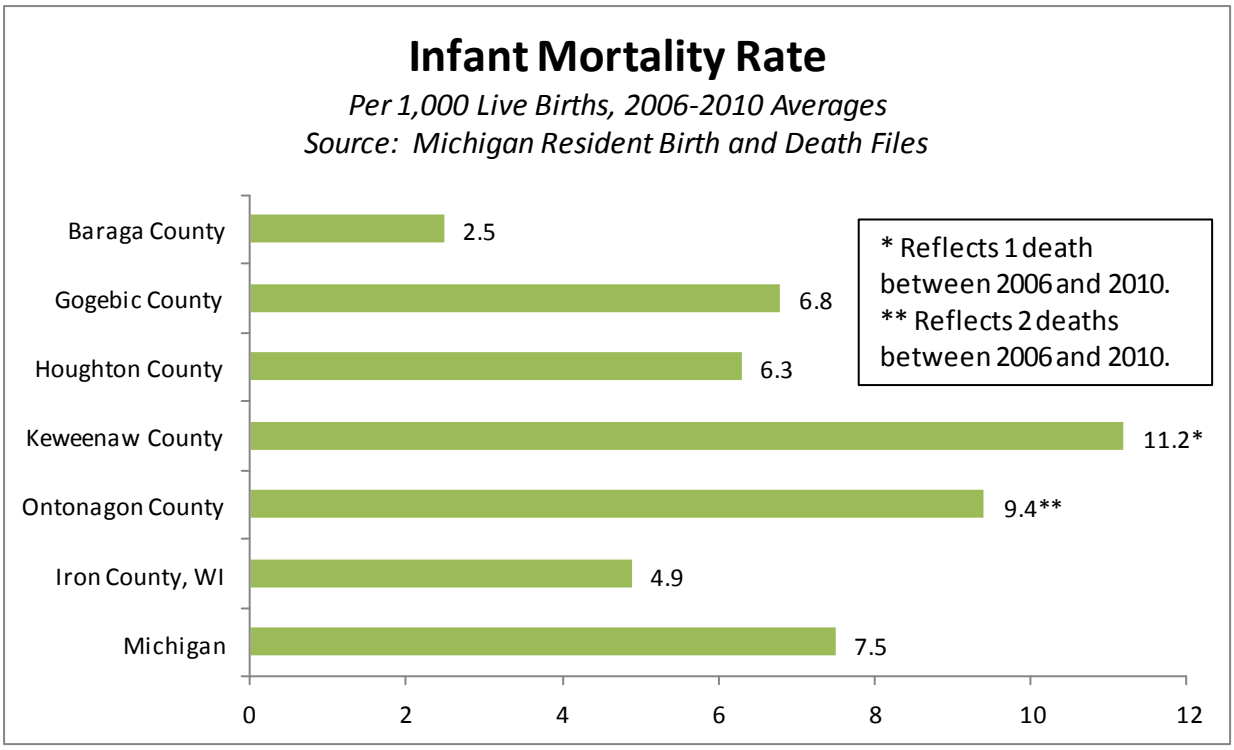
	2006	2007	2008	2009	2010
Baraga County	84	85	81	66	85
Gogebic County	150	156	156	139	134
Houghton County	420	412	407	410	431
Keweenaw County	13	19	18	27	12
Ontonagon County	49	54	32	39	38
Iron County, WI	40	38	52	36	40

Sources: Michigan Department of Community Health, Wisconsin Interactive Statistics on Health

Infant Mortality

Infant mortality is defined as deaths occurring to individuals less than 1 year of age. Infant mortality rates are calculated as number of resident infant deaths divided by total resident live births × 1,000.

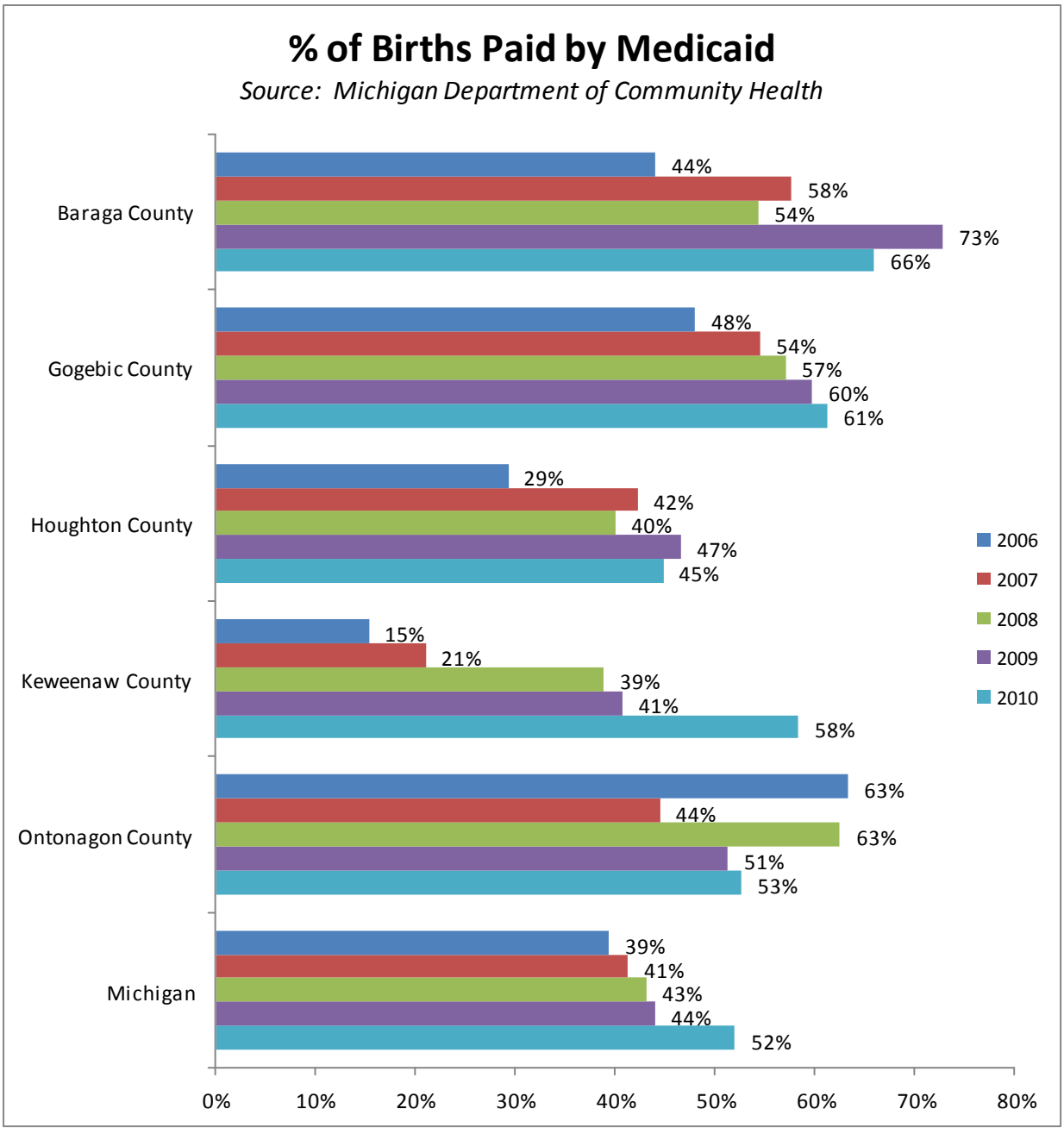
The graph below shows the average annual infant mortality rate for the years 2006 through 2010. Even when using a 5-year span, a single event has a significant impact on local rates, given the small number of births per year. For example, one infant death in five years in Keweenaw County resulted in an average annual infant mortality rate of 11.2 deaths per 1,000 live births in that county. The average annual rate of 9.4 deaths per 1,000 live births in Ontonagon County is the result of two infant deaths in five years.



The long-term infant mortality rate in the Western U.P. region (over the last 20 years) is about 6 per 1,000, similar to the Michigan rate for White infants. Infant mortality rates for Blacks in SE Michigan are significantly higher. By comparison, the estimated 2010 infant mortality rate for Finland was 2 deaths per 1,000 live births, for the United States 7 deaths per 1,000 live births, for China 16 deaths per 1,000 live births, and for Somalia 108 deaths per 1,000 live births.

Source:
2011 Levels and Trends in Child Mortality report published by the UN Inter-agency Group for Child Mortality Estimation.

In Michigan, pregnant women with no health insurance qualify for Medicaid with a household income below 185 percent of poverty. The exact income level that results in eligibility depends on family size, for example $31,946 for a married couple in 2009, or $27,000 for a single woman. The next graph shows a five year trend in the percentage of births paid by Medicaid, a reliable measure of low to moderate income among families with infants. Baraga County and Gogebic County rates exceed those of Michigan each year from 2006 through 2010. Nearly all counties under study show an increasing trend in the proportion of births paid by Medicaid, evidence of worsening economic status among families with young children. These families, generally headed by younger parents, tend to be more vulnerable to unemployment and underemployment trends. Comparable data for Iron County, Wisconsin births were not available.



Infant Risk Factors

The next series of tables report 2007-2009 averages compared to 2010 rates for six factors correlated to an increased likelihood of poor health outcomes among infants: preterm births, low birth weight, unwed mothers, mothers with less than twelve years of education, mothers who smoked while pregnant, and mothers who were less than 20 years old when they gave birth.

Preterm births are infants born prior to 37 completed weeks of gestation. The data show that the counties under study generally have lower rates of preterm births than the state overall, with the exception of Gogebic County which is similar to the state rate.

% of Births That Were Preterm		
	Average, 2007—2009	**2010**
Baraga County	6.5%	8.2%
Gogebic County	10.0%	11.2%
Houghton County	6.8%	7.2%
Keweenaw County	*	*
Ontonagon County	5.6%	*
Iron County, WI	11.1%	*
Michigan	10.2%	9.8%
Sources: Michigan Department of Community Health, Wisconsin Interactive Statistics on Health * indicates that data were suppressed because of the small numbers of records involved. Publishing these rates which would compromise vital records data privacy guidelines.		

Low weight births are less than 2,500 grams (about 5.5 pounds). Some low birthweight babies are healthy, even though they're small, but being low birthweight can cause serious health problems in some cases.

The data compiled below show that between 2007 and 2010, babies born in the Western U.P. region were less likely to be underweight than Michigan-born babies overall. In Baraga, Houghton, Keweenaw and Ontonagon counties, 2010 saw an increase in rates compared to the three-year average preceding it, but with such few events, a one-year change hardly constitutes a trend. Keweenaw County's rate of 25.0% is the result of 3 out of 12 babies born in 2010 being below 2,500 grams.

About 7 of 10 low-birthweight babies are premature.

% of Births Classified as Low Weight		
	Average, 2007—2009	**2010**
Baraga County	4.3%	10.6%
Gogebic County	7.3%	6.7%
Houghton County	4.8%	6.3%
Keweenaw County	0.0%	25.0%
Ontonagon County	3.2%	10.5%
Iron County, WI	4.0%	*
Michigan	8.5%	8.4%
Sources: Michigan Department of Community Health, Wisconsin Interactive Statistics on Health * indicates that data were suppressed because of the small numbers of records involved. Publishing these rates which would compromise vital records data privacy guidelines.		

The next table shows the percentage of births to unwed mothers between 2007 and 2010. Over half of the births in Baraga County were to unmarried mothers, exceeding the state rate by close to 15 percent. The rate of births to unwed mothers in Gogebic County also exceeded the state rate, but by a smaller margin. Rates in the remaining counties under study were consistently lower than the state rate. Marital status has been statistically correlated to a variety of other factors that put infant health at risk. Unmarried mothers are less apt to receive adequate prenatal care, more likely to smoke during pregnancy, and less likely to gain adequate weight during pregnancy. As a consequence of these factors, babies born to unmarried women are at elevated risk of low birthweight.

Source:
http://www.cdc.gov/nchs/data/series/sr_21/sr21_053.pdf

% of Births to Unmarried Mothers		
	Average, 2007—2009	**2010**
Baraga County	54.7%	58.8%
Gogebic County	41.0%	52.2%
Houghton County	22.5%	24.6%
Keweenaw County	15.6%	*
Ontonagon County	32.8%	34.2%
Iron County, WI	36.5%	35.0%
Michigan	40.5%	42.1%
Sources: Michigan Department of Community Health, Wisconsin Interactive Statistics on Health * indicates that data were suppressed because of the small numbers of records involved. Publishing these rates which would compromise vital records data privacy guidelines.		

Birth rates to women with less than twelve years of education are tabulated next. In general, the prevalence of this infant risk factor was lower in the Western U.P. than in the state overall during the timeframe investigated. Michigan data for 2008 and 2009 were not available. In Iron County, Wisconsin, from 2008-2010 6.25% of births were to mothers with less than a high school diploma.

Mothers who have not graduated from high school are more likely to have difficulty finding employment and generally experience more economic stress than those with at least a high school diploma. As a result, children whose mothers have less than twelve years of education are more likely to live in poverty.

Source:
Wisconsin Interactive Statistics on Health

% of Births to Mothers With Less Than 12 Years of Education		
	Average, 2005—2007	**2010**
Baraga County	15.2%	15.3%
Gogebic County	10.8%	17.2%
Houghton County	6.6%	4.9%
Keweenaw County	*	0.0%
Ontonagon County	9.0%	*
Michigan	16.8%	15.4%

Sources: Michigan Department of Community Health
* indicates that data were suppressed because of the small numbers of records involved. Publishing these rates which would compromise vital records data privacy guidelines.

In the next table, rates of prenatal smoking are summarized. The U.S. Standard Certificate of Live Birth includes survey questions that capture this information. Mothers who smoked while pregnant were those who had a history of smoking and did not quit, plus those who quit at some point between estimated conception and birth date.

The lower birth weight of babies born to mothers who smoke has been documented for almost 40 years. Nicotine affects the developing fetus by reducing blood flow through the placenta, which retards growth and contributes directly to low birth weight. Evidence also exists to correlate prenatal smoking with a higher probability of Sudden Infant Death Syndrome (SIDS).

Recent birth certificate data show that prenatal smoking is consistently more common in Western U.P. counties than in Michigan overall. The highest rate is in Baraga County, where more than 40 percent of mothers who gave birth between 2008 and 2010 reported smoking while pregnant. Gogebic County has the second highest rate, averaging more than 25 percent between 2008 and 2010.

Source:
http://www.cdc.gov/reproductivehealth/prenatalsmkbk/index.htm

% of Births to Mothers Who Smoked While Pregnant		
	Average, 2008—2009	**2010**
Baraga County	44.9%	40.0%
Gogebic County	28.1%	26.9%
Houghton County	22.0%	23.0%
Keweenaw County	20.0%	*
Ontonagon County	36.6%	21.1%
Iron County, WI	At least 15.9%	At least 12.5%
Michigan	18.1%	17.8%

Sources: Michigan Department of Community Health, Wisconsin Interactive Statistics on Health
* indicates that data were suppressed because of the small numbers of records involved. Publishing these rates which would compromise vital records data privacy guidelines.
Iron County rates are reported as minimums because a significant number of mothers did not answer either affirmatively or negatively.

Local Survey Findings: Women and Smoking

- Approximately 25% of Western U.P. adult women reported being current smokers.
- Among current female smokers, nearly half reported trying to quit smoking for one day or longer in the past year.

The final table in this series summarizes the percentage of births that were to teens under age 20. Teen mothers are more likely to have a birth that is preterm and/or low-birthweight, and are the least likely of all maternal age groups to get early and regular prenatal care. The Institute of Medicine lists preterm birth and low-birthweight as major contributing factors to infant mortality, and notes that preterm infants are at increased risk of acute respiratory, gastrointestinal, and neurological conditions, as well as other major medical challenges. The data indicate that births to teens are more common in Baraga County than in the state overall. Gogebic County saw in increase in 2010, but prior to that year rates were slightly lower than the state average of 10 percent.

Source:
http://www.thenationalcampaign.org/why-it-matters/pdf/Childbearing-Infant-Health.pdf

% of Births to Teens Under Age 20		
	Average, 2007—2009	**2010**
Baraga County	11.2%	14.1%
Gogebic County	7.8%	17.9%
Houghton County	5.9%	5.6%
Ontonagon County	8.0%	*
Michigan	10.1%	9.5%

Sources: Michigan Department of Community Health, Wisconsin Interactive Statistics on Health
* indicates that data were suppressed because of the small numbers of records involved. Publishing these rates which would compromise vital records data privacy guidelines.
Keweenaw County data for 2007-2009 were not available due to small numbers of events. In 2010, no Keweenaw County births were to teens under 20.
Single year data for Iron County were not available due to small numbers of events, but 4.8% of the births that occurred from 2007-2010 were to teens under 20.

Infant Protective Factors

The graph on the next page provides a 2010 snapshot of three maternal characteristics shown to protect infant health and promote positive health outcomes in early childhood and beyond.

The first infant protective factor reported in the following graph is the prevalence of prenatal care during the first trimester. Early prenatal care allows health care providers to identify and manage a woman's risk factors and health conditions during pregnancy, maximizing the likelihood of a healthy baby and complication-free delivery. Among Western U.P. counties, receipt of prenatal care in the first trimester was notably lower among women in Baraga and Houghton counties (approximately 67 percent) when compared to the state rate of 74 percent. In 2010, 82.5% of Iron County mothers received prenatal care during their first trimester in 2010.

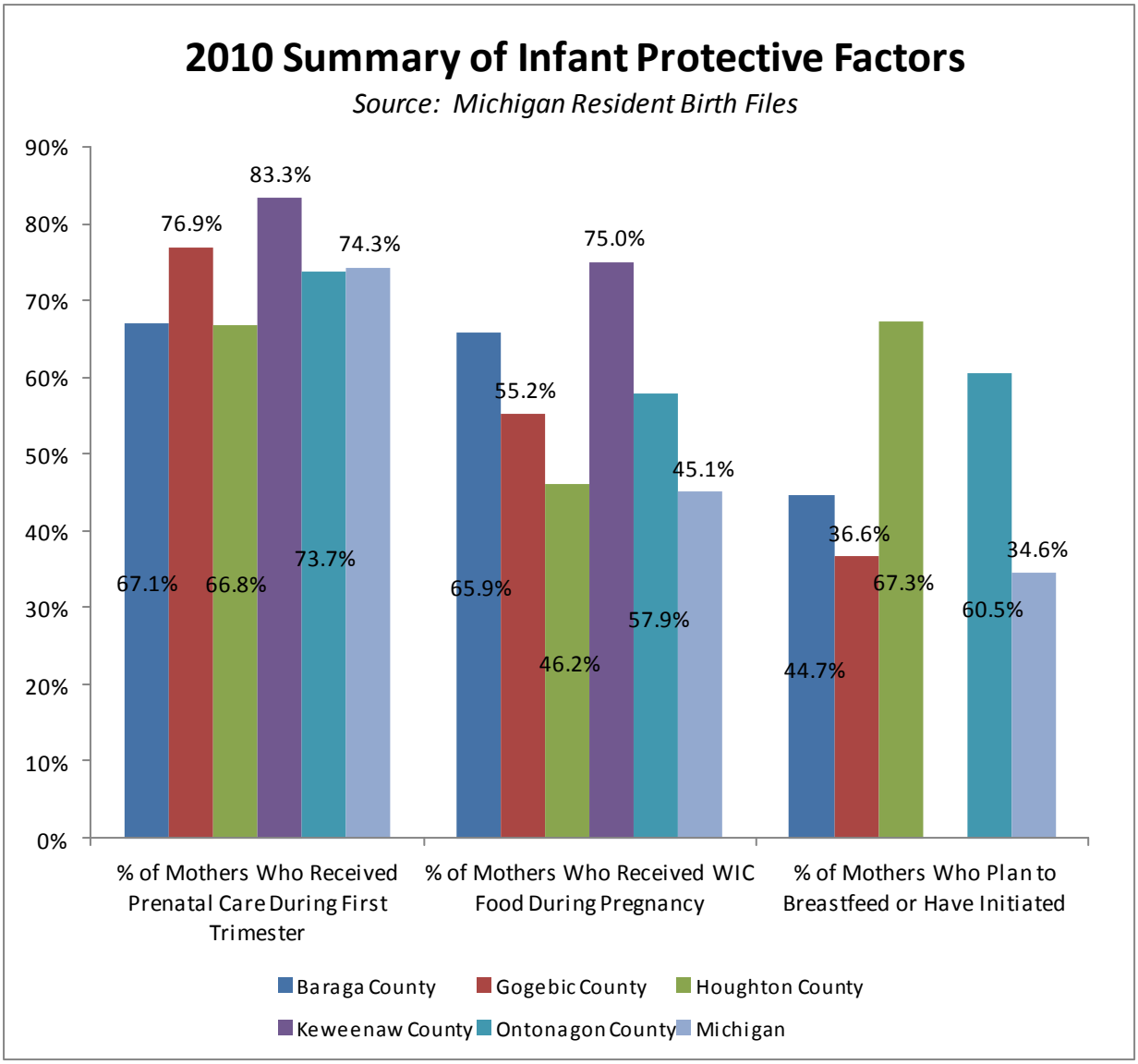
The second protective factor examined was the rate of WIC enrollment among mothers-to-be. The Women, Infants, and Children (WIC) program is a federally-funded health and nutrition initiative. Participants must meet income guidelines and be pregnant women, new mothers, infants or children under age five. Research has shown that the WIC program plays a role in improving birth outcomes and containing health care costs. A series of reports published by USDA based on linked 1988 WIC and Medicaid data on over 100,000 births found that every dollar spent on prenatal WIC participation for low-income Medicaid women in five states resulted in fewer premature births, lower incidence of moderately low and very low birth weight infants, and fewer infant deaths. All Western U.P. counties reported WIC program participation rates by pregnant women that exceeded the state rate of 45 percent in 2010. Iron County, Wisconsin WIC food program participation rates among pregnant women were not available.

The third protective factor quantified on the next page is breastfeeding, which has multiple short and long term benefits for infants and mothers. For example, breast milk is easy to digest and contains antibodies that can protect infants from bacterial and viral infections. Also, a baby's risk of becoming an overweight child goes down with each month of breastfeeding. Lower rates of certain breast and ovarian cancers among women who breastfed their infants are examples of the benefits of breastfeeding to maternal health.

In 2010, it was more common for women in Baraga, Gogebic, Houghton, and Ontonagon counties to plan to breastfeed than in the state overall. Rates were as high as 67 percent in Houghton County. Keweenaw County's breastfeeding rate was not published because so few events would compromise vital records data privacy guidelines. Iron County, Wisconsin breastfeeding rates were not available.

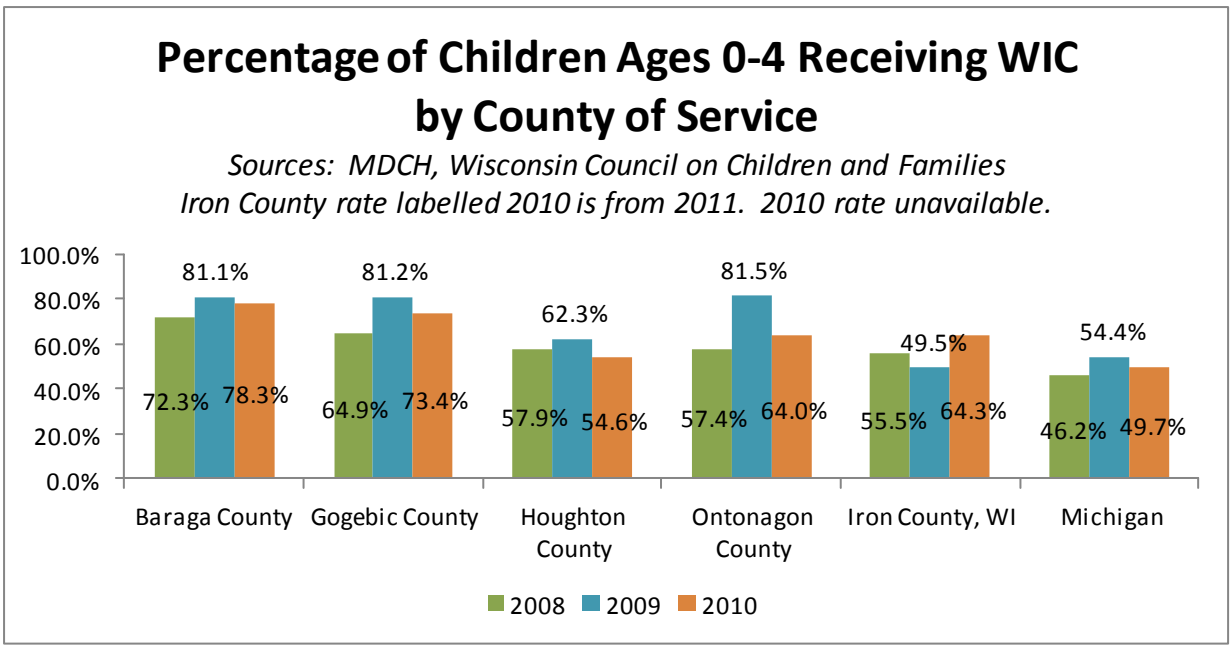
Sources:

Wisconsin Interactive Statistics on Health
http://www.fns.usda.gov/wic/aboutwic/howwichelps.htm
http://www.cdc.gov/family/minutes/tips/breastfeeding/index.htm


2010 Summary of Infant Protective Factors
Source: Michigan Resident Birth Files
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
67.1%
76.9%
66.8%
83.3%
73.7%
74.3%
65.9%
55.2%
46.2%
75.0%
57.9%
45.1%
44.7%
36.6%
67.3%
60.5%
34.6%
% of Mothers Who Received Prenatal Care During First Trimester
% of Mothers Who Received WIC Food During Pregnancy
% of Mothers Who Plan to Breastfeed or Have Initiated
Baraga County
Gogebic County
Houghton County
Keweenaw County
Ontonagon County
Michigan

Children Enrolled in WIC

Shown in the next graph are three year trends in the proportion of children under age five enrolled in the WIC program. Almost without exception, Western U.P. children are enrolled in WIC at a higher rate than children across Michigan. The counties with the most consistently high enrollment rates are Baraga and Gogebic, where upwards of 75 percent of children qualify for this nutrition program, which is aimed at improving the health of children in low-income families.



The CDC's Pediatric Nutrition Surveillance System (PedNSS) is a program-based surveillance system that monitors the nutritional status of low-income infants and children in federally funded maternal and child health programs. Nationwide, PedNSS data represent over 8 million children from birth to age 5. The majority of PedNSS records (87.0%) are from the WIC Program.

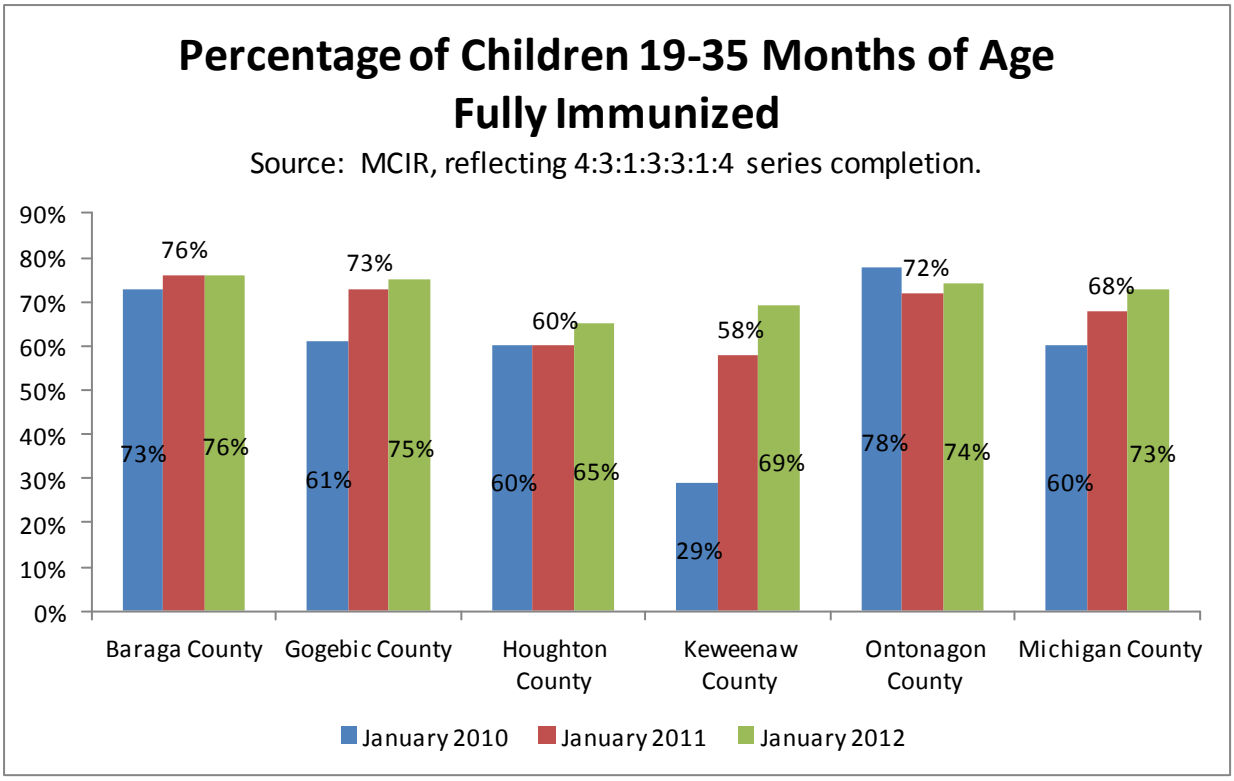
According to a December 2012 snapshot, 9.7% (63 out of 650) of children ages 2-5 participating in WIC programs administered by the Western U.P. Health Department in Baraga, Gogebic, Houghton, Keweenaw, and Ontonagon counties were obese as of their last height and weight screening. This determination is based on 2000 CDC BMI-for-age growth chart percentiles . Values greater than or equal to the 95th percentile indicate an obese weight status. According to PedNSS, the 2011 rate for Michigan overall was 13.3% obese for children ages 2-5. This rate is based on one record per child for the January 1, 2011 to December 31, 2011 reporting period.

Source: http://www.cdc.gov/pednss/pednss_tables/pdf/national_table6.pdf

Childhood Immunization Status

In order to be considered fully immunized in Michigan, toddlers must have completed the 4:3:1:3:3:1:4 series before they reach 35 months of age. The 4:3:1:3:3:1:4 series consists of four or more doses of diphtheria and tetanus toxoids and pertussis (DTP) vaccine, three or more doses of poliovirus vaccine, one or more doses of measles-containing vaccine, plus three or more doses of Haemophilus influenzae type b (Hib) vaccine, three or more doses of hepatitis B vaccine (HepB), one or more doses of varicella vaccine, and four or more doses of pneumococcal vaccine. The graph below provides three snapshots of toddler immunization rates in the Western U.P., 2010 through 2012. Baraga and Ontonagon counties consistently report the highest rates of complete immunization in the region, while Houghton County generally reports the lowest. The small population size in Keweenaw County results in one child's immunization record creating a dramatic shift in rate for the county.

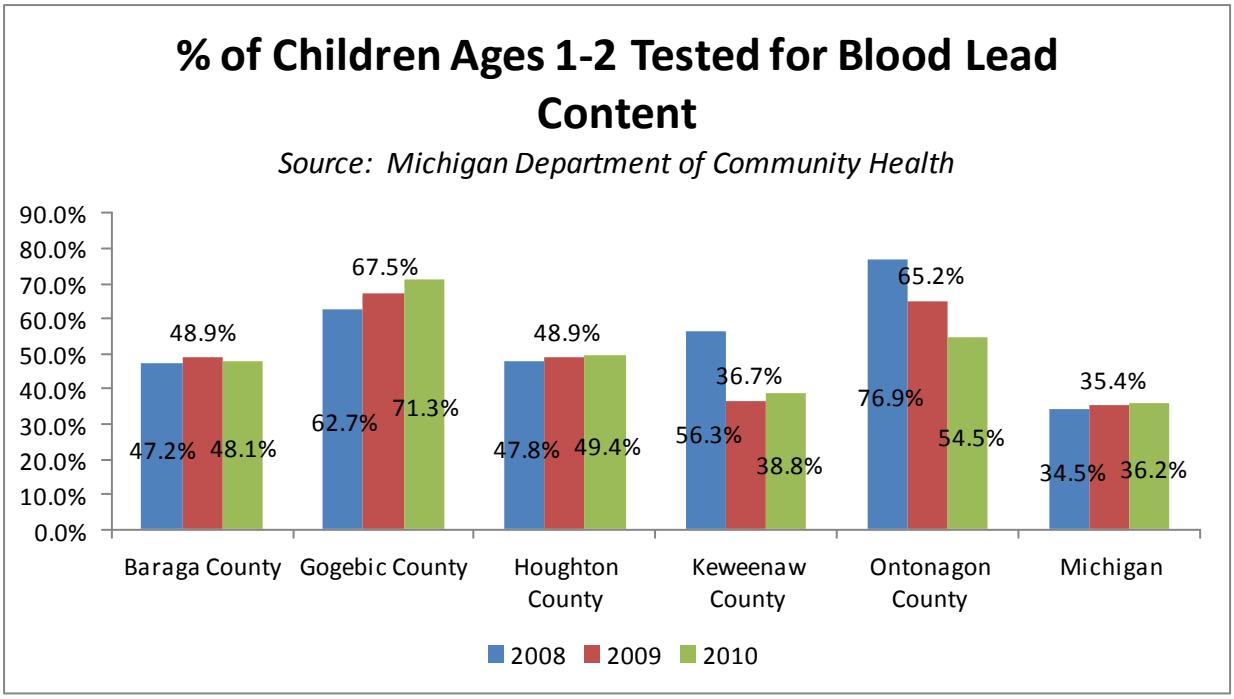
Iron County, Wisconsin data for toddlers who completed the 4:3:1:3:3:1 series was obtained from the Iron County Health Department. This series is the same as the 4:3:1:3:3:1:4 series minus the pneumococcal vaccine. A February 2011 snapshot showed that 81 percent of Iron County toddlers had completed this immunization series by the time they reached 36 months of age, compared to 65 percent of Wisconsin toddlers statewide.



In the 1990s, Michigan had one of the nation's lowest childhood immunization rates. Development of MCIR (originally the Michigan Childhood Immunization Registry) and efforts by public health and private providers led to gains in immunization status, but speculation about the risk of early immunization, based on now-discredited claims about links between the MMR vaccine and autism, fueled setbacks in the rate from roughly 2005-2010. Rates have climbed again in recent years.

Blood Testing for Lead

The next graph shows three-year trends in the percentage of children ages 1-2 tested for lead in their blood. Elevated blood-lead levels are associated with lower IQs, impaired growth and neurological development, and behavior problems. First identified as a hazard to children in the 1950's, lead-based paint was banned for use in all homes and most buildings in 1978. The older the home, the more likely it is that lead paint was used since lead-based paint was used almost universally before 1950. According to 2006-2010 estimates from the American Community Survey, approximately 30% of occupied housing stock in Baraga County was built pre-1950. In Ontonagon County and Iron County, Wisconsin the estimate is 40%. Gogebic, Houghton and Keweenaw counties have even older occupied housing stock with over 50% estimated to be pre-1950 built. In Michigan, the rate is slightly less than 25%. Given the advanced age of the occupied housing stock in the Western U.P., it is encouraging to see that blood-lead testing occurs at a higher rate in Western U.P. counties compared to the state overall. Whether all children living in the highest risk housing settings are being tested is not discernible from this data.



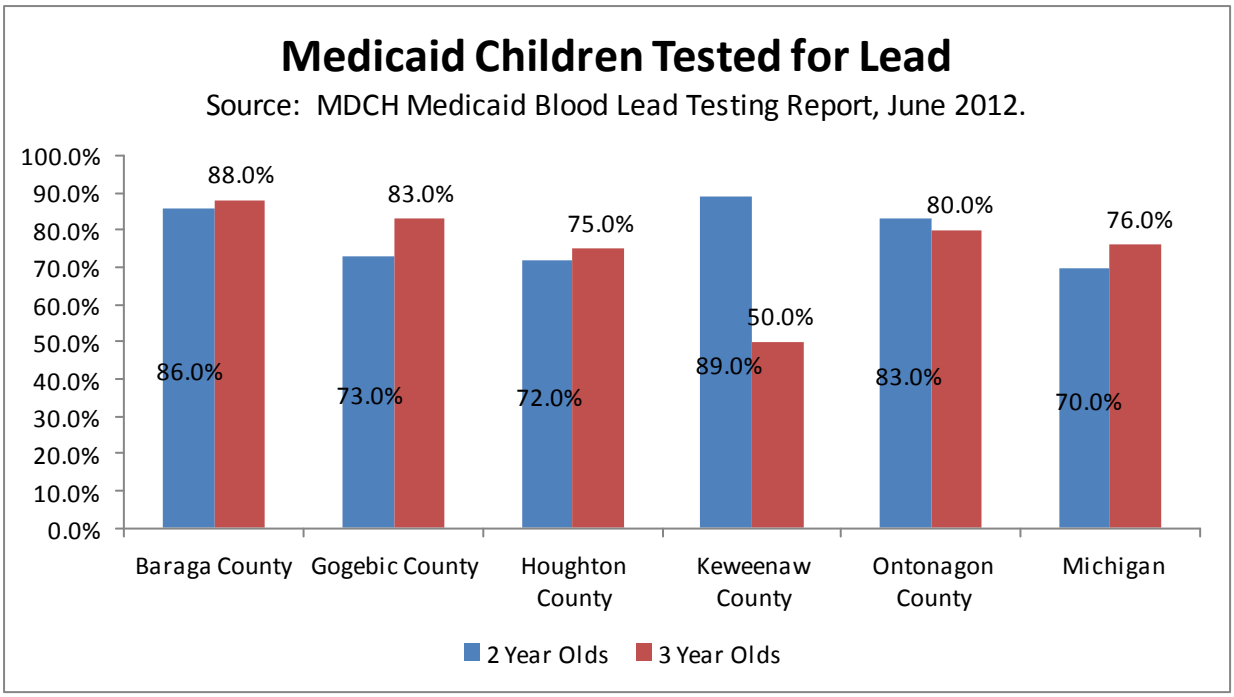
In each Michigan county listed above, fewer than 6 occurrences of elevated lead levels were found in 2010. In Michigan overall, 0.8% of 2010 tests showed elevated lead levels.

Iron County data from 2009 showed that approximately 38 percent of children under age six had been tested for blood lead content, compared to 23 percent of that age group in Wisconsin overall. Zero occurrences of elevated lead were reported in 2009. In Wisconsin overall, 0.75% of 2009 tests showed elevated lead levels.

Source:
http://www.cdc.gov/nceh/lead/data/state/widata.htm

All Medicaid enrolled children are considered by federal policy to be at high risk for blood-lead poisoning. In accordance with the Centers for Medicare and Medicaid Services guidelines, Michigan Medicaid policy requires that all Medicaid enrolled children be blood-lead tested at 12 and 24 months of age, or between 36 and 72 months of age if not previously tested.

In the graph below, the 2-year-old column shows the percent of eligible children with at least one test on or before their second birthday. The 3-year-old column shows the percent of eligible children with at least one test on or before third birthday. All Western U.P. counties exhibit room for improvement in order to meet the recommended testing guidelines of 12 and 24 months of age, but most show better compliance than the state overall.



Previously, a child's blood-lead level (BLL) of 10 micrograms per deciliter (µg/dL) was considered in need of action. In May, 2012, the Centers for Disease Control and Prevention (CDC) concurred with its advisory committee's recommendation to lower that level to 5µg/dL (PDF, 281 KB). The Advisory Committee also recommended that CDC change their guidelines so that actions previously identified for a BLL of 10µg/dL or greater go into effect at the new action level of 5µg/dL.

Well Child Exams—Western U.P. Children Enrolled in Medicaid

Upper Peninsula Health Plan (UPHP) is the Medicaid health care benefit administrator for the entire Upper Peninsula. The data in the following two tables were supplied by UPHP based on their Healthcare Effectiveness Data and Information Set (HEDIS) 2012 quality review cycle. HEDIS is a tool used by more than 90 percent of America's plans to measure performance on important dimensions of care and service. It consists of 75 measures across 8 domains of care that address important health issues.

The following two measures show the extent to which young Western U.P. children who were continuously enrolled in Medicaid received well child exams at the recommended frequency. These well child exams must include the capture of a health and developmental history (physical and mental), a physical exam, and health education with anticipatory guidance. Considering the Western U.P. region in aggregate, Medicaid children who turn 15 months old in 2011 received well child exams at a rate that was 17 percent less than the U.P. overall. Among the three to six year age group, the Western U.P. rate of 66.6 percent nearly matched the overall U.P. rate of 68.5 percent. Rates for individual counties are presented in the yellow column in each table.

% of children continuously enrolled in UPHP Medicaid who turned 15 months old in 2011 and received 6 well care visits by their 15th month of life.

	Received **2011 Exams	By County **2011 Denominator	By County 2011 % Received	Aggregate W-UP HEDIS 2012	***UPHP UP Region-wide HEDIS 2012 Results:
Baraga County	15	23	65.2%		
Gogebic County	27	45	60.0%		
Houghton County	67	132	50.8%	54.5%	72.35%
Keweenaw County	5	*6	83.3%		
Ontonagon County	6	14	42.9%		

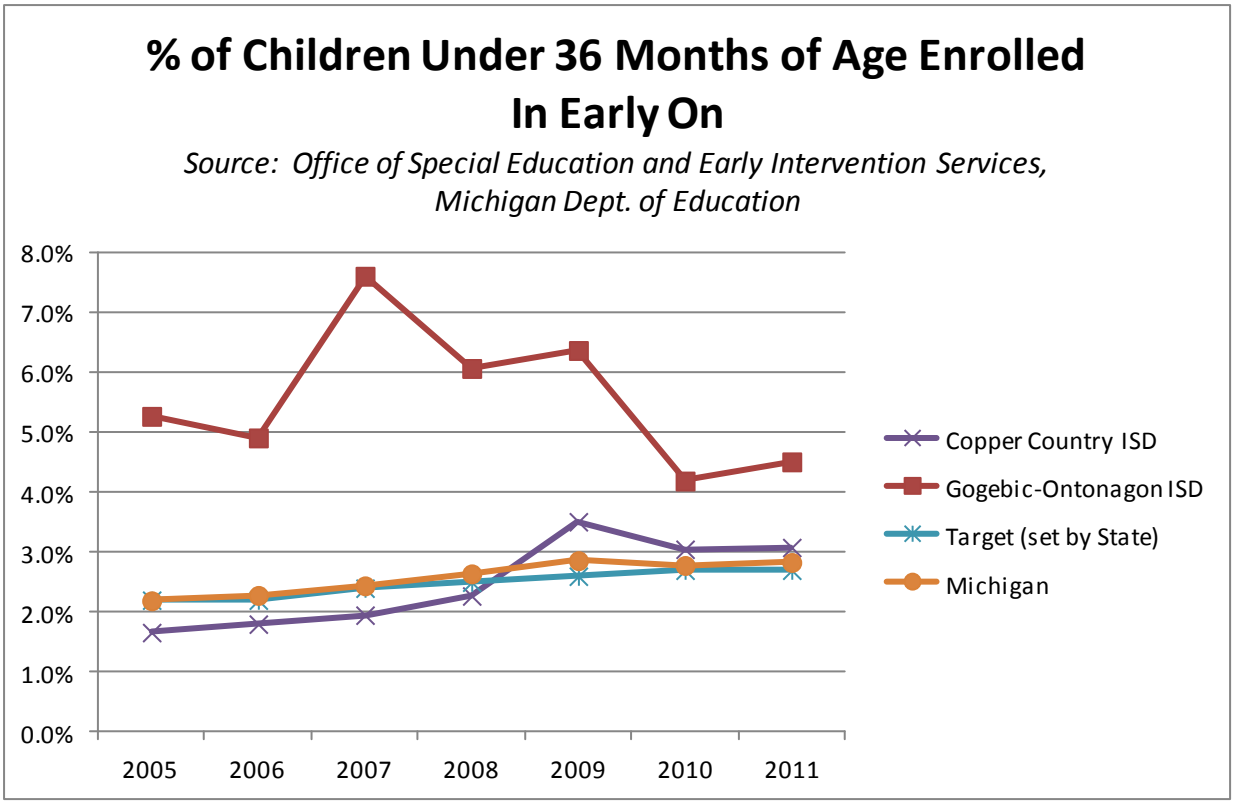
% of children continuously enrolled in UPHP Medicaid ages 3, 4, 5, and 6 years who received an annual well child exam in 2011.

	Received **2011 Exams	By County **2011 Denominator	By County 2011 % Received	Aggregate W-UP HEDIS 2012	***UPHP UP Region-wide HEDIS 2012 Results:
Baraga County	49	88	55.7%		
Gogebic County	148	196	75.5%		
Houghton County	341	510	66.9%	66.6%	68.47%
Keweenaw	19	*26	73.1%		
Ontonagon	37	72	51.4%		

*Rates based on small denominator numbers (under 30) must be viewed with caution.
**Data supplied by UPHP based on their HEDIS 2012 quality review cycle which equates to care from year 2011 (or earlier as measure specifications require.)
*** Select UPHP final rates based on both claims and medical record review data

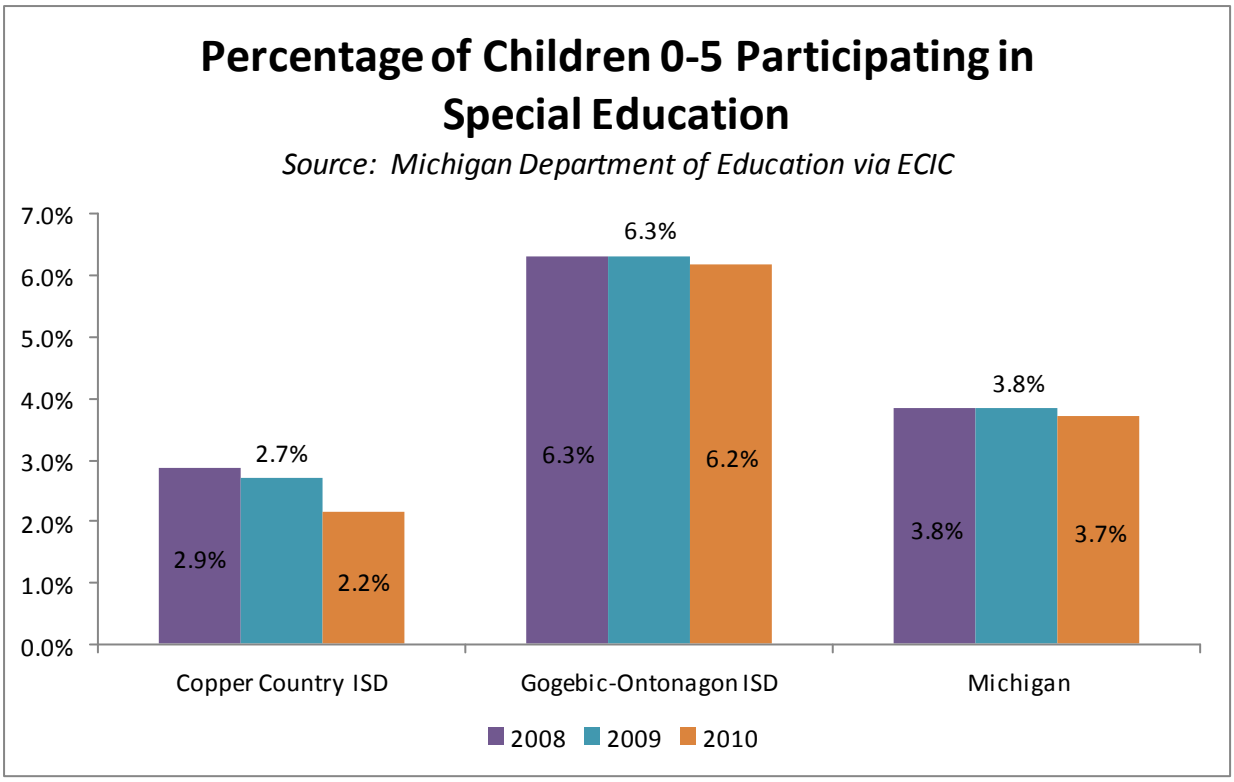
Early On Enrollments

Early On® Michigan is the system of developmental screening and early intervention services for infants and toddlers, birth to three years of age, with developmental delays and/or disabilities. The Michigan Department of Education tracks enrollments in this program and is the source of the statistics shown in the next graph. Across the state, Early On® enrollments have been trending slightly upward since 2005. Enrollments within the Copper Country Intermediate School District, which serves Baraga, Houghton, and Keweenaw counties, have stayed within one percent of the state rate year to year. Nearly eight percent of children under 36 months of age in the Gogebic-Ontonagon Intermediate School District were enrolled in Early On® in 2007. That rate has since declined to 4.5 percent in 2011.



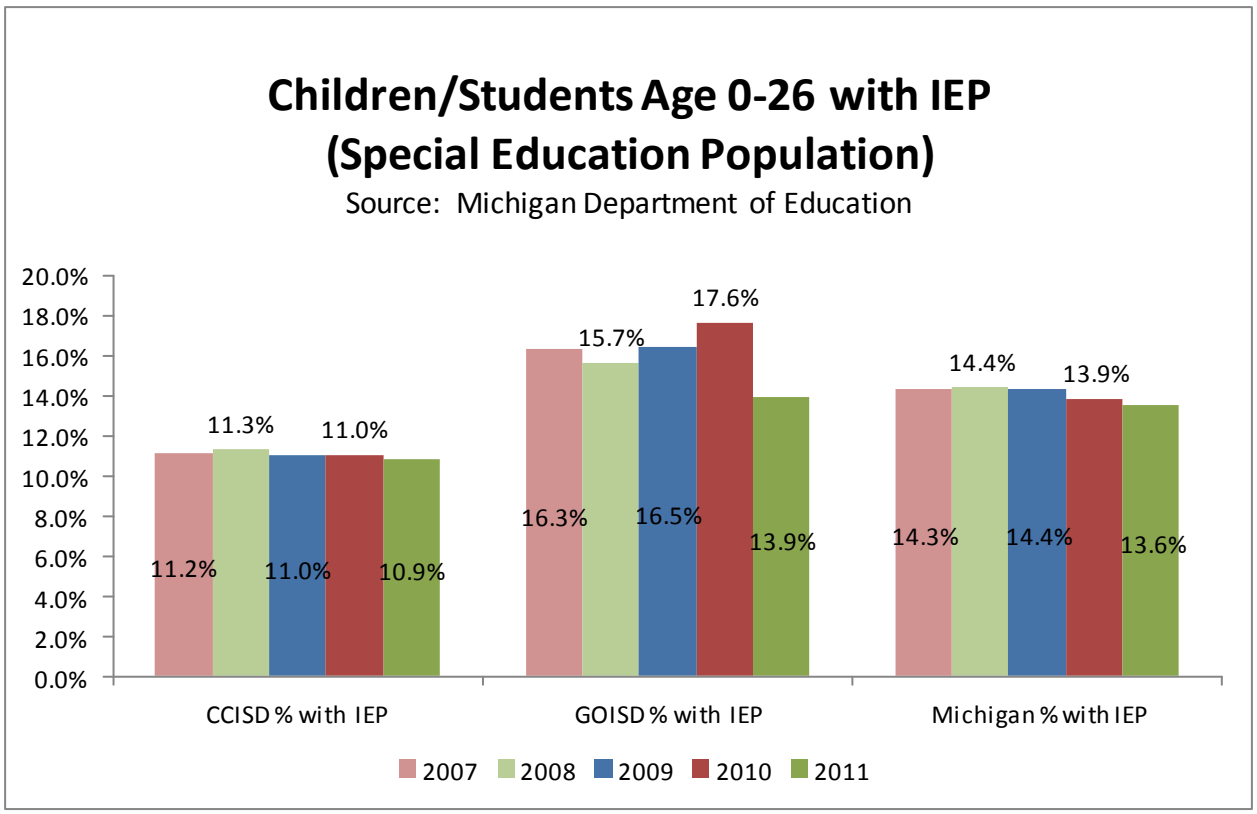
Children Enrolled in Special Education

The data in the graph below reflect three-year trends in the percentage of children under age five participating in special education programs. Within each intermediate school district, participation rates were fairly constant from 2008 through 2010. Participation within the Copper Country Intermediate School District, which serves Baraga, Houghton, and Keweenaw counties, was 2.2 percent in 2010 compared to the state rate of 3.7 percent. The special education participation rate among children under age five in the Gogebic-Ontonagon Intermediate School District was 6.2 percent in 2010.

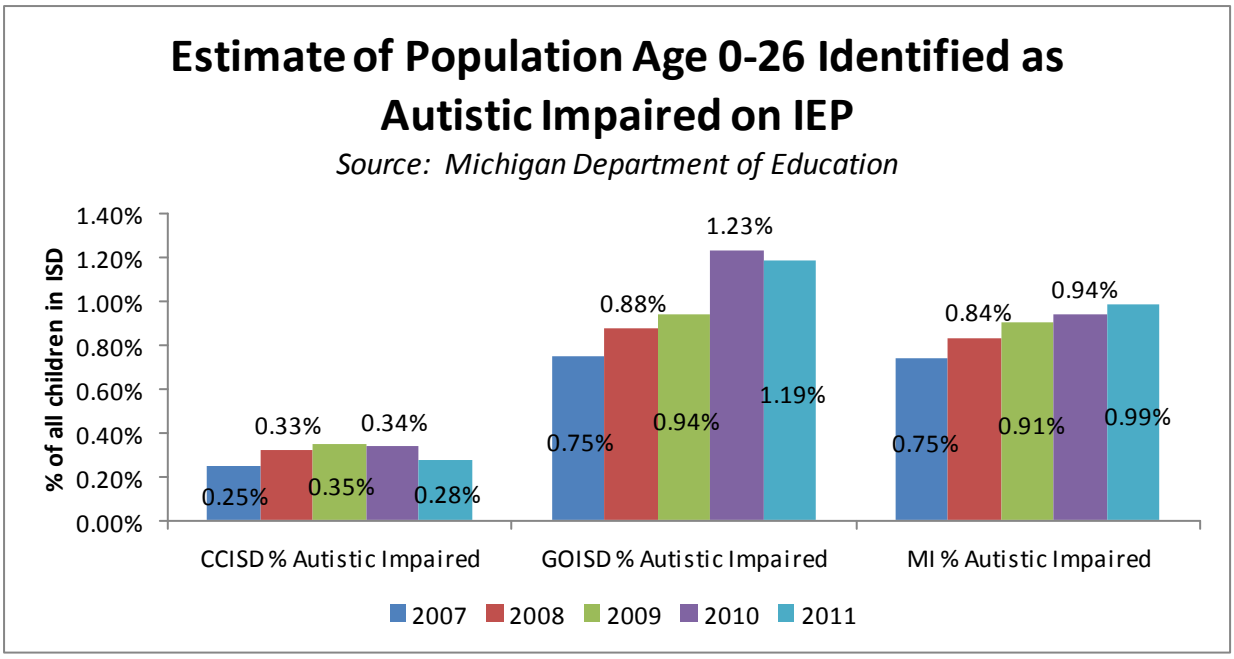


Michigan requires schools to educate students in some disability categories from birth to age 26, compared to birth through age 21 as required by federal law. In the graphs on the next page, participation rates for this age group rates are summarized by intermediate school district and compared to Michigan.

An "Individualized Education Program", or IEP, means a written plan for a student with a disability that spells out the special education and related services the student will receive. The graph below shows the rate at which students enrolled in regional intermediate school districts have had individualized educational programs written for them. For the past five years, approximately 11 percent of Copper Country Intermediate School Districts have been issues IEPs, compared to a fairly constant 14 percent state rate. Gogebic-Ontonagon Intermediate School District's rate has been as high as 17.6 percent in 2010 and as low as 13.9 percent in 2011.

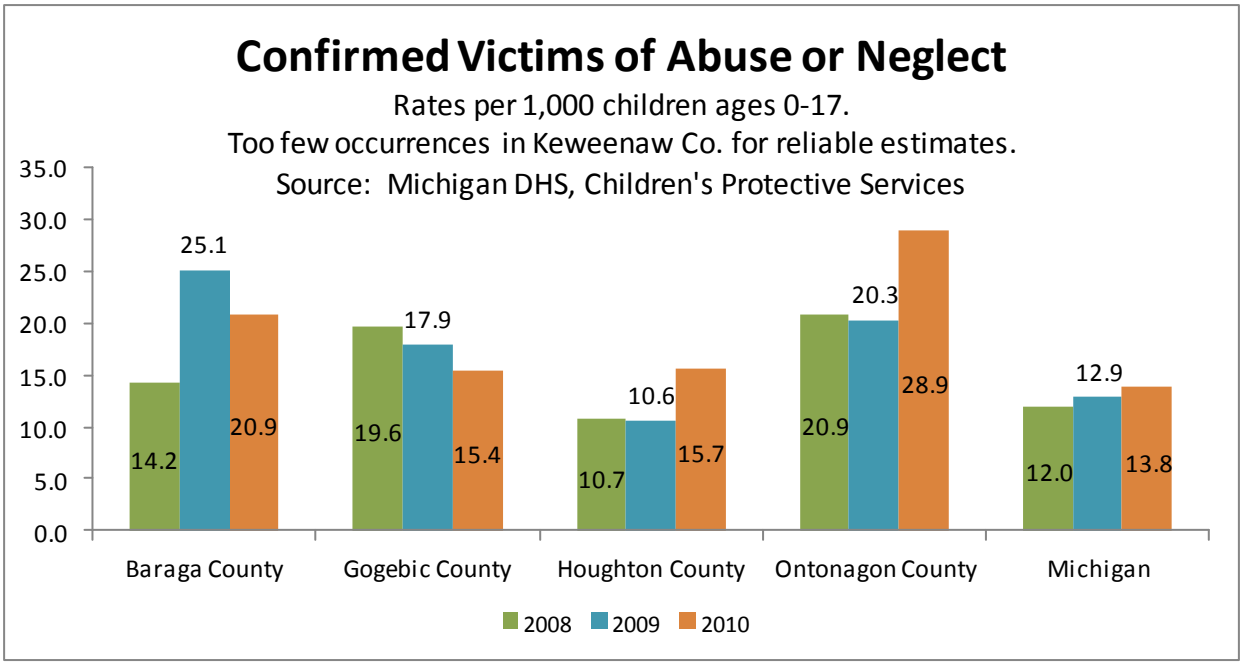


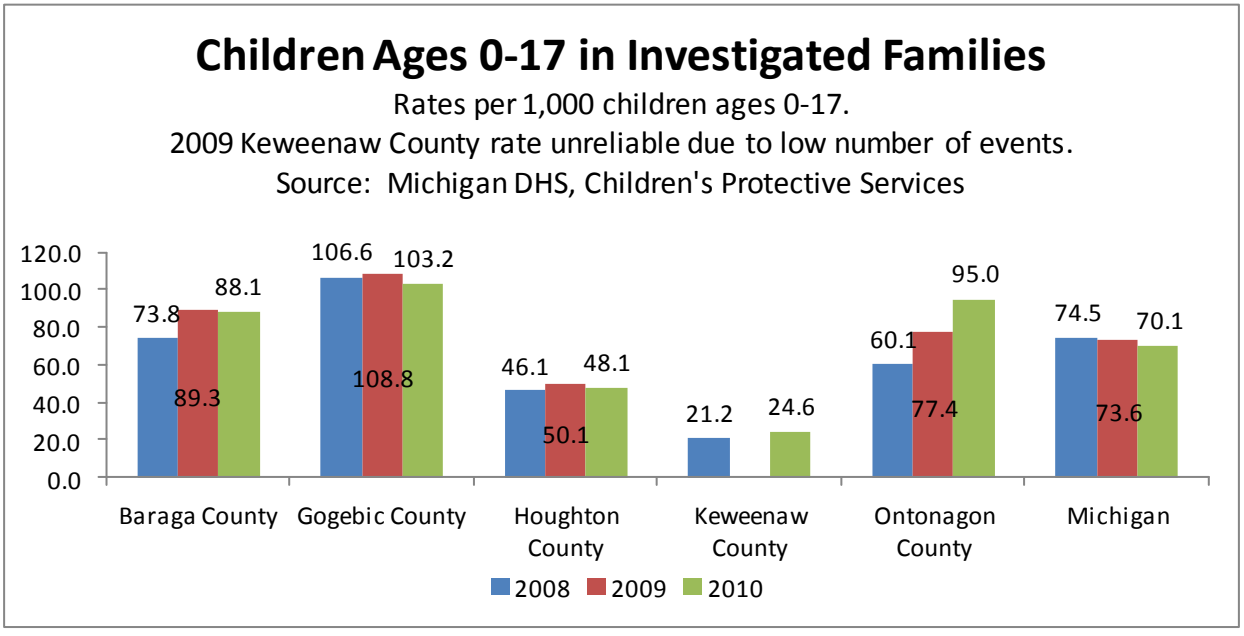
The percentages in the next graph were calculated as the number of students within the intermediate school district (ISD) having Autistic Impaired indicated on their IEP divided by entire ISD population. In 2011, 31 students between the ages of 0 and 26 in Gogebic-Ontonagon ISD were identified as autistic impaired, compared to 19 in Copper Country ISD despite the fact that Copper Country ISD enrolls over twice the number of students. One contributing factor to this difference may be that the autism screening protocols used by two ISDs are not the same. It is important to note that the rates shown below are not describing autism diagnoses made by a medical professional. Diagnosing autism spectrum disorders (ASDs) can be difficult, since there is no medical test, like a blood test, to diagnose the disorders. Physicians and mental health care professionals look at the child's behavior and development to make a diagnosis.



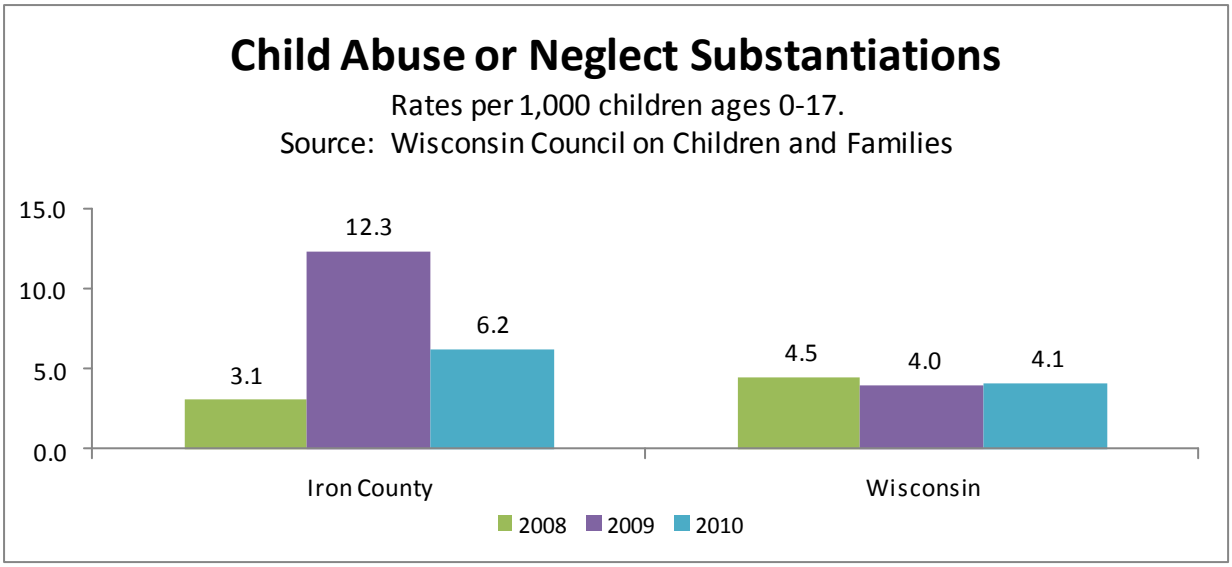
Child Abuse and Neglect

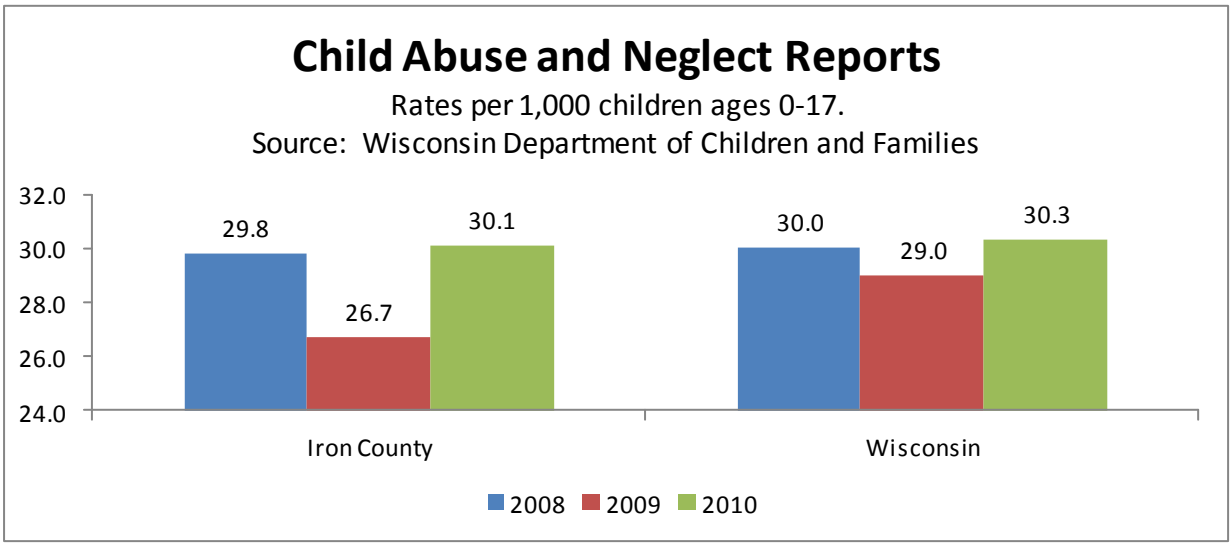
The final graphs in this section show three year trends in cases of child abuse or neglect in the Western U.P. region. The first graph below depicts the rate at which children were the confirmed victims of abuse or neglect after an investigation. In each of the years 2008, 2009, and 2010, rates in Baraga, Gogebic, and Ontonagon counties exceeded the state rate. Houghton County rates were lower than the state's and surrounding counties' in 2008 and 2009, but increased in 2010 to surpass the state. Rates for Keweenaw County are not provided because the extremely small caseloads in that county, combined with population size estimate errors, make for unreliable abuse rate estimates. The second graph shows the rate at which children were members of families investigated for abuse or neglect.





Different laws in Wisconsin prevent a direct comparison of child abuse and neglect rates between Michigan and Wisconsin counties. In the graph below, Iron County child abuse and neglect substantiation rates are compared to Wisconsin rates for each of the years 2008, 2009 and 2010. Data represent the rate of child abuse and/or neglect substantiations per 1,000 children ages 0-17. Substantiated cases refer only to cases in which Child Protective Services staff determines, based upon a preponderance of the evidence that child maltreatment has occurred. A preponderance of evidence is a lower standard of evidence than that needed for proof in court procedures. While Wisconsin's overall rate is fairly constant at 4 children per 1,000 being substantiated victims of abuse or neglect, Iron County's rate has been quite variable. This variability is due in part to the small population of the county. With slightly less than 1,000 children ages 0 to 17 living in the county, each substantiated case affects the rate by one. Thus in 2009 approximately twelve cases were substantiated, compared to 6 in 2010. The second graph shows the rate of child abuse or neglect reports per 1,000 children ages 0-17. One report can involve multiple children.





Adolescent Health Chapter Introduction

During the transition from childhood to adulthood, adolescents establish patterns of behavior and make lifestyle choices that affect both their current and future health. Serious health and safety issues such as motor vehicle crashes, violence, substance use, and risky sexual behaviors can adversely affect adolescents and young adults. Some adolescents also struggle to adopt positive behaviors that could decrease their risk of developing chronic diseases in adulthood, such as eating nutritiously, engaging in physical activity, and choosing not to use tobacco. Environmental factors such as family, peer group, school, and community characteristics also contribute to adolescents' health and risk behaviors.

Results from the Centers for Disease Control and Prevention (CDC) 2011 Youth Behavioral Risk Factor Survey (YBRS), a survey of students in grades 9-12 in all 50 states, indicated that many high school students engaged in health-risk behaviors associated with the leading causes of death among persons aged 10–24 years in the United States. During the 30 days before the survey, 32.8 percent of high school students nationwide had texted or e-mailed while driving, 38.7 percent had consumed alcohol, and 23.1% had used marijuana. During the 12 months before the survey, 32.8 percent of students had been in a physical fight, 20.1 percent had ever been bullied on school property, and 7.8 percent had attempted suicide. Many high school students nationwide are engaged in sexual high risk behaviors associated with unintended pregnancies and STDs, including HIV infection. Nearly half (47.4 percent) of students had ever had sexual intercourse, 33.7 percent had had sexual intercourse during the 3 months before the survey (i.e., currently sexually active), and 15.3 percent had had already had sexual intercourse with four or more people during their life. Among currently sexually active students, only 60.2 percent reported using a condom during their last sexual intercourse.

Results from the 2011 national YRBS also indicate many high school students are engaged in behaviors associated with the leading causes of death among adults aged 25 years and older in the United States. During the 30 days before the survey, 18.1 percent of high school students had smoked cigarettes and 7.7% had used smokeless tobacco. During the 7 days before the survey, 4.8 percent of high school students had not eaten fruit or consumed 100-percent fruit juices and 5.7 percent had not eaten vegetables. Nearly one-third (31.1 percent) had played video or computer games for 3 or more hours on an average school day, limiting time available for physical activity.

On the following pages are local and state data that are not directly comparable, but all provide important information regarding local adolescent health status and risk factors. The state data are from the YBRS of students grades 9-12. The county-level data are from the Michigan Department of Education's Michigan Profile for Healthy Youth (MIPHY) survey of students in grades 7, 9 and 11. For many health-risk behaviors, such as early sexual activity and use of alcohol, tobacco and other drugs, the lifetime or past-30-day prevalence increased significantly with age. For instance, self-reported past-30-day use of alcohol per county, given in order for 7th, 9th and 11th graders respectively, increased as follows: Baraga County, 4.7% among 7th graders, 25.9% in 9th grade, and 40.8% in 11th grade; Gogebic County, 0.9%, 18.5%, 37.4%; Houghton County 1.5%, 6.5%, 17.0%; Ontonagon County, 7.0%, 27.8%, 33.3%. Clearly, in order to be most effective, prevention efforts must begin early, before the marked rise in risk-taking behavior that occurs between 7th and 9th grade. These patterns generally held true for tobacco and drug use as well. As for sexual activity, about 40 percent of Houghton County students re-

ported they had had sexual intercourse by grade 11, as did more than 50 percent in Baraga, Gogebic and Ontonagon counties. Condom use was reported by just half to two-thirds of sexually active youth.

Obesity among youth, and its associated poor nutrition and sedentary behavior, raises the lifetime risk of chronic disease and disability. While rates vary by age and county, it appears that some 15-20 percent of local teens are obese, and another 15-20 percent are overweight. These rates are similar to the current national adolescent obesity rates that have roughly tripled over the past 30 years. In other words, many more of today's youth are overweight or obese than were their parents' generation when they were teens. This has dire implications for future prevalence of heart disease, certain cancers, diabetes and disabilities.

Local Focus

- Among Western U.P. adolescents, reported health-risk behaviors such as use of tobacco and alcohol, and unprotected sex, increase markedly from 7th to 11th grade.
- About 30-40 percent of local adolescents are overweight or obese, a strong predictor of adult obesity and elevated lifetime risk for heart disease, diabetes and certain cancers.
- Only 39.7 percent of Western U.P. teens enrolled in Medicaid received an annual physical (well-child exam) in 2011, compared with 50.7 percent UP-wide. In Ontonagon County, this number drops to less than 25 percent. Paralleling this finding, local survey results note that Ontonagon adults also had the lowest rate of receiving an annual physical.

Potential Future Implications

- Experimentation with alcohol, tobacco and other drugs as well as sex begins in early adolescence for many local children and increases through the high school years. Without successful prevention efforts, this can lead to a variety of poor outcomes including teen pregnancy, motor vehicle accidents, sexually transmitted disease, low educational attainment and chronic disease secondary to on-going tobacco or alcohol use.
- Local teen obesity data are consistent with state and national trends, with dire implications about future rates of chronic disease. Public health officials predict that between one-third and half of children born in the year 2000 will develop Type 2 diabetes in their lifetimes. Increased physical activity and consumption of fruits and vegetables, and reduced consumption of sugary drinks and decreased time watching television or sitting at computers, are among recommendations for improved teen health.
- The fact that less than half of local adolescents access routine annual well child care means there are many lost opportunities to identify and remediate health and developmental concerns, and to focus on prevention through immunization review and anticipatory guidance in the areas of nutrition, exercise, reproductive health, tobacco and other substance use and general safety concerns.

Adolescents and Teens

Michigan Profile for Healthy Youth (MiPHY)

The Michigan Profile for Healthy Youth (MiPHY) is an online student health survey offered by the Michigan Departments of Education and Community Health to support local and regional needs assessment. The MiPHY provides student results on health risk behaviors including substance use, violence, physical activity, nutrition, sexual behavior, and emotional health in grades 7, 9, and 11. The survey also measures risk and protective factors most predictive of alcohol, tobacco, and other drug use and violence. Student privacy is maintained through confidential, anonymous, and voluntary participation.

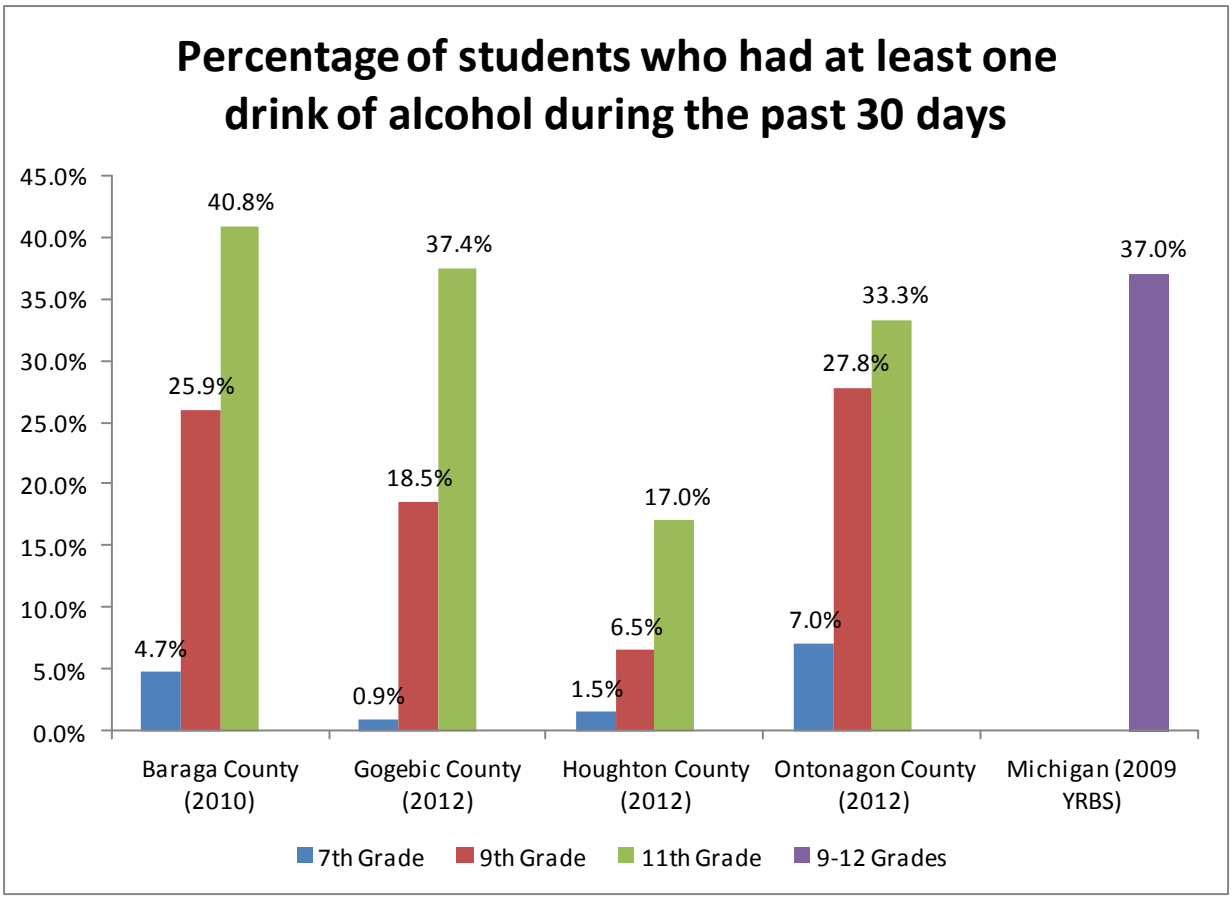
A minimum of at least two districts and at least two building types (middle school or high school) must participate for a county/regional report to be generated. In 2012 Baraga County participation rates did not meet this standard, therefore 2010 results are reported for that county in the graphs that follow. No reports exist for Keweenaw County because no high school is located in that county. The majority of Keweenaw County teens attend Calumet High School in Houghton County.

The Michigan Youth Risk Behavior Survey (YRBS) is administered to a random sample of youth from all grades 9-12. This means that the state estimates shown on the following graphs are calculated from a sample that includes students who are older than those who responded to the local survey. This may skew the Michigan results toward a higher prevalence of risk behaviors, since participation in risk behaviors typically increases with age.

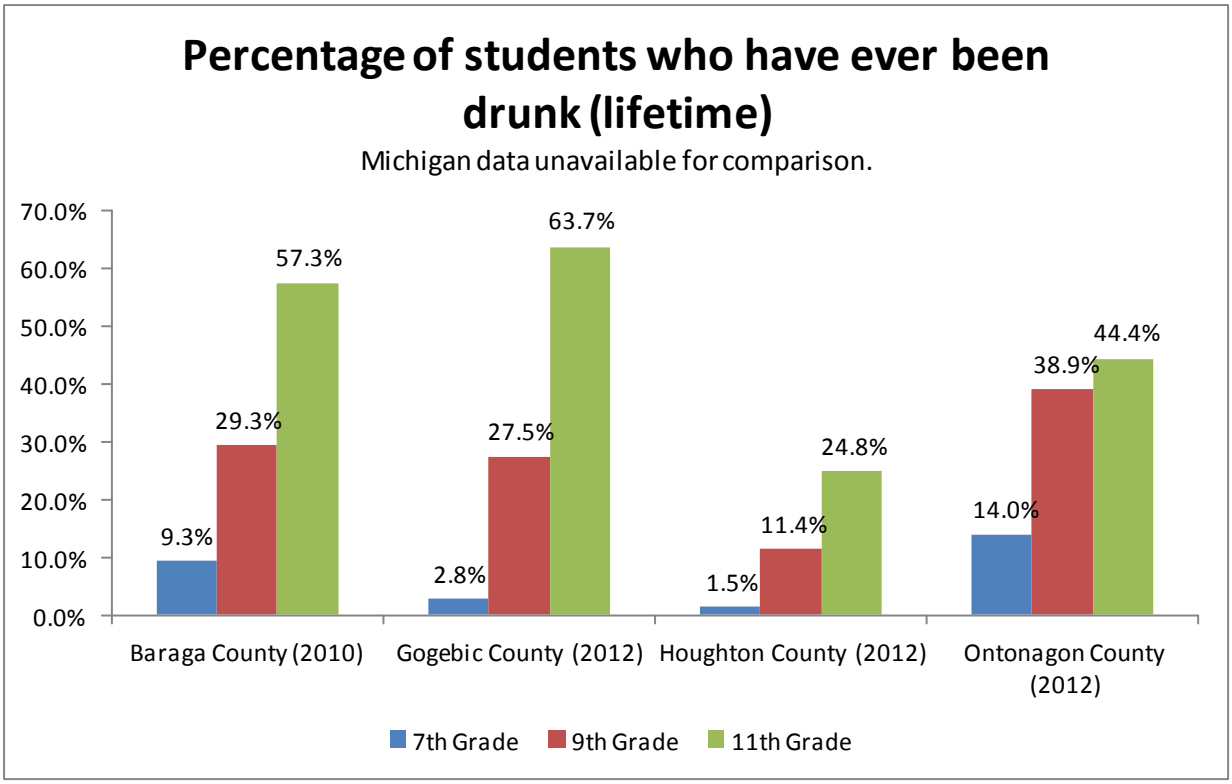
The next 25 graphs summarize the most recent MiPHY survey results available for Western U.P. counties. For most graphs, local results are given for the grades 7, 9, and 11 surveys. These are the results for that grade level in the year listed. They do not reflect a longitudinal study of a single cohort.

Alcohol and Other Drug Related Indicators (MiPHY Survey Results)

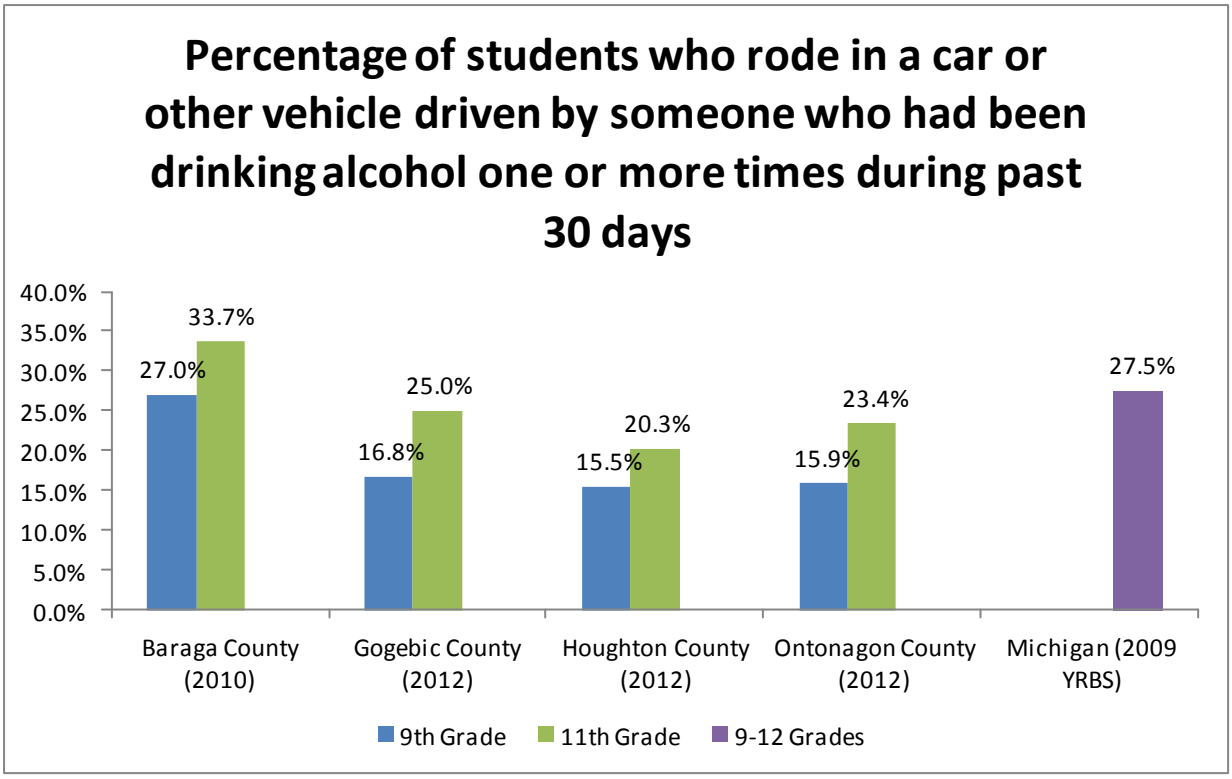
The graph below indicates the percentage of students taking the MiPHY who reported that they had had at least one drink of alcohol during the past 30 days. The data indicate that experimentation with alcohol increases significantly from grade 7 to grade 9. By grade 11, at least one in three students in Baraga, Gogebic and Ontonagon counties had had at least one drink in the past 30 days. The state rate for this measure, which includes students in grade 12, is 37 percent.



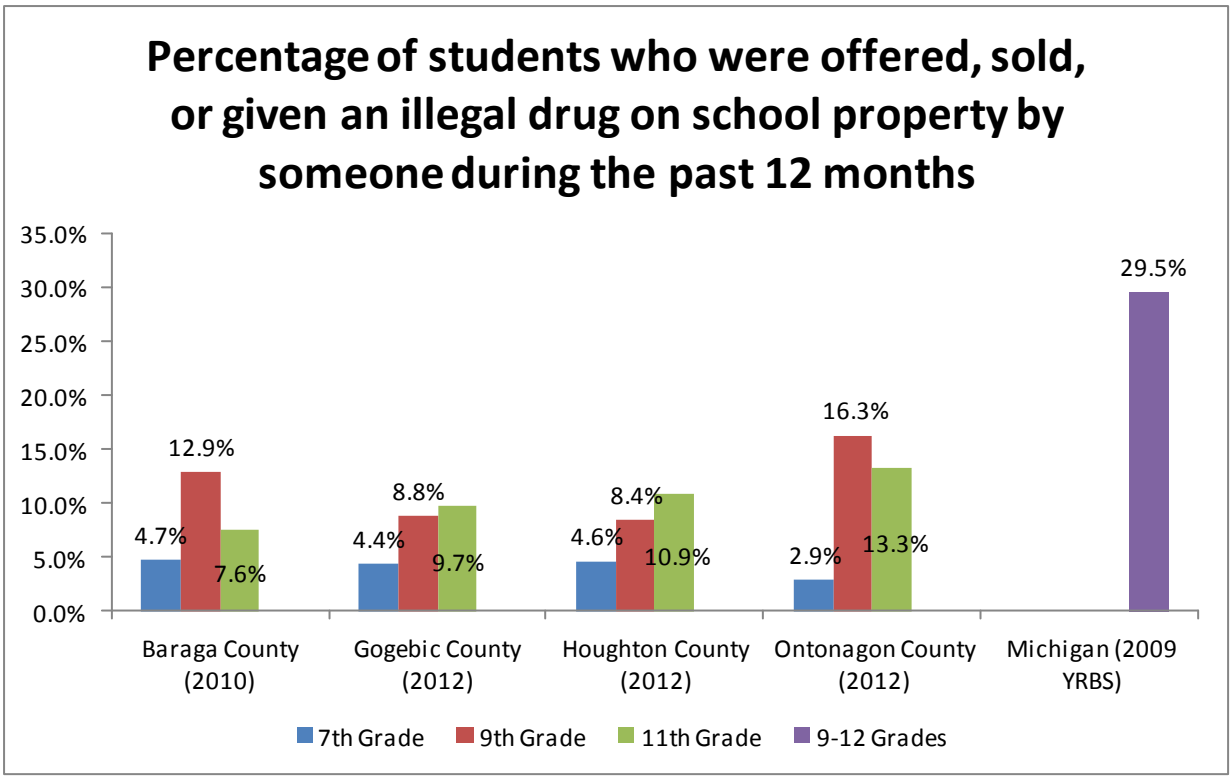
The next graph shows the percentage of students taking the MiPHY who reported that they had ever been drunk. In all counties the results show a steep increase in affirmative responses at higher grade levels. Well over half of grade 11 students in Baraga and Gogebic counties reported having been drunk at least once in their life, compared to 24.8 percent of Houghton County grade 11 students.



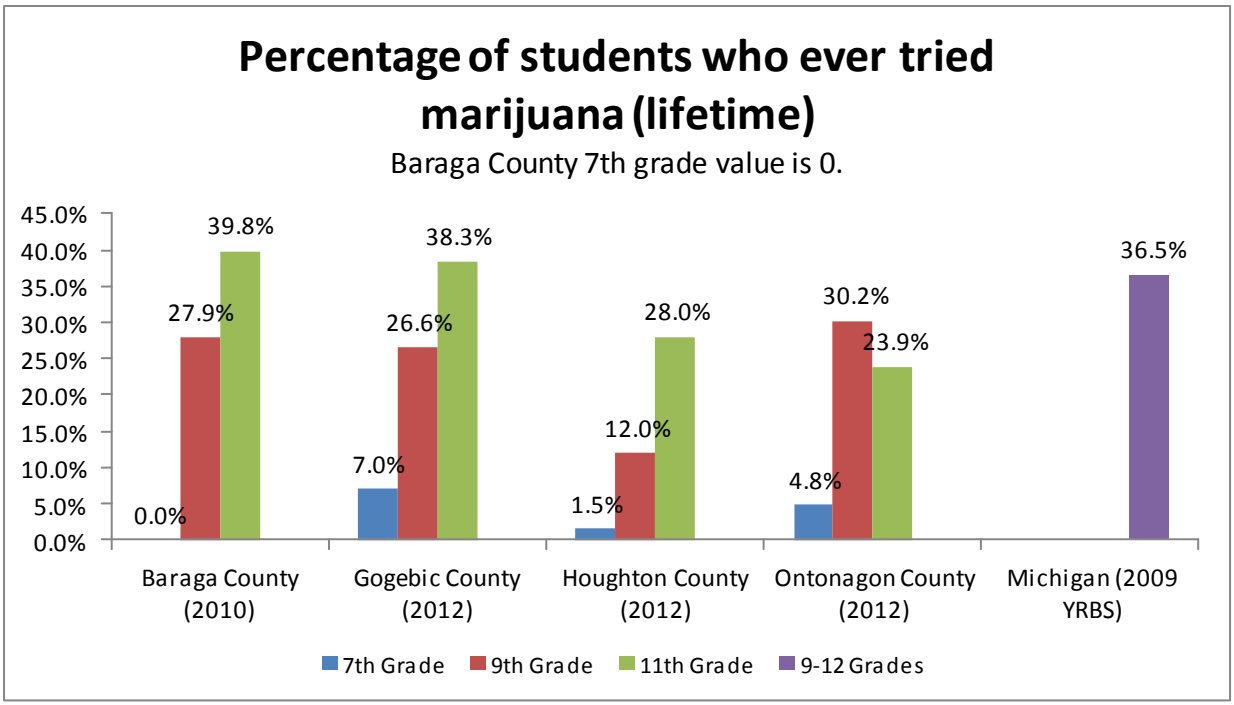
The graph below indicates the percentage of students taking the MiPHY who reported that at least once in the past 30 days they had ridden in a vehicle driven by someone who had been drinking alcohol. This particular question was not posed to grade 7 students. The increase in affirmative responses from grade 9 to grade 11 in all counties may be due in part to more classmates having driver's licenses in grade 11.



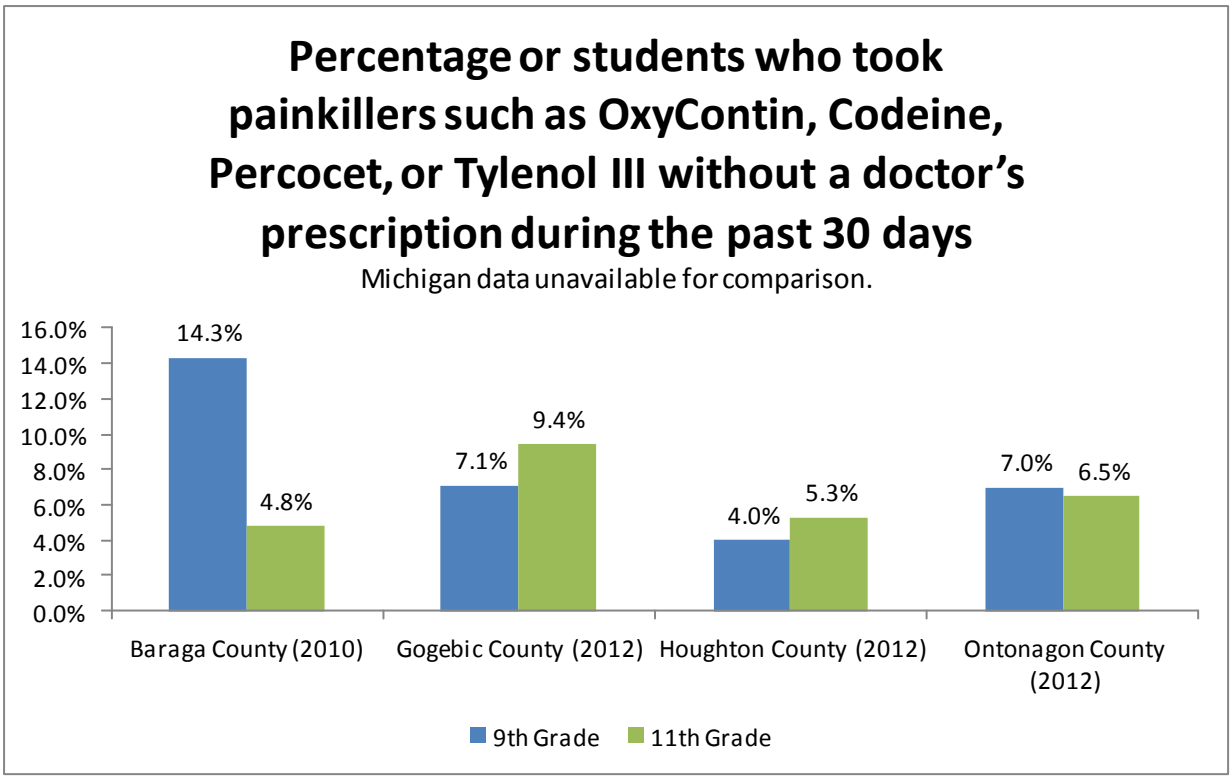
The data in the following graph reflect the percentage of students taking the MiPHY who reported that they were offered, sold, or given an illegal drug on school property in the past year. The data show that students on campuses in the Western U.P. have fewer encounters with persons offering drugs than students in the state overall. Also, high school students are more likely to be offered drugs than middle school students.



The survey results graphed below indicate the percentage of students who reported ever trying marijuana. Rates reported among grade 11 students in Baraga and Gogebic counties exceed the state rate of 36.5 percent. In Houghton County, the rate of marijuana experimentation reported among grade 11 students was 28 percent, and in Ontonagon County 23.9 percent.



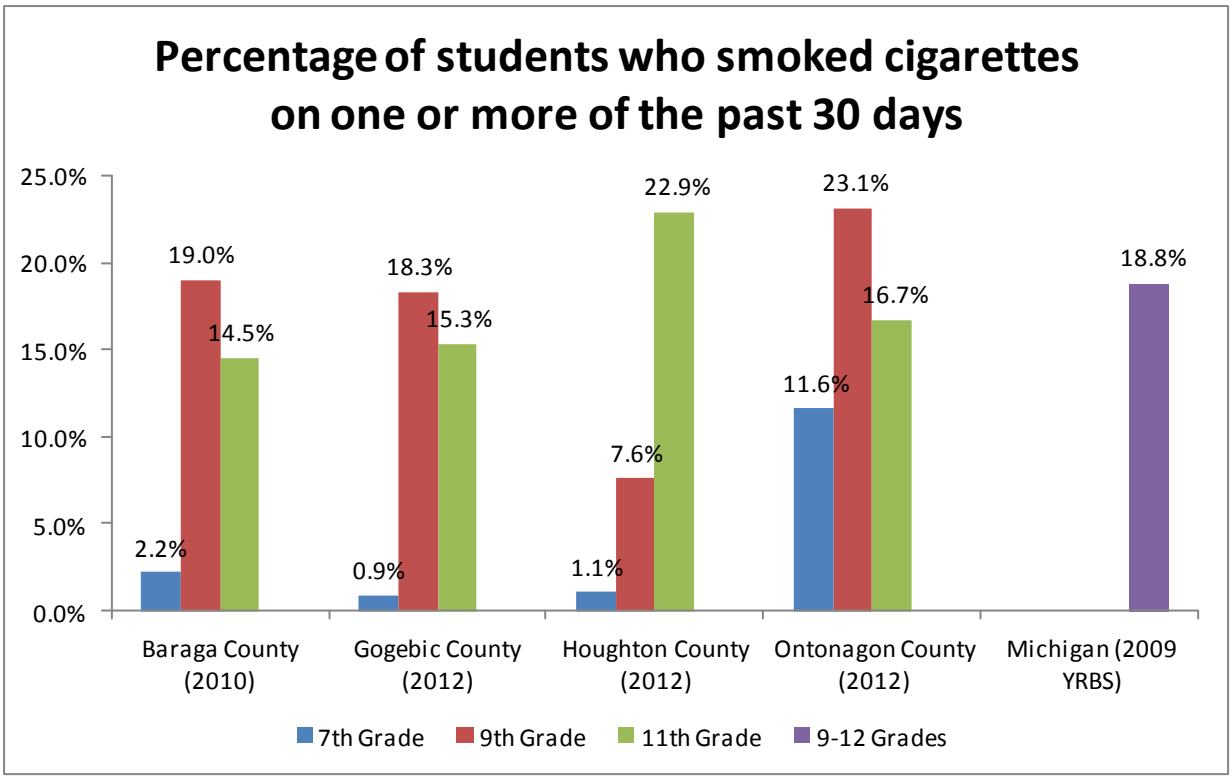
The next graph indicates the percentage of students completing the MiPHY who reported that they had taken painkillers such as OxyContin, Codeine, Percocet, or Tylenol III without a doctor's prescription during the past 30 days. In 2010, an alarming 14.3 percent of Baraga County grade 9 students reported that they had participated in this high risk behavior. If we were to consider an average of grade 9 and grade 11 responses, we would see prevalence highest in Baraga County, followed by Gogebic County and then Ontonagon County. When examining the 2011 percentage of admissions to publicly funded substance abuse treatment programs in which these types of drugs were the primary substance reported, we see a similar pattern across the counties under study. These admissions data, reflecting primarily adults receiving treatment services, are presented in the section of this report titled "Substance Abuse". That data, combined with the MiPHY data presented below, suggest that prescription drug abuse is a growing concern in some portions of the Western U.P.



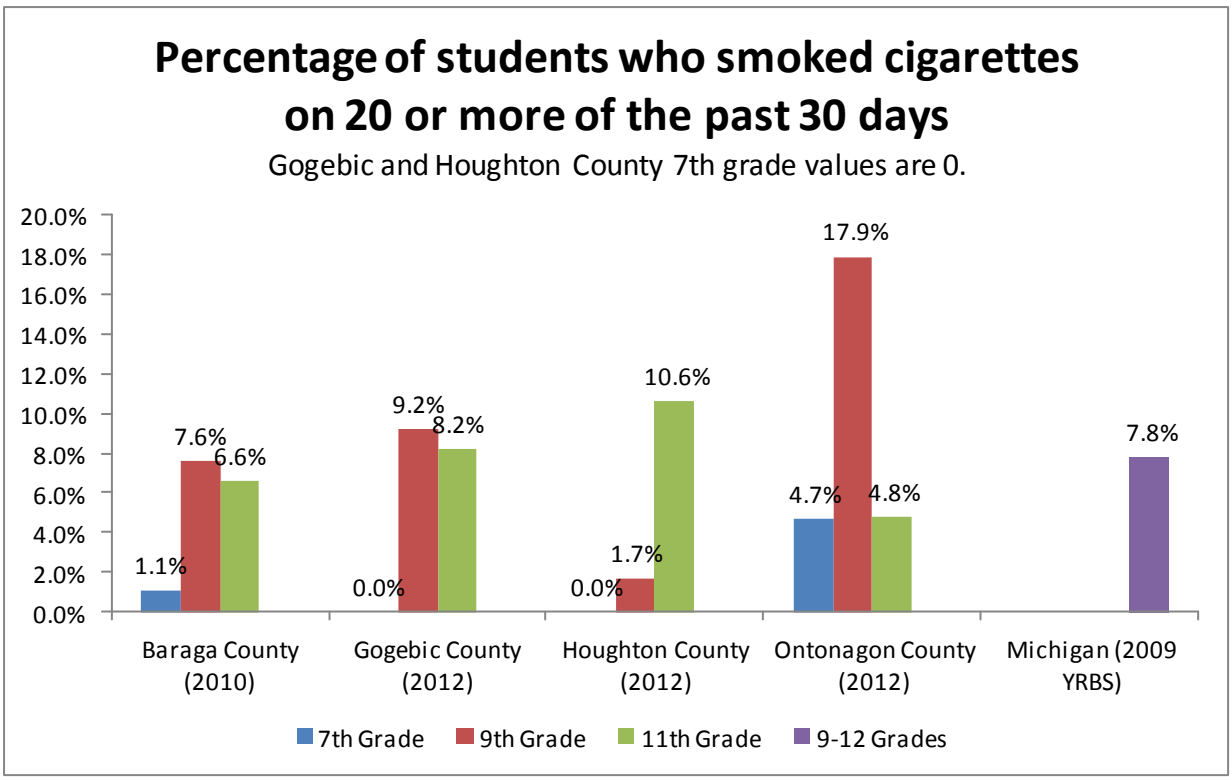
Tobacco Related Indicators (MiPHY Survey Results)

Summarized below are the proportions of students completing the MiPHY who reported smoking cigarettes on one or more of the past 30 days. Across the region tobacco experimentation rates are generally as high or higher than state rates. The significant increase in rates between grades 7 and 9, especially in Baraga and Gogebic counties, suggests an age group toward which to target intervention programs.

With this graph we also see a pattern among Ontonagon County students begin to emerge. The data in the next four graphs suggest that the students who were in grade 9 in 2012 are more likely to use tobacco than students who were in grade 11 that year. This result runs counter to what is generally observed, which is an increase in the number of students using tobacco as students progress through high school.

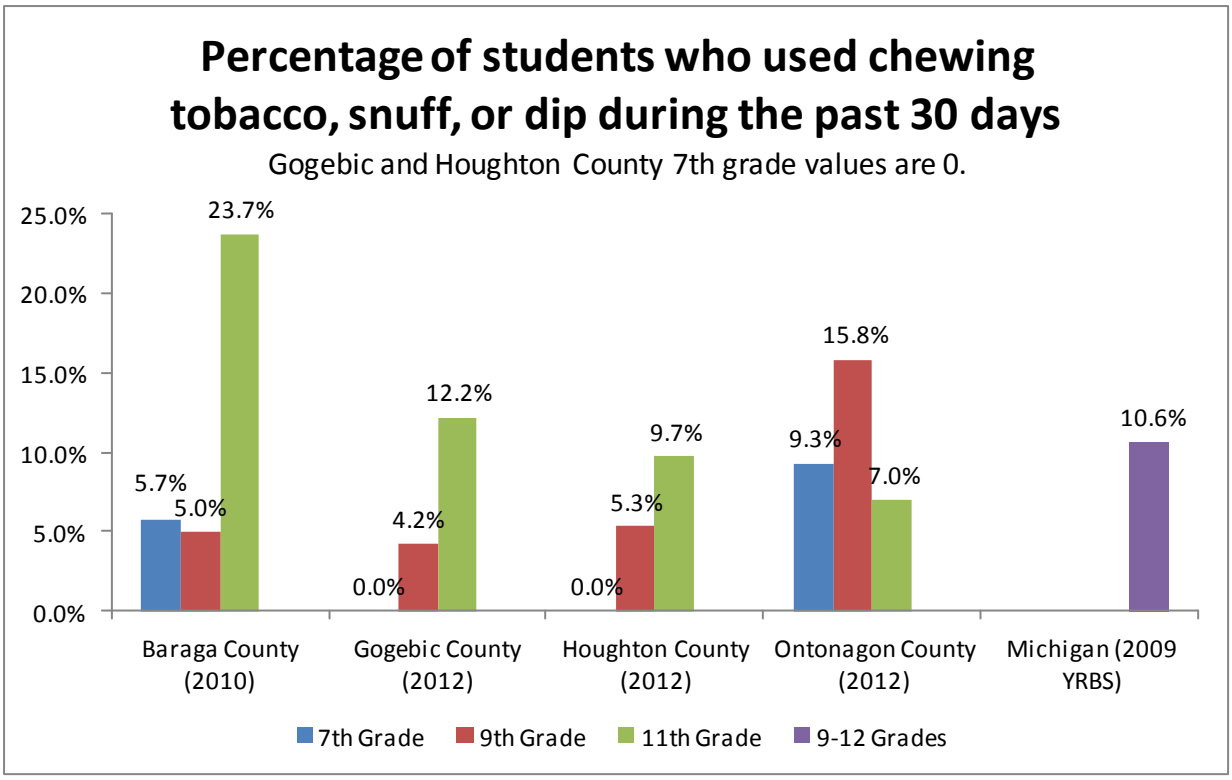


The data in the next graph indicate the prevalence of regular smokers among the middle and high school populations in local schools, those who smoked cigarettes on 20 or more of the past 30 days. What appears to be an extremely high rate of regular smokers among grade 9 students in Ontonagon County is in part due to only 44 Ontonagon students in that grade completing the MiPHY in 2012. That small response pool makes each response capable of causing a change of more than two percent in the prevalence rate. Taking small population effects into account, regional results for this indicator are not too dissimilar from the state rate of roughly 8 percent.



The graph below summarizes the percentage of students completing the MiPHY who reported using smokeless tobacco products during the past 30 days. In Baraga County nearly one in four of the 83 grade 11 students who completed the MiPHY reported participating in this risk behavior in 2010. Second highest participation rates were among Ontonagon County grade 9 students, followed by Gogebic County Grade 11 students. All of these groups reported higher proportions than the state percentage of 10.6 percent of students. Among Michigan adults age 18 and older, 4.4 percent are estimated to be current smokeless tobacco users according to the Michigan Behavioral Risk Factor Survey.

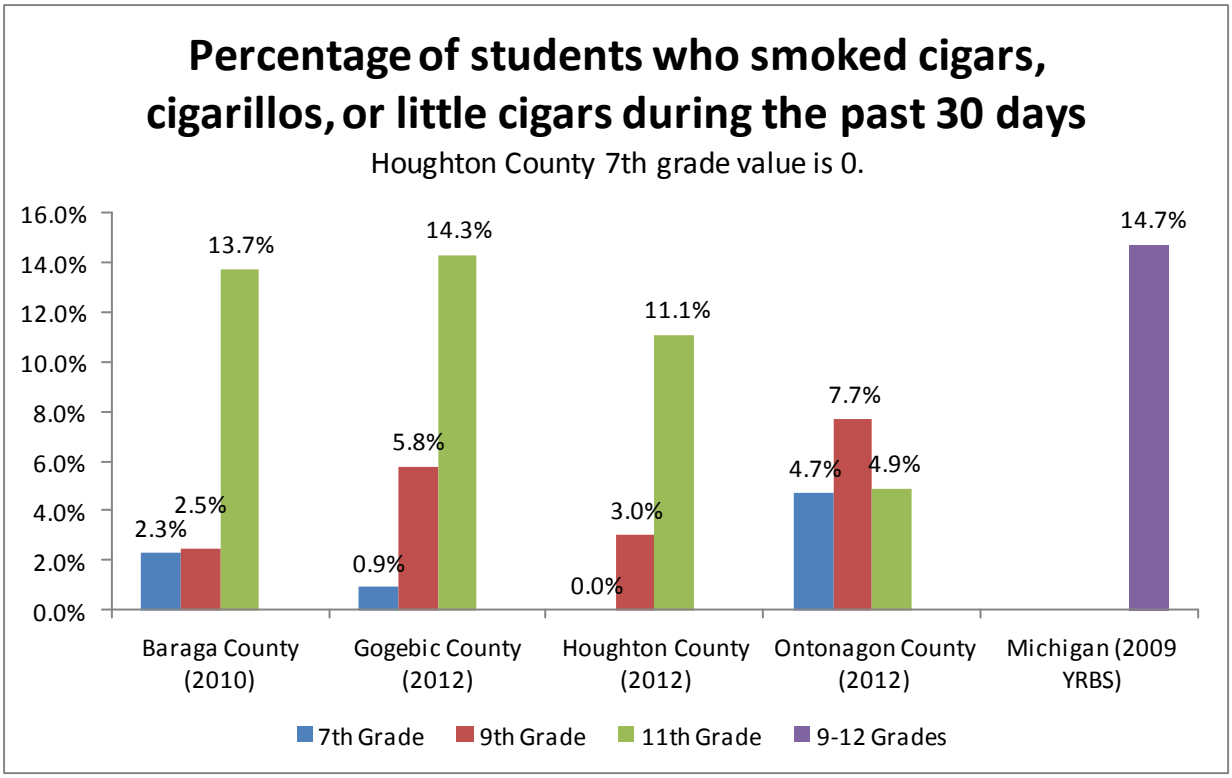
Source:
http://www.michigan.gov/documents/mdch/2011_MiBRFS_EP_Region_Tables_FINAL_394945_7.pdf



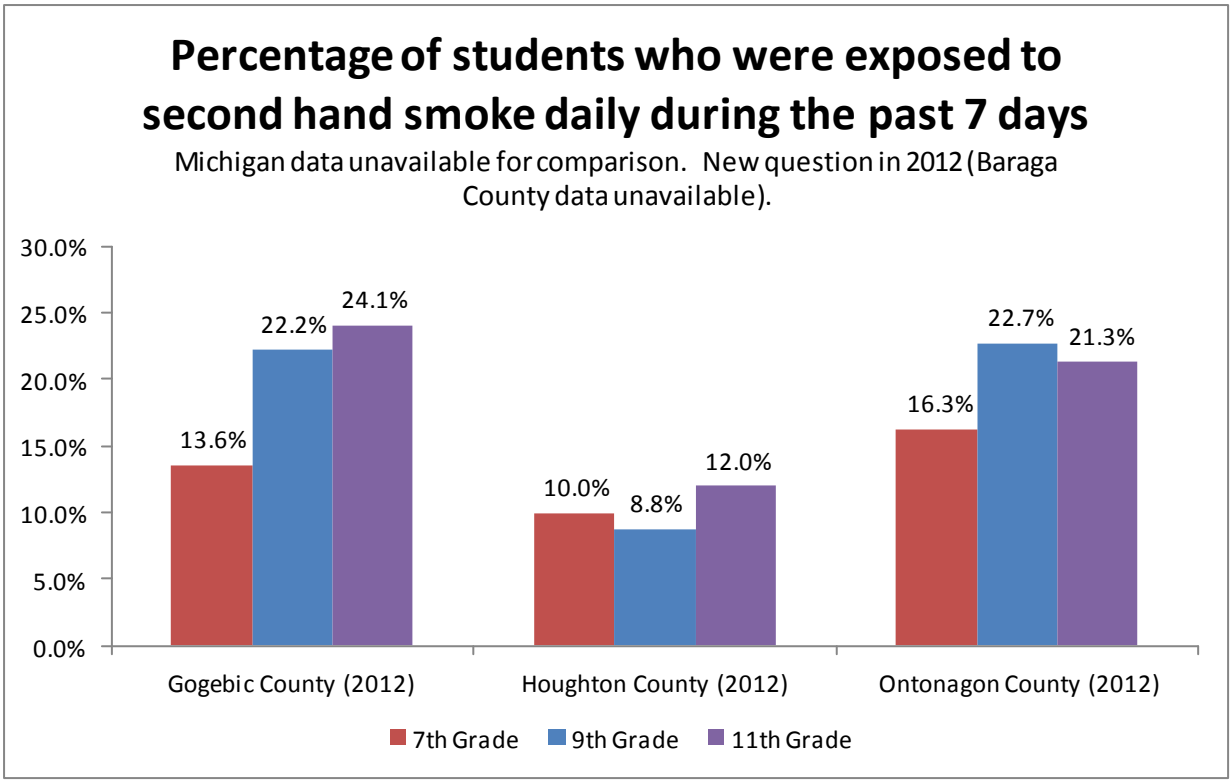
The next graph suggests the popularity of cigars and cigarillos among middle and high school students. Compared to the state rate for students across all high school grades, local students participate in this risk behavior at a slightly lower frequency. Participation is highest among grade 11 students in Baraga and Gogebic counties, followed closely by Houghton County.

According to a 2012 Surgeon General's report, in 2011, cigar use among high school males (15.7 percent) was comparable to cigarette use (17.7 percent). Cigar use includes the use of cigarette-like cigars that can be packaged and smoked like typical cigarettes, but are taxed at a lower rate, making them more appealing and accessible to youth.

Source:
http://www.cdc.gov/media/releases/2012/p0809_youth_tobacco.html

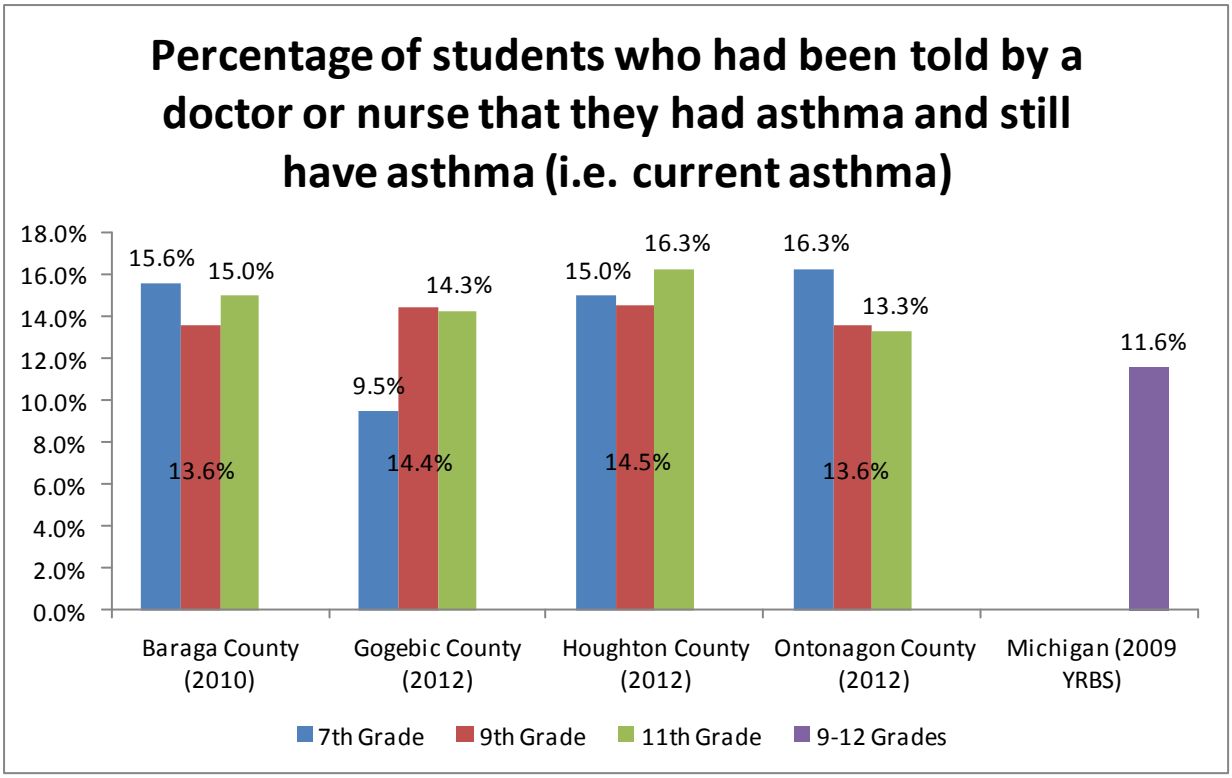


The graph on this page reflects the results of a question first posed during the 2011-12 MiPHY survey cycle, aimed at assessing secondhand smoke exposure among youth. Baraga County and Michigan rates are not available for comparison. Over 20 percent of Gogebic and Ontonagon high school students reported being exposed to secondhand smoke daily during the past seven days. Rates in Houghton County were approximately half that.



Asthma is a chronic condition that affects the lungs, and is the most common long-term disease of childhood. The cause of asthma is not well understood, but asthma attacks can be triggered by particles or conditions that irritate the lungs. Such irritants include tobacco smoke and outdoor air pollution. The data compiled below indicate that Western U.P. youth exhibit a higher prevalence of asthma than Michigan youth overall. Among the Western U.P. counties, rates are highest in Baraga and Houghton counties.

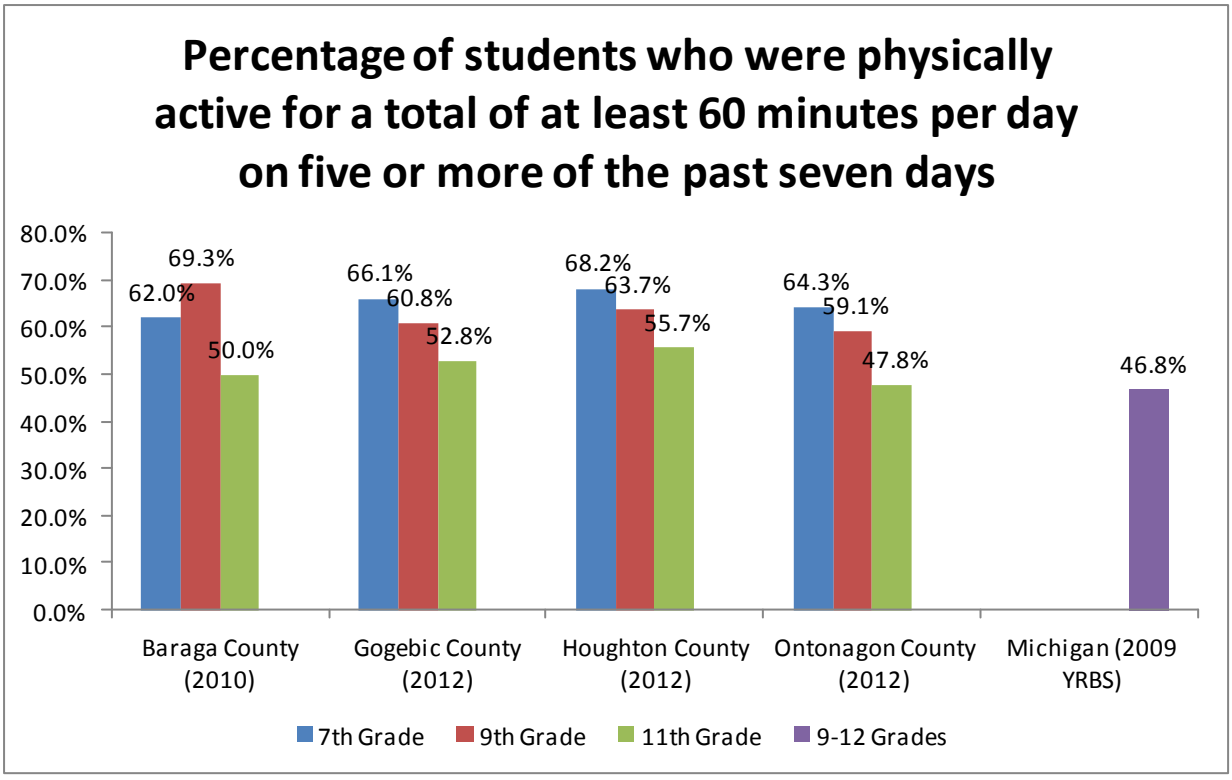
Source:
http://www.cdc.gov/tobacco/campaign/tips/resources/overviews/secondhand-smoke-asthma.html



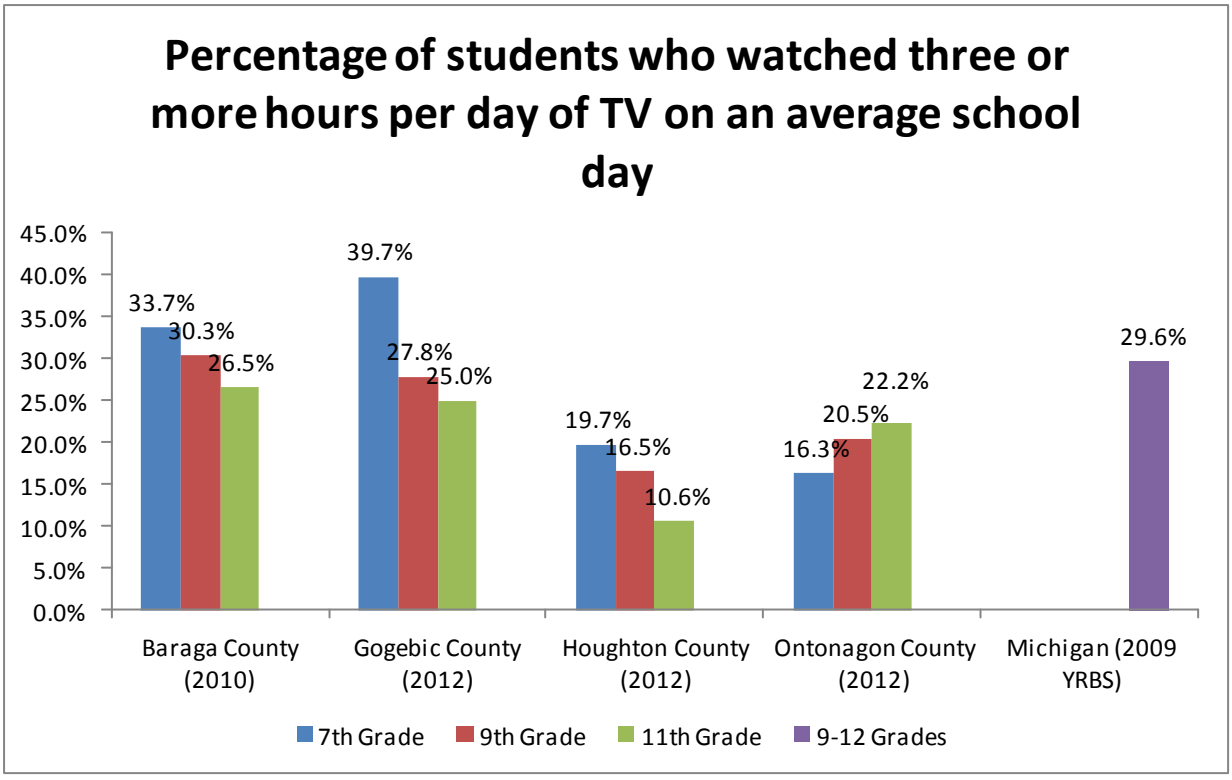
Physical Activity Indicators (MiPHY Survey Results)

The graph below shows the percentage of MiPHY respondents who reported being physically active for a total of at least 60 minutes per day on five or more of the past seven days. Overall, Western U.P. students reported higher activity levels than the state overall. The decline in activity from grade 7 to grade 9 and again from grade 9 to grade 11 is widely observed in national studies. According to the Youth Risk Behavior Surveillance System, in 2011 across the United States, 68 percent of grade 9 students attended physical education classes in an average week. Among grade 12 students, only 38 percent had attended weekly physical education classes. Current Michigan high school graduation requirements list only one required credit (essentially one school year) of physical education and health, typically one semester of each class in grade 9.

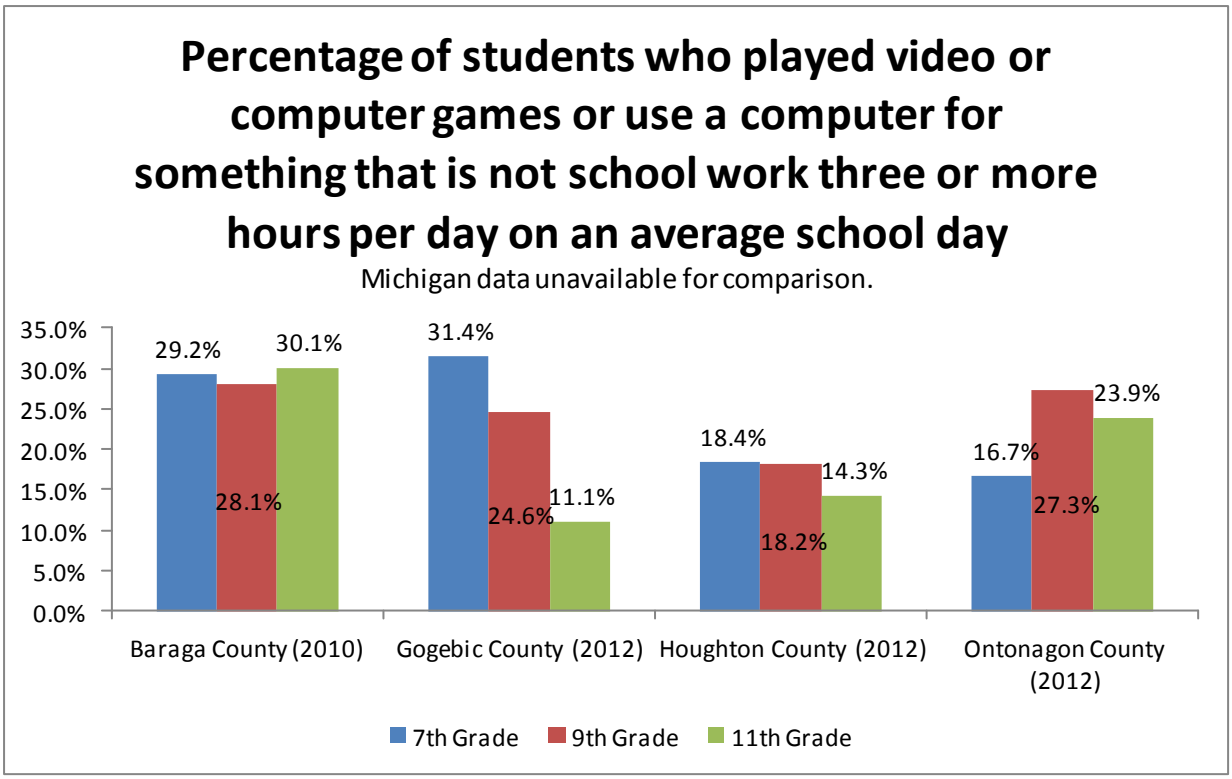
Source:
http://www.cdc.gov/healthyyouth/physicalactivity/facts.htm
http://www.michigan.gov/documents/mde/Parent_12.20.06_181524_7.pdf



The low physical activity levels conveyed in the previous graph are partially explained by the next two. The MiPHY results presented next reflect the percentage of students who watched three or more hours per day of television on an average school day. The data indicate that approximately one in four grade 11 students in Baraga and Gogebic counties watch television for this duration on school days. Rates are even higher among students in grades 7 and 9. In Ontonagon County, extended television viewing by students increases across the grade levels, reaching 22.2 percent in grade 11. Houghton County high school students report watching less television than students in the rest of the region.



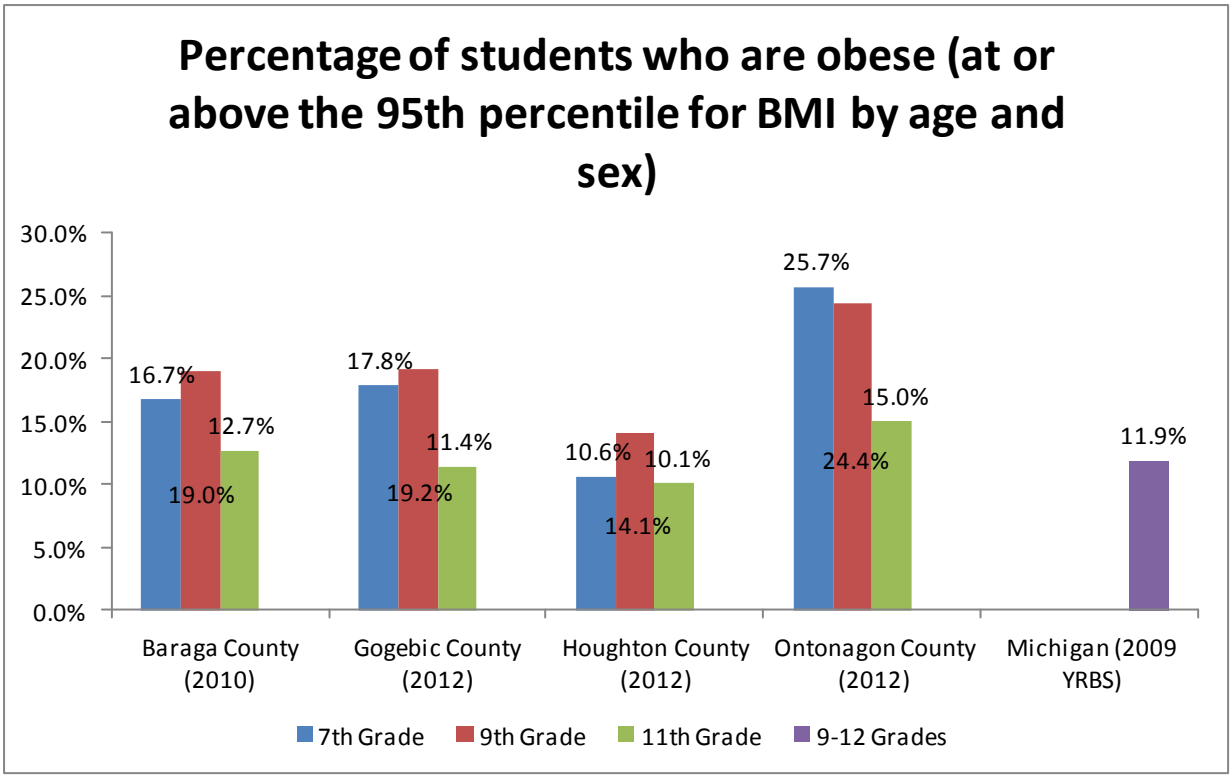
Nearly as popular as watching television on school days is computer use for purposes other than completing school work. The next collection of MiPHY results indicates the percentage of students who reported playing video or computer games or using a computer for a reason other than school work (such as social networks) three or more hours per day on an average school day. Michigan data is not available for this indicator. Extended recreational computer use appears to be highest among students in Baraga County, where roughly 30 percent of students report three or more hours per day. In Gogebic County, a sharp decrease across grade levels is observed. Again, remember that this is not a decrease over time with the same students; rather reported rates in the same year by three separate cohorts. Approximately one quarter of Ontonagon County high school students who responded to the survey indicated three or more hours of recreational computer use per day, compared to a combined grades 9 and 11 rate in Houghton County closer to 15 percent.



Weight and Nutrition Indicators (MiPHY Survey Results)

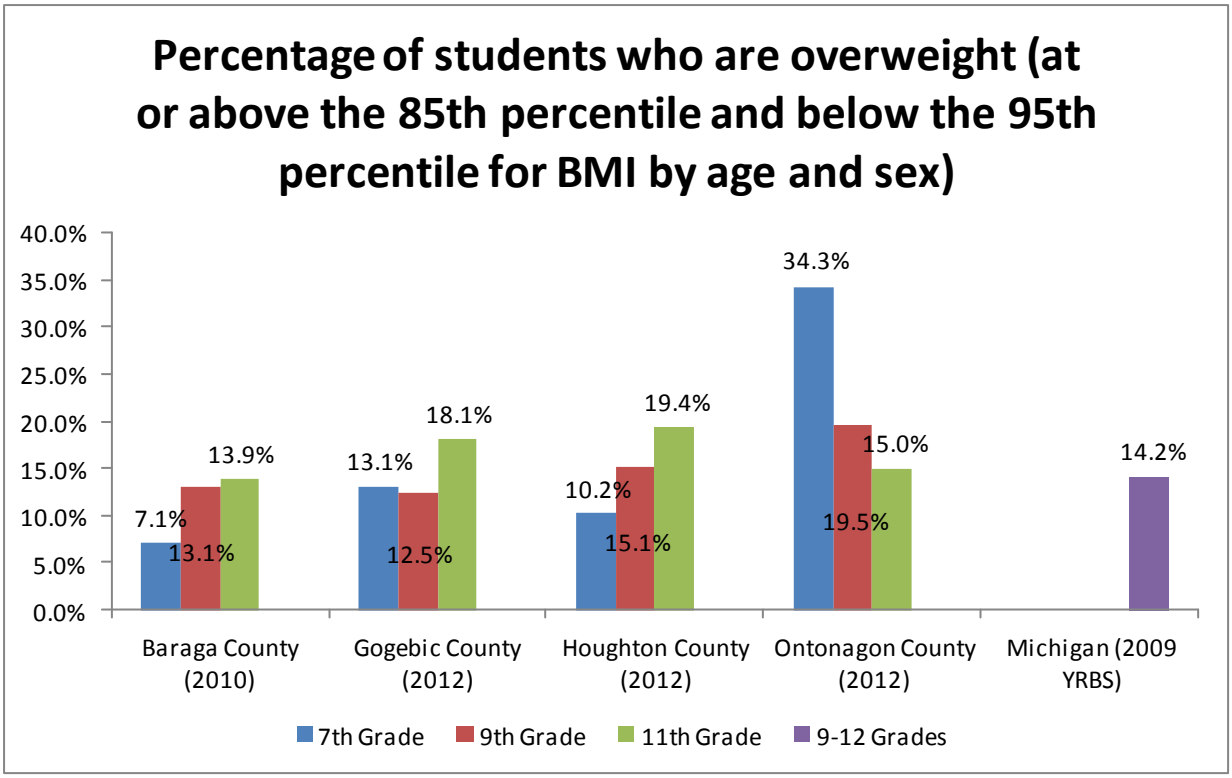
The next set of MiPHY results to be reported come from the weight and nutrition module. Students are asked to report their height and weight. From this information, their body mass index (BMI) is calculated and compared to sex– and age–specific reference data from the 2000 CDC growth charts. BMI values at or above the 95th percentile in these charts are classified as obese. Local data suggest that a higher percentage of grade 9 students were obese than grade 11 students at the time the survey was completed. Rates were highest in Ontonagon County, were nearly one quarter of grade 7 and grade 9 students reported height and weight values that placed them in the obese category. With the possible exception of Houghton County, obesity among middle and high school students appears to be more prevalent in the Western U.P. than in the state overall.

Remember that the data are from three separate groups in the same year, not a progression of the same students over time. It would be erroneous to interpret these data to suggest that students are more likely to be obese at a younger age. If anything, the data below could suggest that with each successive class of students, the obesity rate is rising, so that students born in about 1995 (who were in grade 11 in spring 2012) have lower rates of obesity than those born in 1997 or 1999.

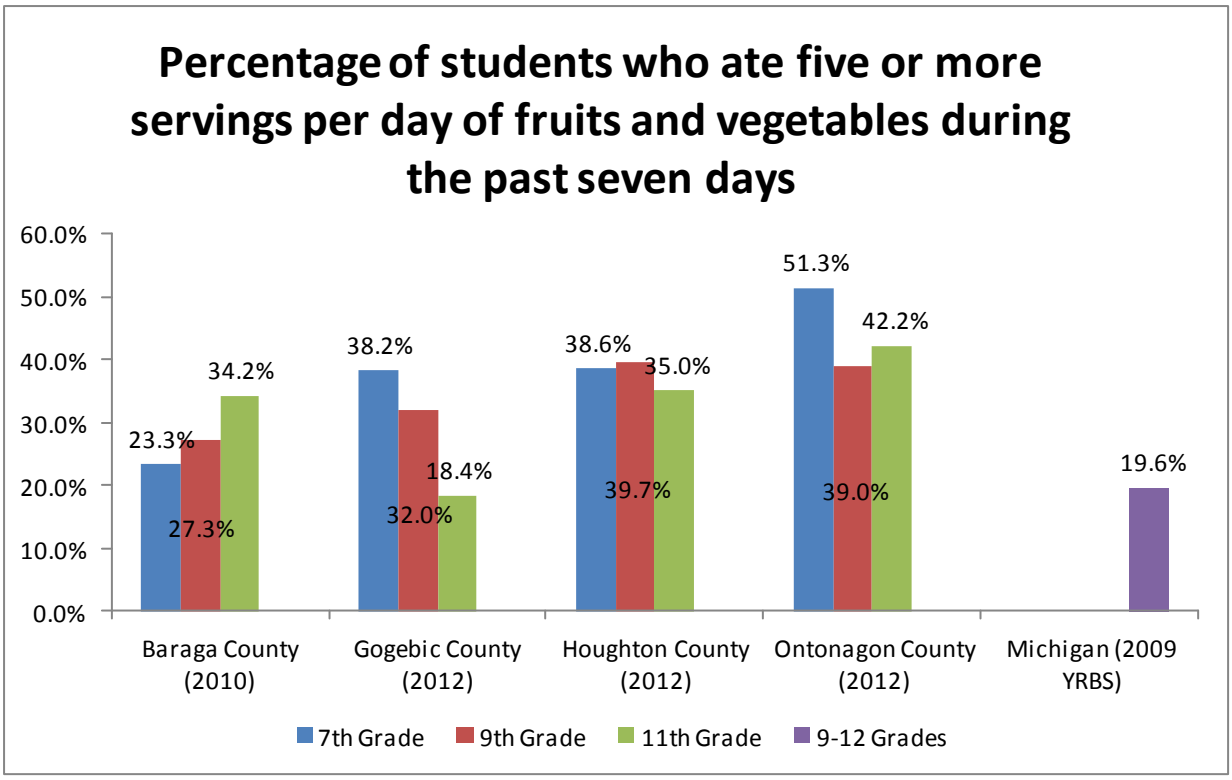


Students who reported height and weight measurements that resulted in BMI values at or above the 85th percentile but below the 95th percentile for a particular age and gender combination were classified as overweight but not obese. The proportion of each of the surveyed grade levels who reported measurements in this range are summarized in the next graph. The 34.3 percent overweight rate among Ontonagon County students in grade 7 is worthy of concern, but only 43 students in this grade level completed the 2012 survey. Taken together, Western U.P. students in grades 9 and 11 exhibit roughly the same proportion overweight as the state overall.

It is important to note that obese students are not reflected in the overweight statistics. To estimate the percentage of children who weigh more than recommended for their age and gender, the percent overweight and percent obese must be added. For example, approximately 29.5 percent of Gogebic County grade 11 students self-reported height and weight values that place them in the BMI range of being overweight or obese.

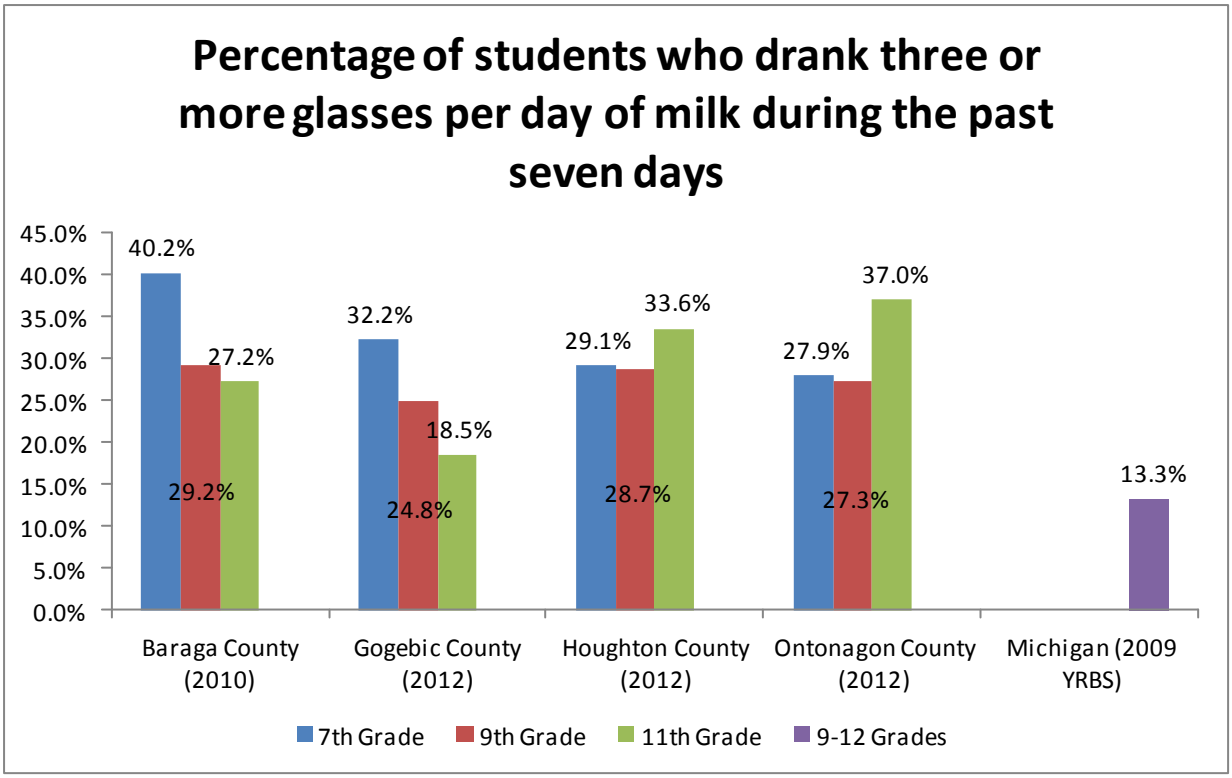


The next graph summarizes fruit and vegetable consumption rates among middle and high school students in the Western U.P. MiPHY survey results indicate that students in Baraga, Gogebic, Houghton and Ontonagon counties are generally more likely to eat five or more servings per day of fruits and vegetables than Michigan high school students overall. Despite this positive comparison, fewer than half of Western U.P. high school students reported consuming the recommended daily amount.

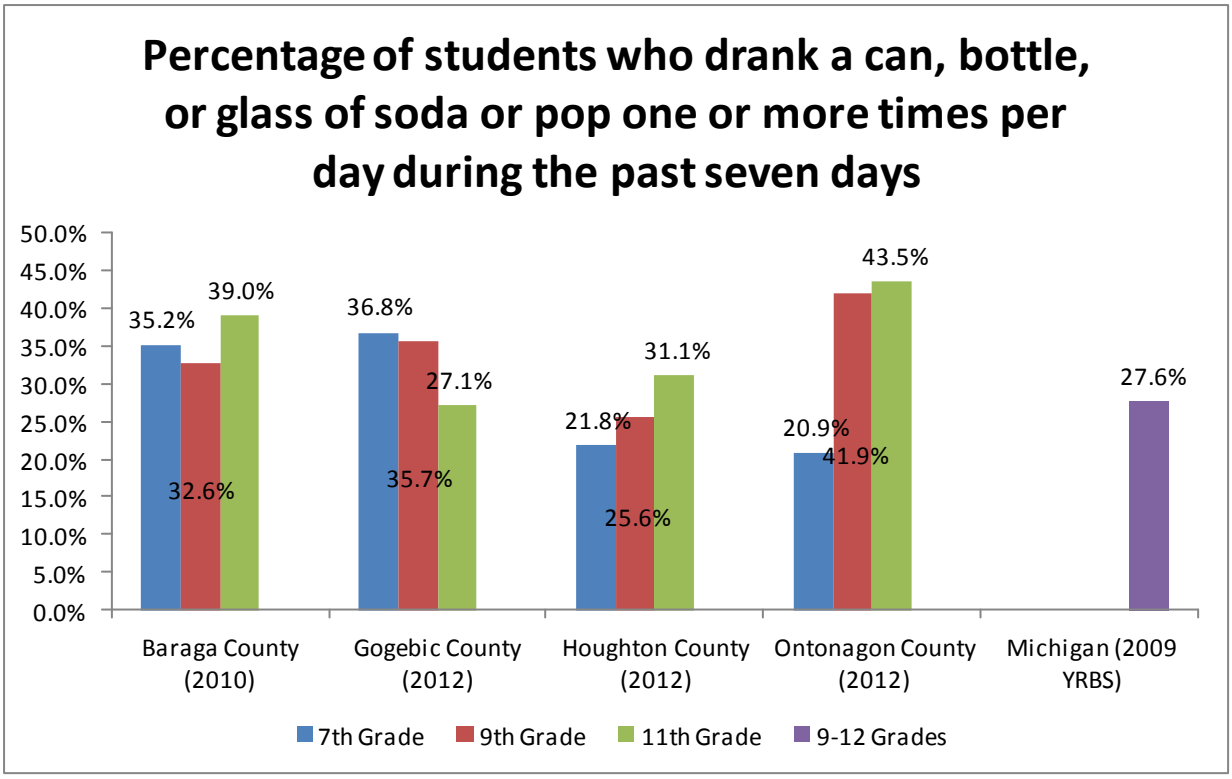


The graph below indicates that regular milk consumption, three or more glasses per day, is more prevalent among Western U.P. middle and high school students than among Michigan high school students overall. Milk and milk products are recommended in Dietary Guidelines for Americans, 2010 because of their positive contribution to dietary intake of calcium, vitamin D, and other nutrients. Milk consumption during childhood is particularly important for achieving optimal lifetime bone health.

Source:
http://www.cdc.gov/nchs/data/databriefs/db75.htm



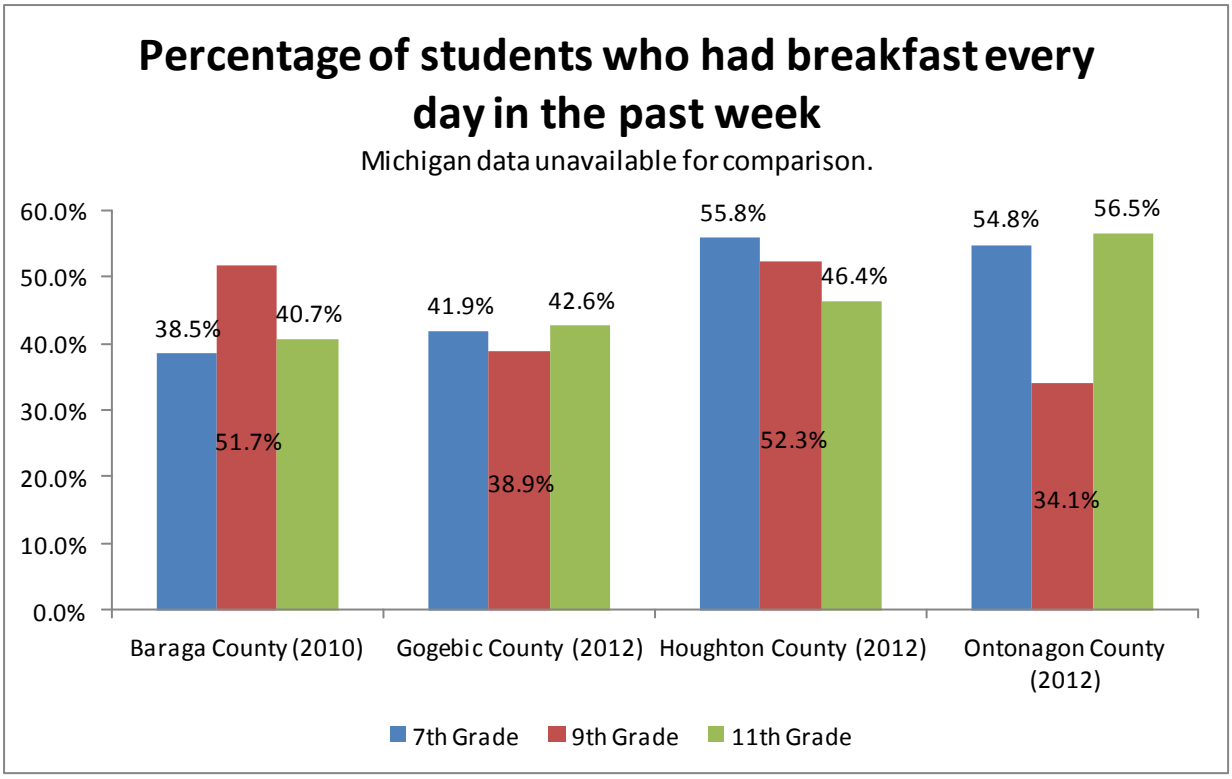
While more than one quarter of middle and high school students in the Western U.P. reported consuming three or more glasses of milk per day, a larger proportion reported drinking at least one can, bottle, or glass of soda every day during the past seven days. Soda consumption rates were highest among Ontonagon County high school students, and generally lowest among Houghton County students. Frequent soda consumption can add significantly to the calories consumed in a day and result in weight gain. For example, a 20 ounce bottle of Mountain Dew® contains 290 calories, almost 15 percent of the daily calories recommended for a moderately active adolescent. Exact caloric requirements depend on age, gender, and activity level. Soda consumption is also a contributing factor in dental caries (cavities).



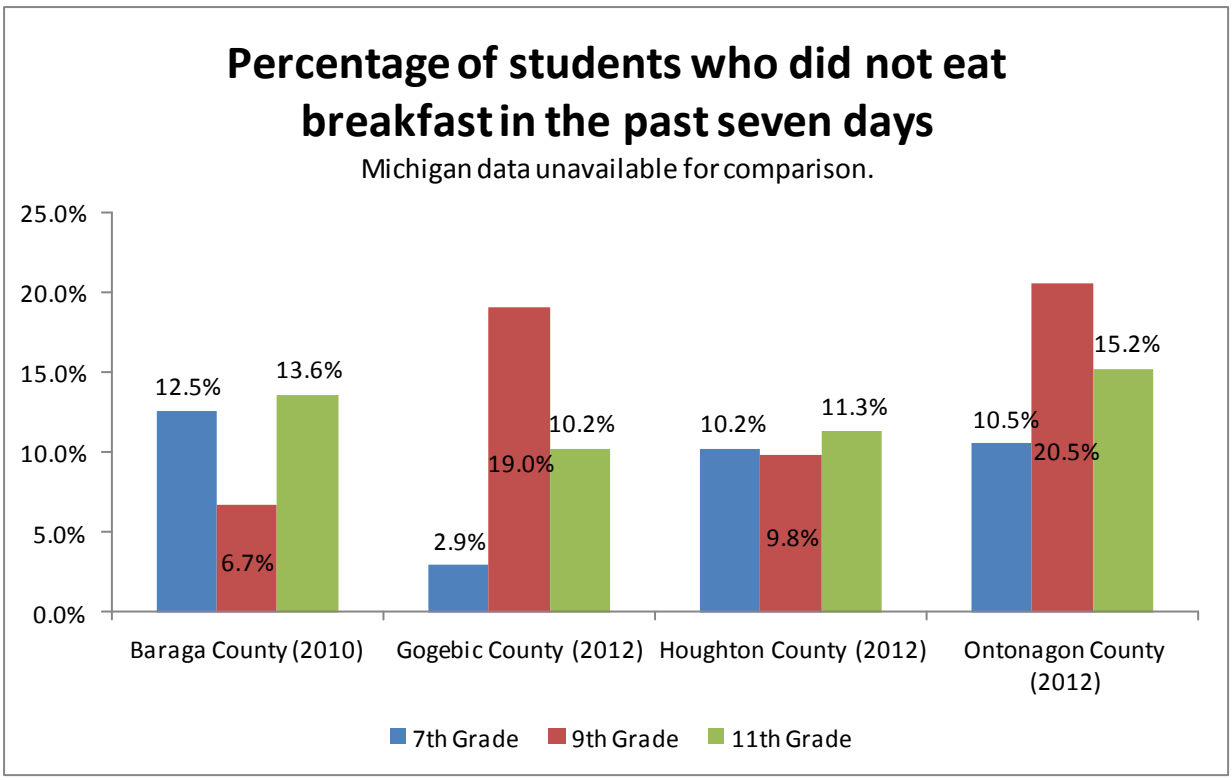
The last two graphs originating from the MiPHY weight and nutrition module show the rates at which students consume breakfast. Recent studies of breakfast consumption and school performance report that eating a healthy breakfast may enhance cognitive function (especially memory), increase attendance rates, and improve psychosocial function and mood. Certain improvements in academic performance such as improved math scores also were noted. Eating breakfast is also associated with lower rates of overweight and obesity among children and adults.

The data in the graph below indicate the percentage of students who had breakfast every day in the past week. Approximately 40 percent of grade 7 students in Baraga and Gogebic counties reported consuming breakfast with this frequency. Rates were closer to 55 percent in Houghton and Ontonagon counties. Only half of grade 9 students in Baraga and Houghton counties report being daily breakfast eaters, but that exceeds rates of 39 percent in Gogebic County and 34 percent in Ontonagon County. Fewer than half of grade 11 students in Baraga, Gogebic, and Houghton counties reported eating breakfast daily. In Ontonagon County the rate among grade 11 students was 56.5 percent.

Source:
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6005a1.htm

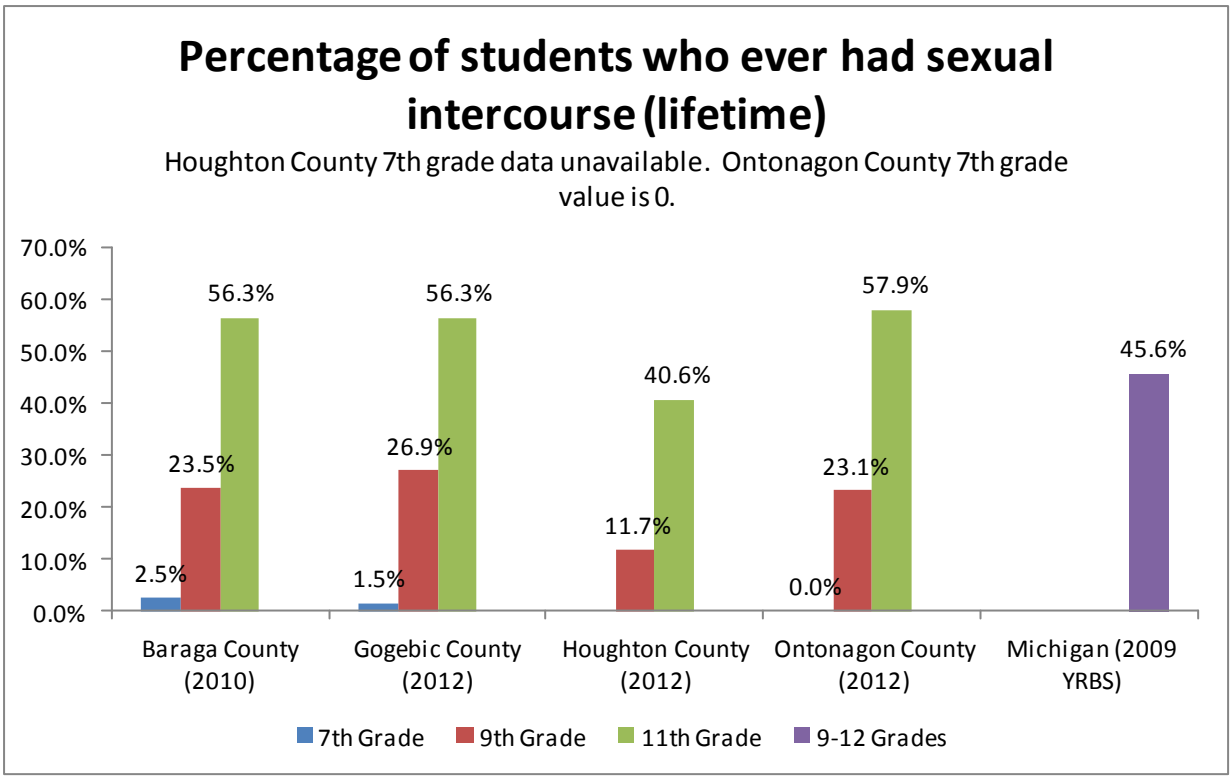


Whereas the previous graph summarized routine breakfast consumption, the next graph summarizes the rates at which students routinely miss breakfast. This could be the result of food insecurity in the home, a lack of appetite in the morning, or failure to wake up early enough to eat breakfast before the school day begins. Skipping breakfast appears to be more common in Ontonagon County than in the other Western U.P. counties, but significant variability is observed across grade levels. Across the region and across grade levels, roughly 10 percent of middle and high school students report not eating breakfast in the past seven days.

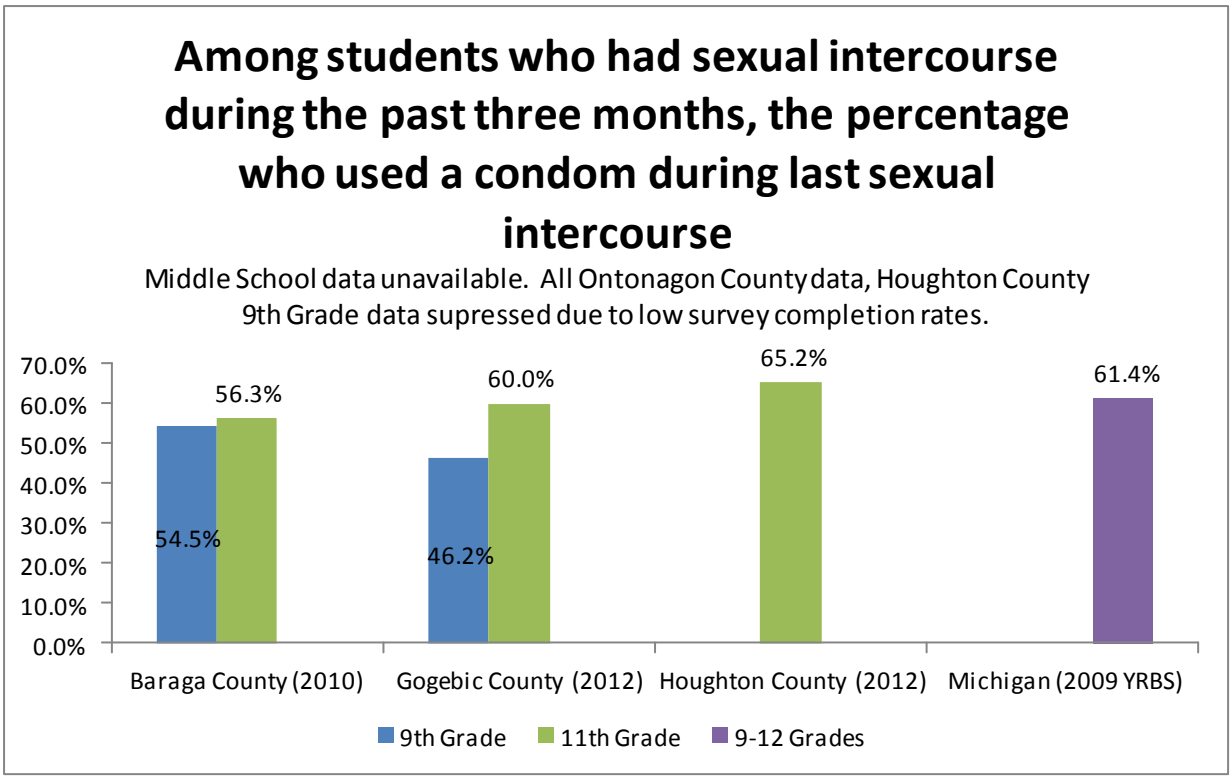


Sexual Activity Indicators (MiPHY)

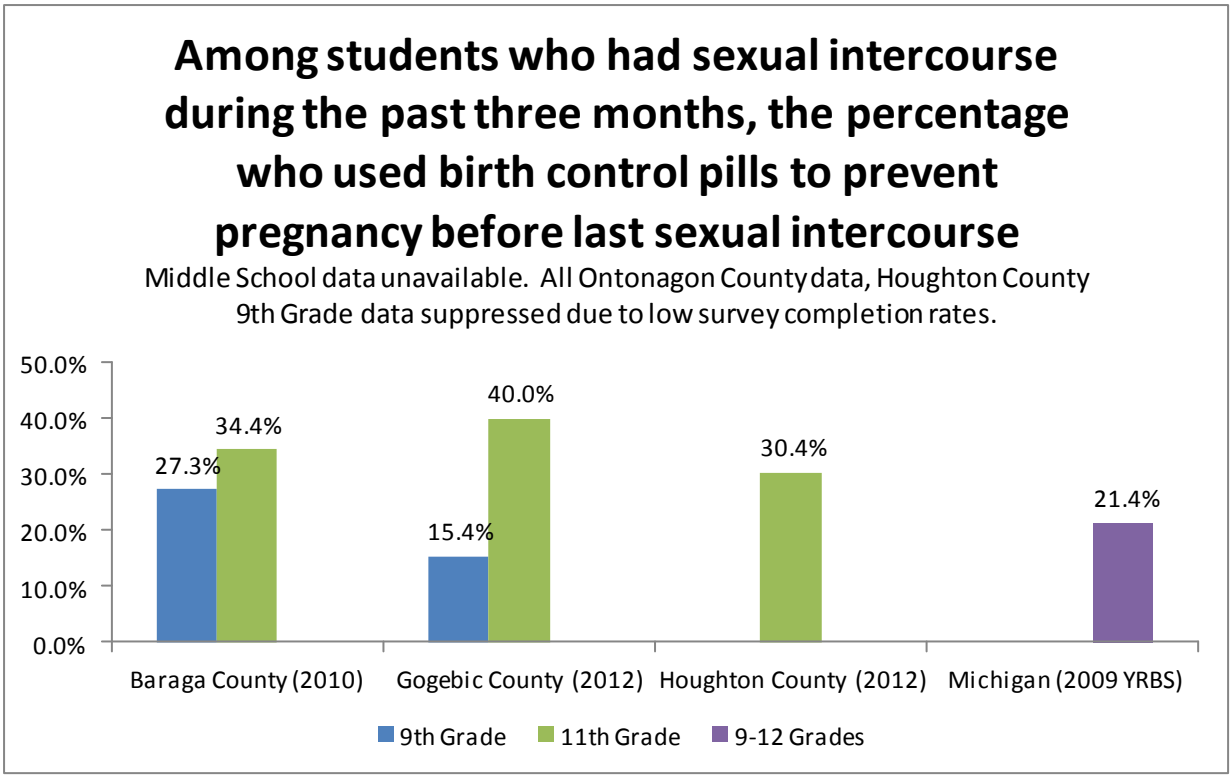
The last MiPHY module to be summarized in this report is the sexual behavior module. The first graph summarizes the percentage of students completing the survey who reported ever having had sexual intercourse. While rates among grade 7 students are less than 3 percent in the counties that reported this data, rates among grade 9 students are closer to 25 percent in Baraga, Gogebic and Ontonagon counties and half this in Houghton County. Among grade 11 students, more than 56 percent of students in Baraga, Gogebic, and Ontonagon counties report having had sex, compared to 45.6 percent of Michigan students across grades 9 through 12. Just over 40 percent of Houghton County students in grade 11 reported having had sexual intercourse at least once in their lifetime.



The graph below shows the rate at which students who had sexual intercourse during the past three months used a condom the last time they had sex. Middle school data is not available for this indicator. Houghton County grade 9 data and Ontonagon County grades 9 and 11 data were suppressed due to low survey completion rates. Of the data available, Houghton County students in grade 11 reported the highest condom use among sexually active students (62.2 percent). The lowest reported rate, 46.2 percent, was reported for Gogebic County grade 9 students.



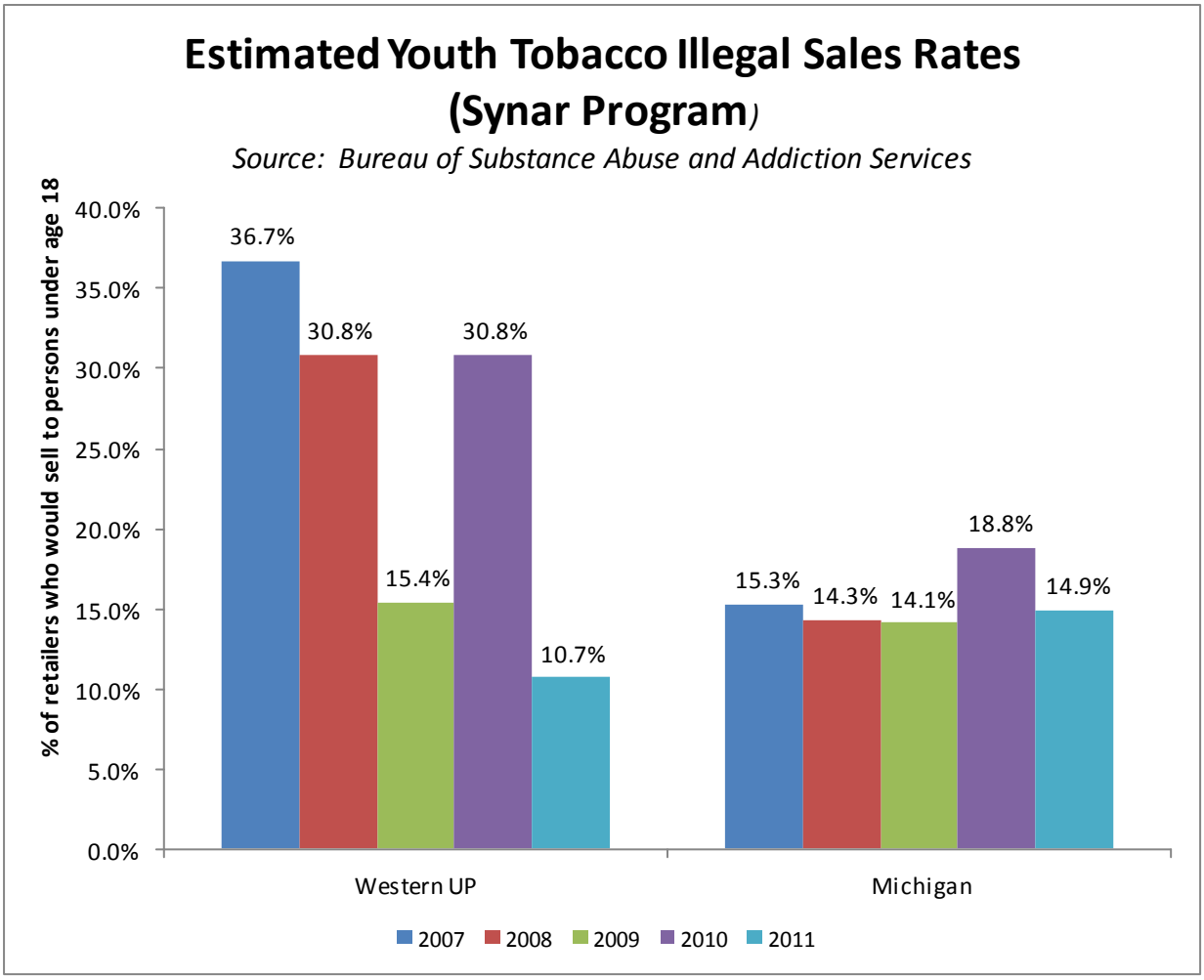
The final graph in the MiPHY series appears below. It shows the rate at which students who had sexual intercourse during the past three months used birth control pills to prevent pregnancy the last time they had sex. Middle school data is not available for this indicator. Houghton County grade 9 data and Ontonagon County grades 9 and 11 data were suppressed due to low survey completion rates. Compared to condom use among sexually active students, birth control pill use is notably less common. Gogebic County students in grade 11 reported the highest rate of birth control pill usage (40 percent), while grade 9 students in that county reported the lowest rate (15.4 percent).



Efforts to Decrease Youth Access to Tobacco

In July 1992, Congress enacted the Alcohol, Drug Abuse, and Mental Health Administration Reorganization Act, which includes an amendment aimed at decreasing youth access to tobacco. This amendment, named for its sponsor, Congressman Mike Synar of Oklahoma, requires all states that receive Substance Abuse Prevention and Treatment Block Grant funds to conduct annual, random, unannounced inspections of retail tobacco outlets to determine the percentage of retailers who would sell cigarettes to people under age 18. These inspections involve under-age persons attempting to purchase cigarettes. If a state's illegal sales rate is higher than 20 percent, the state stands to lose 40 precent of its block grant funds.

Data in the following graph reflect the inspections completed in the jurisdiction of the Western U.P. Substance Abuse Services Coordinating Agency, which spans Baraga, Dickinson, Gogebic, Houghton, Iron, Keweenaw and Ontonagon counties in Michigan. These rates are estimates based on a random sample of retailers. While standard errors of less than 2 percent are typically reported for state estimates, errors for Coordinating Agency estimates are not reported. The results of the 2011 inspections estimate that 10.7 percent of Western U.P. retail tobacco outlets would sell tobacco products to underage youth, down from an estimated 30.8 percent of retailers in 2010.



Well Child Exams—Western U.P. Adolescents Enrolled in Medicaid

Upper Peninsula Health Plan (UPHP) is the Medicaid health care benefit administrator for the entire Upper Peninsula. The data in the following table were supplied by UPHP based on their Healthcare Effectiveness Data and Information Set (HEDIS) 2012 quality review cycle. HEDIS is a tool used by more than 90 percent of America's plans to measure performance on important dimensions of care and service. It consists of 75 measures across 8 domains of care that address important health issues.

The following table summarizes the extent to which Western U.P. adolescents enrolled in Medicaid received well child exams at the recommended frequency. These well child exams must include the capture of a health and developmental history (physical and mental), a physical exam, and health education with anticipatory guidance. Considering the Western U.P. region in aggregate, children ages 12 through 21 years of age enrolled in Medicaid received well child exams at a rate that was 11 percent lower than the U.P. overall. Rates for individual counties are presented in the yellow column in the table. Among the Medicaid populations under study, adolescents in Ontonagon County were least likely to receive a well child exam in 2011 (23.1 percent); Baraga County adolescents were most likely (46.8 percent).

% of children continuously enrolled in UPHP Medicaid ages 12 through 21 years who received an annual well child exam in 2011.

	Received **2011 Exams	By County **2011 Denominator	By County 2011 % Received	Aggregate W-UP HEDIS 2012	***UPHP UP Region-wide HEDIS 2012 Results:
Baraga County	66	141	46.8%		
Gogebic County	166	385	43.1%		
Houghton County	290	737	39.3%		
Keweenaw County	13	31	41.9%	39.7%	50.69%
Ontonagon County	30	130	23.1%		

**Data supplied by UPHP based on their HEDIS 2012 quality review cycle which equates to care from year 2011 (or earlier as measure specifications require.)

*** Select UPHP final rates based on both claims and medical record review data

Infectious Disease Chapter Introduction

The Michigan Department of Community Health's Michigan Disease Surveillance System (MDSS) is a web-based disease reporting system used by public and private health care providers and laboratories to track communicable, infectious and vector-borne diseases and disease outbreaks. This section includes local data from MDSS and the analogous Wisconsin system on some of the more common communicable, blood-borne, sexually transmitted, and food/water borne diseases.

In this section, it is worth noting the critically important role that vaccination plays in controlling infectious disease within our communities. Vaccines are one of the most important public health triumphs in history, eradicating smallpox and nearly eliminating polio from the world stage. According to the CDC, it is currently estimated that vaccination of each U.S. birth cohort with the current childhood immunization schedule "prevents approximately 42,000 deaths and 20 million cases of disease, with net savings of nearly $14 billion in direct costs and $69 billion in total societal costs." Unfortunately, some discredited 'scientific research' has created unwarranted fears among many parents regarding vaccination safety that have been hard to dispel. This has led to a relatively recent increase in the number of children incompletely vaccinated or vaccinated on a delayed time schedule. In order for vaccination to be effective as a public health strategy, enough individuals must be vaccinated to promote the " herd immunity," that occurs when small numbers of unvaccinated children are protected because nearly everyone around them is vaccinated and cannot infect them. This effect is particularly important to protect those individuals who for some reason do not respond adequately to vaccination, those with immune problems, and those with conditions making them ineligible for a particular vaccination. Protection through herd immunity generally requires vaccination rates of 80-90% within a population. For the primary series of childhood vaccinations (2012), state and local vaccination rates are lower than this threshold at 73% in Michigan, 76% in Baraga County, 75% in Gogebic, 65% in Houghton, 69% in Keweenaw and 74% in Ontonagon County. This contributes to on-going outbreaks of vaccine-preventable diseases such as the local pertussis outbreak in 2010.

Pertussis (whooping cough) is a vaccine-preventable respiratory illness that is easily spread by coughing and sneezing. Infants and children with the disease may cough violently and rapidly, over and over, until the air is gone from their lungs and they're forced to inhale with a loud "whooping" sound. Pertussis is most severe for infants; more than half of infants less than 1 year of age who become infected require hospitalization. Primary prevention is through vaccination, so infants and young children should receive a series of doses according to a prescribed schedule. Because of their age, infants will not have completed the entire series required for protection and therefore it is critically important that parents and other individuals having close contact with newborns and infants, receive a one-time pertussis booster. In fact, this booster is now required in Michigan for students entering 6th grade and for older children and adults who have not yet received a booster dose since 4-6 years of age. As noted, insufficient vaccination rates contribute to outbreaks of this disease, as seen in 2010.

Chlamydia is the most common lab-confirmed sexually transmitted infection (STI) in the United States and locally, yet true prevalence is even higher as many infected persons are asymptomatic. Women, especially young women 15 -24 years of age, are hit hardest by Chlamydia. Untreated, about 10-15

percent of women with Chlamydia infection of the lower reproductive tract, will go on to develop an infection in the upper reproductive tract called pelvic inflammatory disease (PID). PID may cause symptoms or may be "silent." Involvement of the upper structures (fallopian tubes, uterus and surrounding tissues) can lead to permanent scarring and infertility. Routine annual screening of all sexually active women between 15 and 24 years of age and women of all ages with risk factors is recommended by the CDC. Unfortunately, available data suggest that screening rates for Medicaid-enrolled women in the UP are lower than anywhere else in the state.

Hepatitis C is an infectious liver disease that results from infection with the Hepatitis C virus (HCV). Symptoms may be so mild that individuals do not realize that they have been infected and yet 75-85% will develop chronic infection. It is estimated that 20% of those infected will develop cirrhosis within 20 years and as many as 5% will die from HCV-related illness. Chronic Hepatitis C infection may lead to hepatocellular cancer which is, according to the CDC, the fastest growing cause of cancer-related mortality nationally. Hep C is also the current leading reason for liver transplantation. Hepatitis C is usually spread when blood from a person infected with the Hepatitis C virus enters the body of someone who is not infected. Today, most people become infected with the Hepatitis C virus by sharing needles or other equipment used to inject drugs. Hep C may also be transmitted in utero from mother to child and rarely, through sexual contact. Unlike Hepatitis A and B, there is no current vaccine to prevent Hepatitis C infection.

Hepatitis C Virus (HCV) is getting some attention lately due to new recommendations from the CDC for routine, one-time screening blood test of Baby Boomers, i.e. those born between 1946 and 1964. There are an estimated 2.7 -3.9 million Americans living with Hepatitis C infection—more than half of them unaware. Interestingly, although baby boomers make up about 27% of the population, they represent nearly 75% of the infections, hence, the new recommendations for screening this particular group.

Lyme disease continues to be the most commonly reported vector-borne disease in the United States; approximately 30,000 cases were reported nationally in 2010. There are no currently available vaccines in the U.S. to prevent Lyme Disease, so prevention strategies are focused on avoidance of exposure. In Michigan, 106 cases were reported in 2011, resulting in an incidence rate of 1.1 cases per 100,000 persons. Both the Upper Peninsula and western Lower Peninsula are known risk areas, but incidence rates differ: 17.5 cases per 100,000 persons in the Upper Peninsula compared to 1.3 cases per 100,000 persons in the western Lower Peninsula. In a 2011 report issued by the Michigan Department of Community Health, Gogebic and Ontonagon counties were labeled as endemic counties for Lyme disease, meaning infected tick populations have been confirmed, and/or ≥2 confirmed human cases have been identified with local exposure.

Local Focus

- Outbreaks of vaccine-preventable diseases such as pertussis and chickenpox, which can lead to hospitalization and other serious consequences, continue to occur at local, state and national levels. Lower than optimal vaccination coverage causally contributes to these outbreaks.

- Chlamydia is the most common *laboratory-confirmed* sexually transmitted disease in the region. Of note, Human Papillomavirus (HPV), the leading cause of cervical cancer, is the overall most common sexually transmitted disease. The cancer-causing strains are now largely preventable with the widely available HPV vaccine.

Potential Future Implications

- A well-vaccinated public will continue to be critically important in controlling the spread of many communicable diseases and even cancer (Hep B vaccine, HPV vaccine). This will be even more important as the world becomes effectively smaller through global travel – because illnesses, such as measles, that have declined substantially in this country, can re-emerge in the U.S. through infections that are contracted during travel outside the country and are brought home or through contact of U.S. residents with individuals arriving from countries where it is still commonplace.
- It is likely that tick populations endemic for Lyme disease will increase their territorial spread beyond the already identified counties in Michigan, increasing exposure and consequently infection rates within local populations.
- Increased screening for Hepatitis C may identify increasing numbers of infected individuals who will require specialty medical care and treatment.
- Maintenance of clean water supplies and oversight of food production, distribution and preparation will continue to be important as numerous and often widespread food-borne illness outbreaks have demonstrated.

Sources:
http://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm
http://www.michigan.gov/mdch/0,4612,7-132-2942_4911_4914-240419--,00.html
http://www.cdc.gov/hepatitis/c/cfaq.htm

Infectious Disease

The data in the table below represent the number of confirmed cases of selected infectious diseases diagnosed in Baraga, Gogebic, Houghton, Keweenaw and Ontonagon counties. Caseloads for Iron County, Wisconsin appear later in this section.

Cases of Selected Infectious Diseases
Baraga, Gogebic, Houghton, Keweenaw and Ontonagon Counties

	2007	2008	2009	2010	2011
AIDS, Aggregate	0	0	0	1	0
Food-borne illnesses (includes E. Coli, Salmonella, Shigella)	19	26	20	19	22
Chlamydia (Genital)	73	72	97	87	91
Gonorrhea	1	5	1	2	3
Syphilis	0	1	0	0	0
Tuberculosis	0	0	1	2	2
Varicella (Chickenpox)	2	30	11	3	6
Haemophilus influenzae B cases	1	0	0	0	0
Measles	0	0	0	0	0
Pertussis (Whooping Cough)	0	1	0	96	12
Rubella	0	0	0	0	0
Hepatitis A	1	5	0	2	2
Hepatitis B (Acute and Chronic)	1	6	8	2	4
Hepatitis C (Acute and Chronic)	49	47	43	29	49
Staphylococcus Aureus	0	0	0	0	0
Lyme Disease	7	1	3	9	8

Source: Michigan Disease Surveillance System

Local Survey Findings: HIV Testing

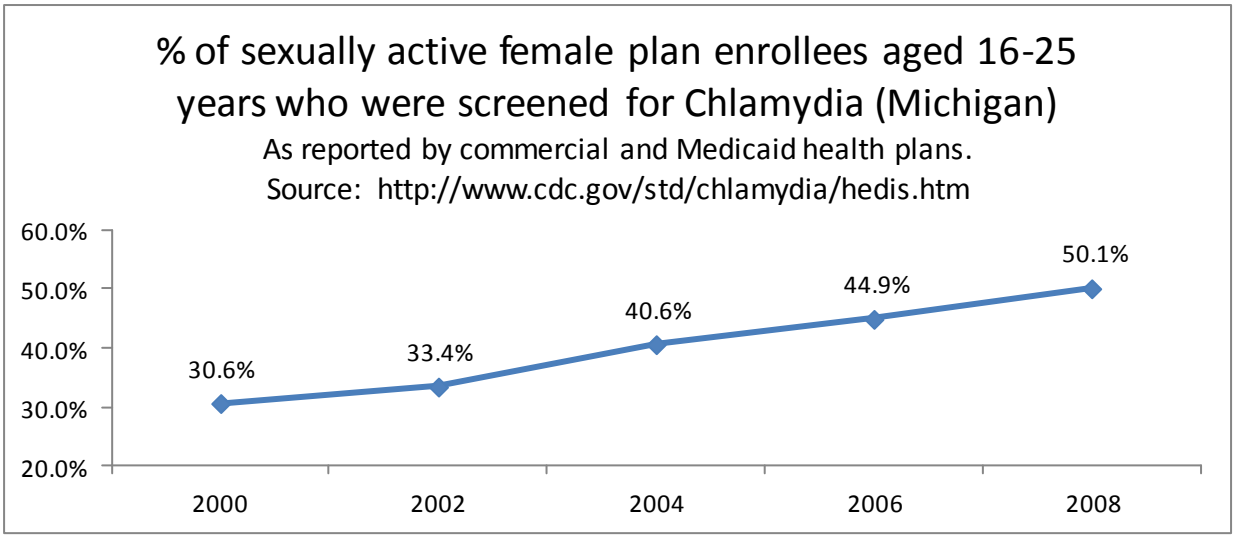
- An estimated 33.6% of Western U.P. adults between the ages of 18 and 64 indicated that they ever had an HIV test.
- Testing was more common among adults aged 18 to 39 (40.8%) than among adults aged 40 to 64 (27.1%).

The next table shows the 91 cases of Chlamydia confirmed in the Western U.P. in 2011 broken out by age and gender. CDC recommends annual Chlamydia screening for sexually active young women aged 25 and under, as well as older women with risk factors such as new or multiple sex partners.

2011 Western U.P. Region Chlamydia Cases (Baraga, Gogebic, Houghton, Keweenaw and Ontonagon Counties)		
	Male	Female
All Ages	20	71
Under 15 Years	0	1
15-19 Years	3	27
20-24 Years	10	32
25-29 Years	3	9
30-44 Years	4	2
45 Years and Older	0	0
Source: Michigan Disease Surveillance System		

What appears to be an increase in Chlamydia incidence in the table on the previous page may instead reflect an increase in screening rates. In 2007-08, the Michigan Department of Community Health endorsed the CDC recommendation that Title X family planning clients be tested beginning at age 15. Since 2000, screening for Chlamydia has been included as a HEDIS quality measure, another factor prompting greater attention on timely screenings. This HEDIS indicator measures the proportion of sexually active females between the ages of 15 and 25 who were screened for Chlamydia annually. Michigan screening rates from 2000 through 2008 are shown below.

Source:
http://www.cdc.gov/std/chlamydia/hedis.htm



The data in the following table reflect case counts of selected infectious diseases diagnosed in Iron County, Wisconsin from 2006 through 2010. Contrary to the Michigan counties under study, Iron County did not experience a pertussis outbreak in 2010. Lyme disease incidence is increasing, however.

Cases of Selected Infectious Diseases
Iron County, Wisconsin

	2006	2007	2008	2009	2010
Salmonellosis	0	3	0	0	0
Giardia	0	1	1	1	2
E-Coli	0	0	0	0	0
Shigellosis	0	0	0	0	0
Chlamydia	0	2	8	7	7
Syphilis	0	0	0	0	1
Pertussis (Whooping Cough)	0	1	0	1	2
Tuberculosis, Latent Infection (LTBI)	0	0	0	0	0
Varicella (Chickenpox)	0	0	0	0	0
Measles	0	0	0	0	0
Hepatitis B	0	1	0	2	0
Hepatitis C	3	2	2	5	3
Lyme Disease	1	2	8	12	8

Source: Wisconsin Electronic Data Delivery System

Chronic Disease and Mortality Chapter Introduction

Chronic diseases – such as heart disease, stroke, cancer, diabetes, and arthritis – are among the most common, costly, and preventable of all health problems in the United States, and the leading causes of death and disability. According to the Centers for Disease Control and Prevention (CDC):

- 7 out of 10 deaths among Americans each year are from chronic diseases. Heart disease, cancer and stroke account for more than 50% of all deaths each year.
- 133 million Americans – almost 1 out of every 2 adults – have at least one chronic illness.
- 1 in every 3 adults is obese (Body Mass Index ≥ 30) and almost 1 in 5 youth between the ages of 6 and 19 is obese (BMI ≥ 95th percentile of the CDC growth chart).
- About one-fourth of people with chronic conditions have one or more daily activity limitations.
- Arthritis is the most common cause of disability, with nearly 19 million Americans reporting activity limitations.
- Diabetes continues to be the leading cause of kidney failure, non-traumatic lower-extremity amputations, and blindness among adults, aged 20-74.
- Excessive alcohol consumption is the third leading preventable cause of death in the U.S., behind diet and physical activity, and tobacco.
- According to a recent National health and Nutrition Examination Survey (NHANES), nearly 40% of U.S. adults have moderate to severe periodontitis, the leading cause of adult tooth loss. It occurs when gum inflammation or infection is not treated and spreads to the tissues supporting the teeth. High risk groups included males, individuals with low education levels or living in poverty, and smokers.

Four modifiable health risk behaviors—lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption—are responsible for much of the illness, suffering, and early death related to chronic diseases.

- More than one-third of all adults nationwide do not meet recommendations for aerobic physical activity based on the 2008 Physical Activity Guidelines for Americans, and 23% report no leisure-time physical activity at all in the preceding month.
- In 2007, less than 22% of high school students and only 24% of adults reported eating 5 or more servings of fruits and vegetables per day.
- More than 43 million American adults (approximately 1 in 5) smoke.
- In 2007, 20% of high school students in the United States were current cigarette smokers.
- Lung cancer is the leading cause of cancer death, and cigarette smoking causes almost all cases. Compared to nonsmokers, men who smoke are about 23 times more likely to develop lung cancer and women who smoke are about 13 times more likely. Smoking causes

about 90% of lung cancer deaths in men and almost 80% in women. Smoking also is a cause of cancer of the voice box (larynx), mouth and throat, esophagus, bladder, kidney, pancreas, cervix, and stomach, and acute myeloid leukemia.

- Excessive alcohol consumption contributes to over 54 different diseases and injuries, including cancer of the mouth, throat, esophagus, liver, colon, and breast, liver diseases, and other cardiovascular, neurological, psychiatric, and gastrointestinal health problems.
- Binge drinking, defined as consuming more than 4 drinks on an occasion for women or 5 drinks for men, is reported by 17% of U.S. adults, averaging 8 drinks per binge.

Local Focus

- Half of local deaths are attributed to heart disease or cancer, similar to Michigan and U.S. rates. Age- adjusted death rates and years of potential life lost below age 75, are similar as well. Age-adjusted rates of death by cardiovascular disease and trends over time are very similar to state and national data.
- Local age-adjusted cancer mortality rates hover around 200 per 100,000 population per year, with no evidence that any county differs significantly from the Michigan rate. Proportions of cancer deaths by leading site (lung, colorectal, prostate and breast) are nearly identical to Michigan data. Prostate cancer is the most common cancer among men, and breast cancer is the most common cancer among women. Lung cancer is the second most common cancer among both genders, and overall the leading type of cancer death.
- Many people think local cancer rates are higher than in other parts of the country, but the data demonstrate that from 2005-09, age-adjusted cancer incidence rates (new cancer cases diagnosed per year per 100,000 people) were lower in Gogebic, Keweenaw, and Ontonagon counties (Michigan) and Iron County (Wisconsin) than for the state of Michigan overall, while the rates in Baraga and Gogebic counties were estimated as slightly lower, but this difference was not shown to be statistically significant. Perhaps the awareness of cancer is greater than that of heart disease because more years of potential life below age 75 are lost to cancer than to heart disease, and because in small towns, nearly everyone knows someone who has had cancer, and fundraisers for cancer are more common than for other diseases.
- Diabetes age-adjusted death rates in recent years were higher in Houghton and Keweenaw counties than statewide. Note than about 10 percent of adults in the 2012 regional behavioral risk factor survey reported that they had been diagnosed with diabetes, a rate expected to rise given the dramatic increase in obesity in recent years. Experts predict that one third of today's youth will develop Type 2 diabetes in their lifetimes based on current obesity rates
- Local rates for various behavioral risk factors are highlighted in this section, including data concerning tobacco use, obesity, physical activity and nutrition. As noted above, current and former tobacco users and people who are overweight or obese are at higher risk of chronic disease and disability.

- Another condition not always considered in discussions of disease and disability is clinical depression, but one quarter of local adults have been diagnosed with chronic or episodic depression and related diagnoses.
- An estimated 60 percent of low-income adults in the Western U.P. received no dental services in the past year and 71 percent of adults with household incomes less than $25,000 had no dental insurance.
- Local residents, particularly those with low income and/or low educational attainment, reported under-utilization of age-appropriate screening tests to detect diseases such as breast cancer (mammography), prostate cancer (PSA) and colon cancer (sigmoidoscopy or colonoscopy) compared to their Michigan peers. In fact, only 53.1% of Western U.P. women ≥ 40 years reported receiving a mammogram in the past year, only 54.4% of males ≥ 50 years reported having a PSA test in the past year and only 49.8% of adults ≥ 50 years reported undergoing a sigmoidoscopy or colonoscopy in the past year.

Potential Future Implications

- In the Western U.P., as in the rest of the United States, obesity is projected to overtake tobacco use as the leading root cause of preventable mortality, morbidity, disability and years of potential life lost. Given local obesity rates that now top 30 percent, similar to Michigan and national rates, it is likely that the prevalence of cardiovascular disease, diabetes and other chronic illnesses will rise locally as well.
- The greater prevalence of high risk health behaviors among low-income populations combined with lower utilization of recommended health screening and routine preventive health care, translates into a higher chronic disease burden and poorer health outcomes for many of our residents.
- On the local resident survey, 42 percent of adults reported that they did not access dental care in the past year, with the percent even higher for low income individuals. This is particularly concerning because of the likely high prevalence of periodontal disease in our population and its role as the primary cause for tooth loss in adults. Periodontitis has also been epidemiologically linked to cardiovascular disease. Improving access to and utilization of routine dental care could have a significant impact on the health status of local residents.
- On a positive note, the fact that the major risk factors for many chronic diseases are modifiable suggests that there is an opportunity to alter current trends toward increased disease burden.

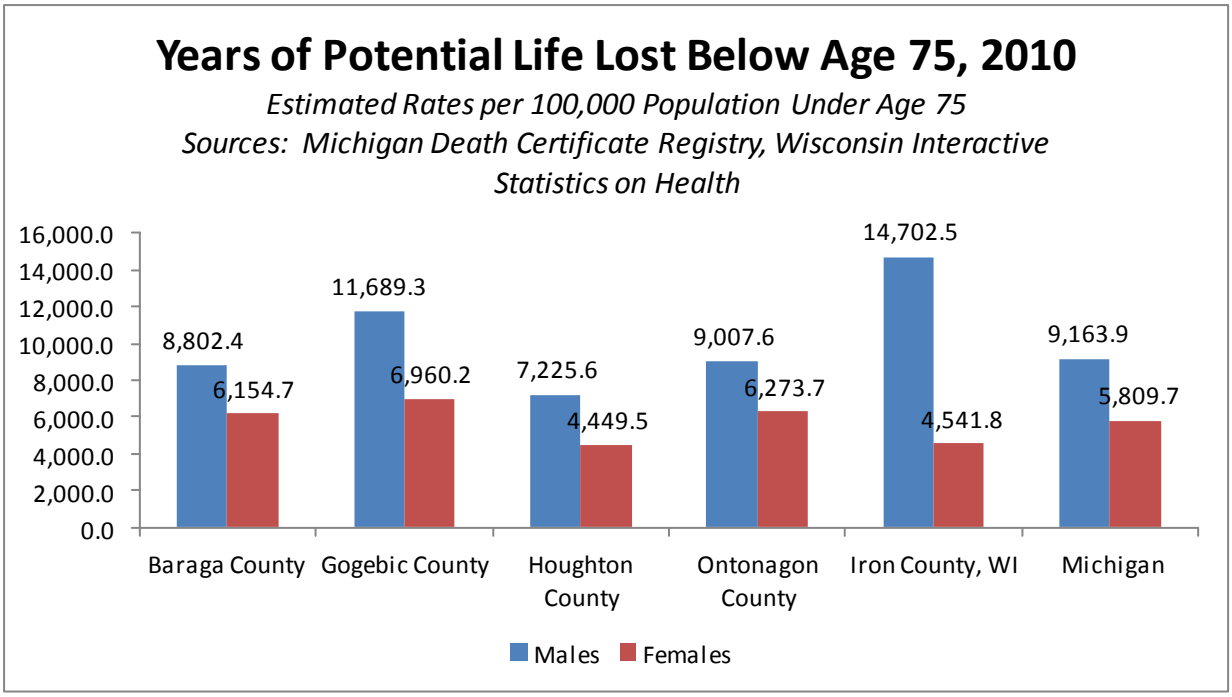
Chronic Disease and Mortality

In the following table, 2010 mortality statistics are summarized as the number of deaths per county attributable to each cause listed, and the percentage of county deaths attributable to that cause. Red indicates the most common cause of death for that county.

2010 Mortality Statistics							
	Baraga County	**Gogebic County**	**Houghton County**	**Keweenaw County**	**Ontonagon County**	**Iron County, WI**	**Michigan**
Total Deaths	105	234	351	21	96	83	88,058
Heart Disease	26 (24.8%)	62 (26.5%)	90 (25.6%)	6 (28.6%)	32 (33.3%)	25 (30.1%)	23,321 (26.5%)
Cancer	17 (16.2%)	68 (29.1%)	74 (21.1%)	3 (14.3%)	18 (18.8%)	18 (21.7%)	20,619 (23.4%)
Chronic Lower Respira-tory Diseases	11 (10.5%)	12 (5.1%)	17 (4.8%)	1 (4.8%)	7 (7.3%)	6 (7.2%)	5,079 (5.8%)
Stroke	2 (1.9%)	15 (6.4%)	23 (6.6%)	5 (23.8%)	9 (9.4%)	10 (12.0%)	4,473 (5.1%)
Unintentional Injuries	5 (4.8%)	10 (4.3%)	12 (3.4%)	2 (9.5%)	3 (3.1%)	7 (8.4%)	3,758 (4.3%)
Diabetes Mellitus	3 (2.9%)	1 (0.4%)	10 (2.8%)	1 (4.8%)	2 (2.1%)	0 (0.0%)	2,695 (3.1%)
Alz-heimer's Disease	13 (12.4%)	8 (3.4%)	18 (5.1%)	1 (4.8%)	4 (4.2%)	NA	2,735 (3.1%)
Kidney Disease	0 (0.0%)	1 (0.4%)	4 (1.1%)	1 (4.8%)	2 (2.1%)	0 (0.0%)	1,724 (2.0%)
Pneumo-nia/ Influ-enza	4 (3.8%)	4 (1.7%)	3 (0.9%)	0 (0.0%)	3 (3.1%)	0 (0.0%)	1,524 (1.7%)
Suicide	1 (1.0%)	4 (1.7%)	4 (1.1%)	1 (4.8%)	4 (4.2%)	NA	1,265 (1.4%)
Other Causes	23 (21.9%)	49 (20.9%)	96 (27.4%)	0 (0.0%)	12 (12.5%)	17 (20.5%)	20,865 (23.7%)
Source: Michigan Department of Community Health							

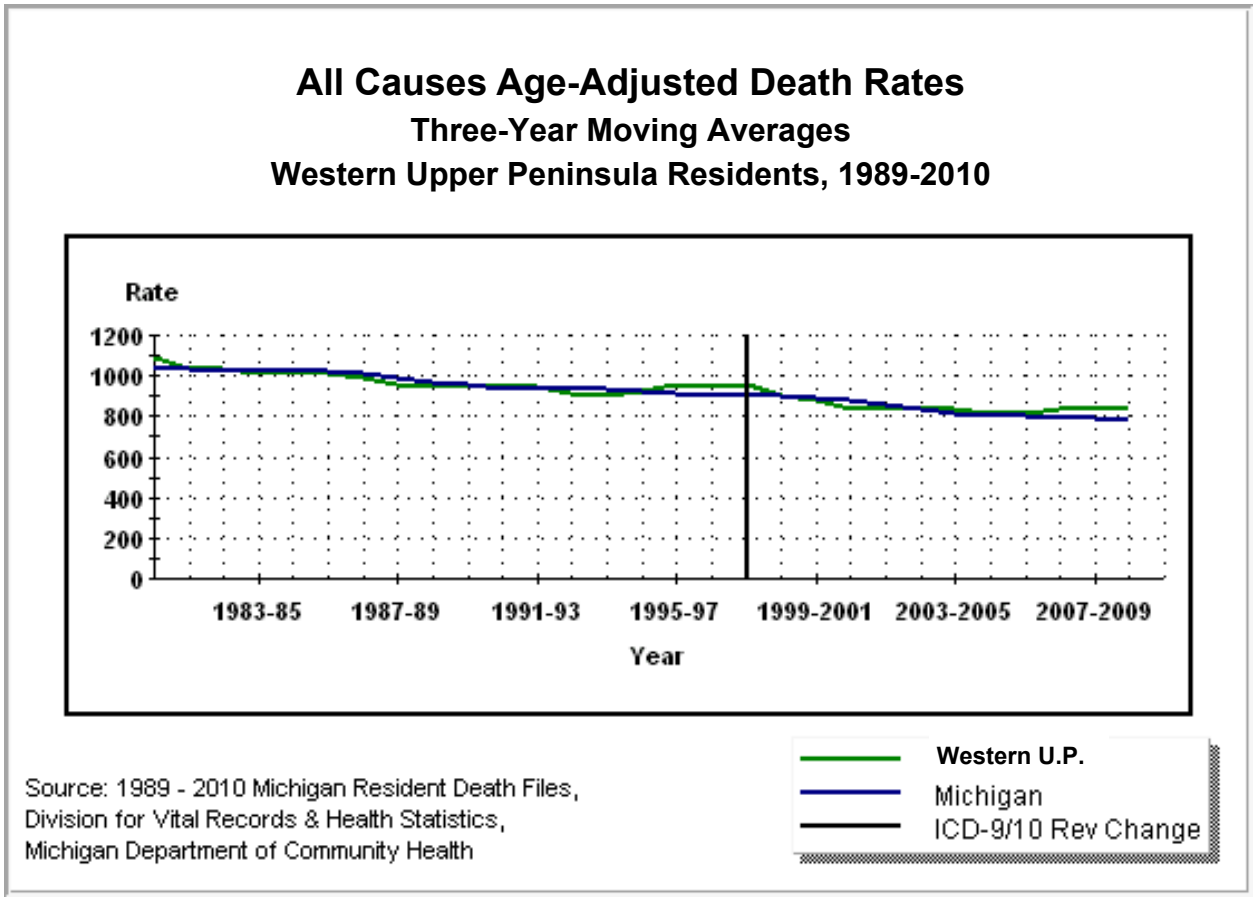
The data show that heart disease and cancer are the most common causes of death, generally ranking first and second. These two chronic diseases have occupied the top positions in cause of death rankings across the nation for many years. In this chapter, additional data will be presented to illuminate historical trends in cancer and heart disease incidence and mortality.

The graph below shows the estimated years of potential life lost below age 75 (YPLL) per 100,000 population under age 75. The concept of years of potential life lost (YPLL) involves estimating the average time a person would have lived had he or she not died prematurely. The number of years of potential life lost is calculated as the number of years between the age at death and 75 years of age for persons dying before their 75th year. Persons who live beyond age 75 do not affect this calculation. Due to its small population, Keweenaw County's rate was deemed statistically unreliable by the Michigan Department of Community Health and suppressed. All causes of death are included in these rates. The data show that women are much more likely to live beyond age 75 than males. Confidence intervals were not published for the Michigan county and state data, making it impossible to determine whether the suggested higher rates of YPLL for Iron County residents are statistically significant.

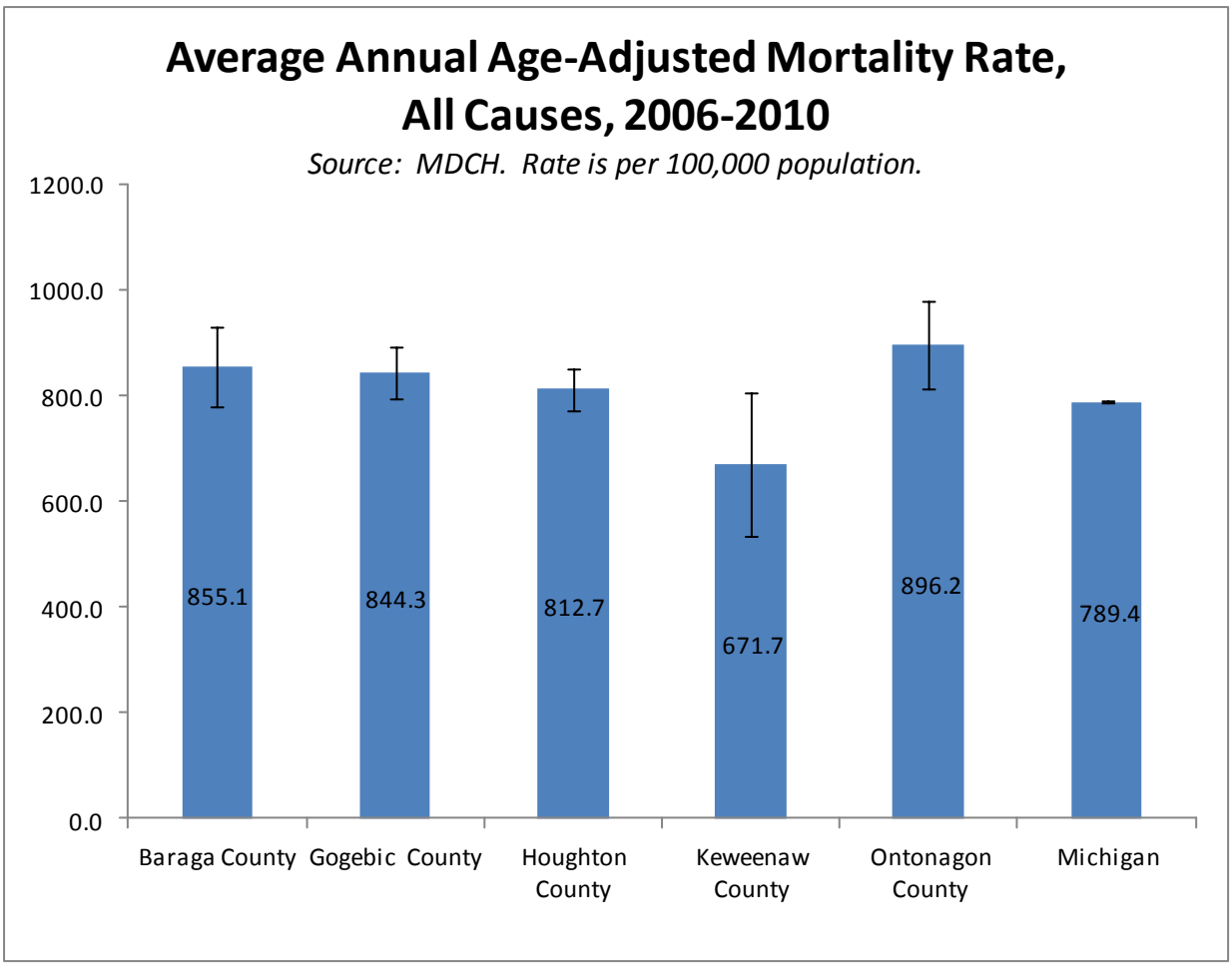


The graph below shows the trend in three-year moving averages of age-adjusted mortality rates per 100,000 population. Almost all diseases or health outcomes occur at different rates in different age groups. Most chronic diseases occur more often among older people. Other outcomes, such as many types of injuries, occur more often among younger people. The age distribution affects what the most common health problems in a community will be. Age adjustment is a statistical process applied to rates of disease, death, injuries or other health outcomes that allows communities with different age distributions to be compared.

The green line represents the counties served by the Western Upper Peninsula Health Department (Baraga, Gogebic, Houghton, Keweenaw and Ontonagon). The blue line represents the state of Michigan overall. The black vertical line signifies a change in the coding structure used to classify cause of death. Before 1999, deaths were classified with ICD-9 codes . Starting in 1999, deaths were classified using ICD-10 codes . This change in coding is inconsequential when mortality rates due to all causes in aggregate are considered. Between approximately 1989 and 2010, the annual age-adjusted mortality rate in Michigan has dropped by roughly 200 per 100,000 population. The Western Upper Peninsula region has generally kept pace with the state overall in terms of increased longevity.



The graph below portrays the average annual age-adjusted mortality rate between 2006 and 2010 for each of the five Western U.P. counties and the state overall. The black bars represent 95 percent confidence intervals. The absence of overlapping intervals indicates that Gogebic and Ontonagon counties very likely had higher age-adjusted mortality rates than the state overall between 2006 and 2010. Keweenaw County's rate was less than Ontonagon County's. No other conclusions can be drawn with statistical confidence about differing age-adjusted mortality rates between counties.

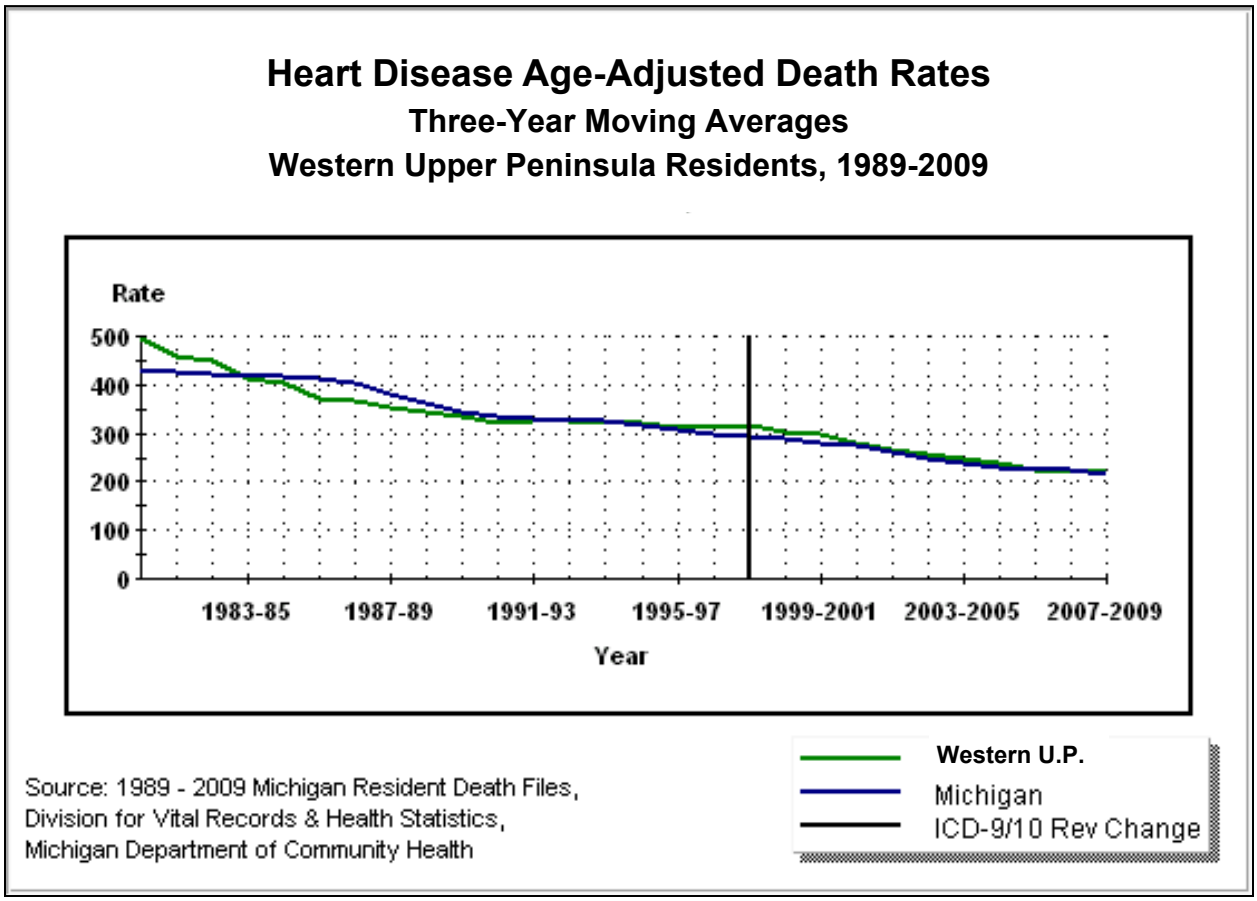


Heart Disease

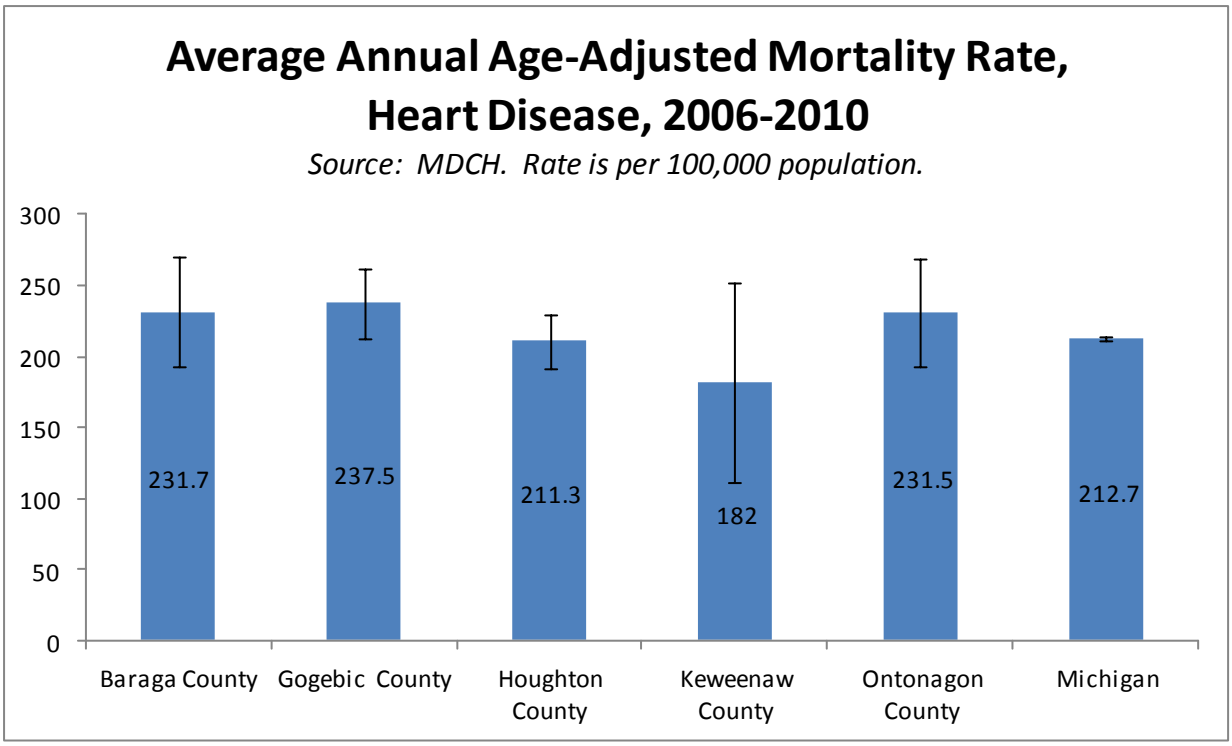
The term "heart disease" refers to several types of heart conditions. The most common type in the United States is coronary artery disease, which can cause heart attack, angina, heart failure, and arrhythmias. Heart failure is a condition that occurs when the heart can't pump enough blood to meet the body's needs. Consequently, fluid builds up in the lungs, liver, gastrointestinal tract, and the arms and legs. The only cure for heart failure is a heart transplant. However, heart failure can be managed with medications or medical procedures. High cholesterol, high blood pressure, tobacco use, physical inactivity, and poor nutrition are examples of modifiable risk factors that contribute to heart disease.

The graph below shows the trend in three-year moving averages of age-adjusted mortality rates due to heart disease per 100,00 population. The green line represents the counties served by the Western Upper Peninsula Health Department (Baraga, Gogebic, Houghton, Keweenaw and Ontonagon). The blue line represents the state of Michigan overall. The black vertical line signifies a change in the coding structure used to classify cause of death. Pre-1999 rates should not be compared with post-1999 rates, but within each of these timeframes significant improvement in the survivability of heart disease is apparent. This is due in part to advances in surgical interventions, rehabilitation regimens, and drug therapies, and considerable reductions over time in tobacco use rates.

Source:
http://www.cdc.gov/heartdisease/behavior.htm



The graph below gives the average annual age-adjusted mortality rate per 100,000 population due to heart disease between 2006 and 2010 for Baraga, Gogebic, Houghton, Keweenaw and Ontonagon counties as well as Michigan. The black bars indicate 95 percent confidence intervals. No claims regarding statistically significant differences in age-adjusted mortality rates among the regions under study can be made due to the overlap between each pair of confidence intervals. The overlap between green and blue lines on the previous graph suggest that this similarity in heart disease mortality rates between the Western U.P. and Michigan overall have existed for far longer.



Local Survey Findings: Cardiovascular Disease

- An estimated 3.7% of Western U.P. adults have been told by a doctor they had a heart attack, 6.8% have been told they had angina or coronary heart disease, and 2.6% have been told they had a stroke.
- The prevalence of heart attack, heart disease, and stroke increased with age.
- Men reported heart attack and heart disease at significantly higher rates than women in the Western U.P. (5.6% vs. 2.2% for heart attack and 11.3% vs. 3.2% for heart disease). These findings are consistent with state and national statistics.
- Among Western U.P. adults, an estimated 74.8% have ever had their cholesterol checked and 66.9% had their cholesterol checked within the past five years.
- Among those who ever had their cholesterol checked, 48.4% were ever told their cholesterol was high.

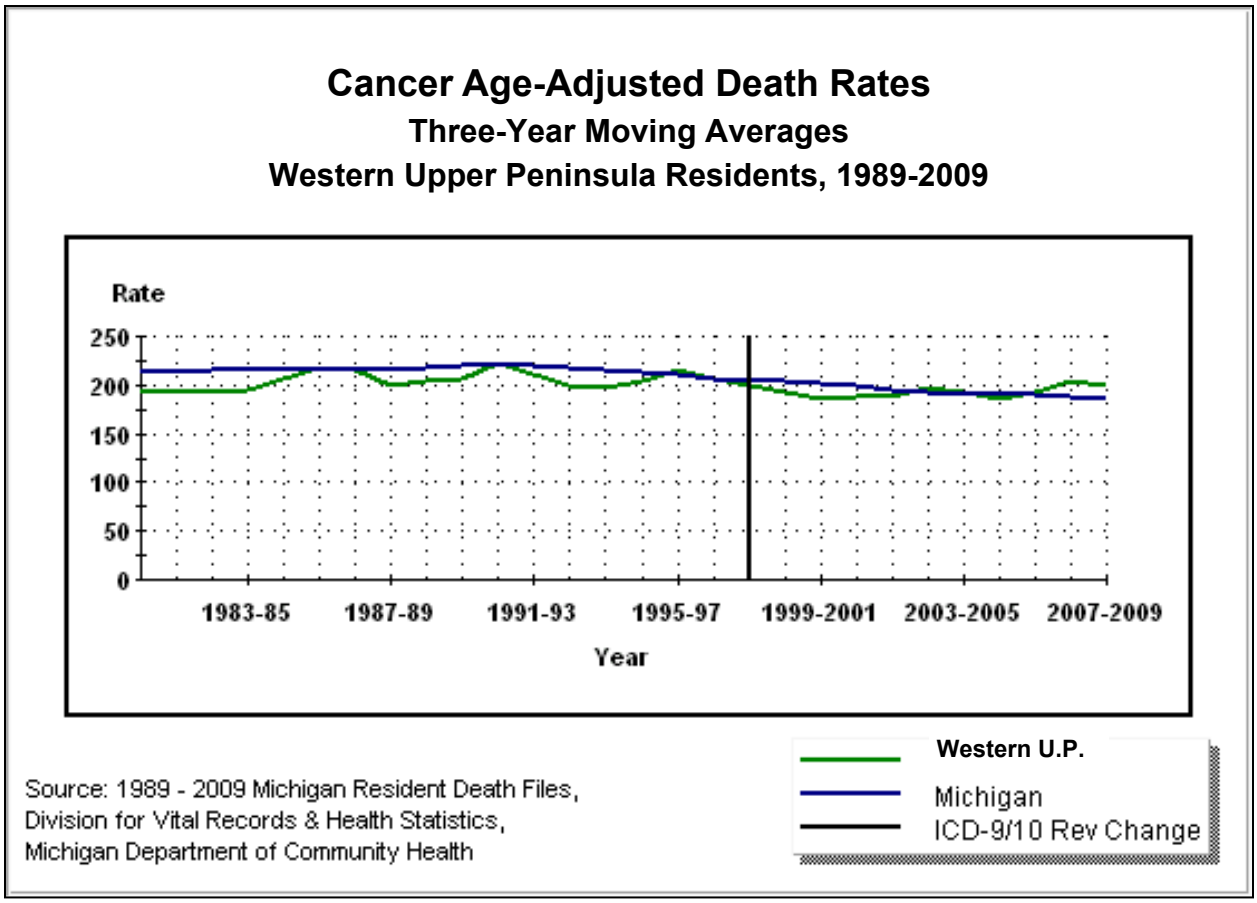
Local Survey Findings: Obesity and Behavioral Risk Factors

- An estimated 68.7% of Western U.P. adults are either obese or overweight.
- High rates of obesity and overweight are observed among both genders, and across all ages, incomes, and education levels.
- Roughly 1 in 7 Western U.P. adults reported no leisure time physical activity.
- No leisure time physical activity was more prevalent with increased age, and lower levels of education and income.
- Only half of Western U.P. adults who take part in leisure time physical activity report adequate levels of aerobic activity. Roughly 3 in 10 adults report adequate muscle strengthening activity.
- Roughly 20% of Western U.P. adults who take part in leisure time physical activity achieve recommended levels of both aerobic and strength conditioning.
- Adequate physical activity is more prevalent among those with higher levels of educational attainment.
- An estimated 88.5% of Western U.P. adults fail to consume fruits and/or vegetables at least five times daily.
- Men were significantly more likely than women to report inadequate fruit and vegetable consumption (93.5% vs. 84.3%).
- Only 5.3% of adults with household incomes below $25,000 indicated that their daily consumption of fruits and vegetables met the recommendation.

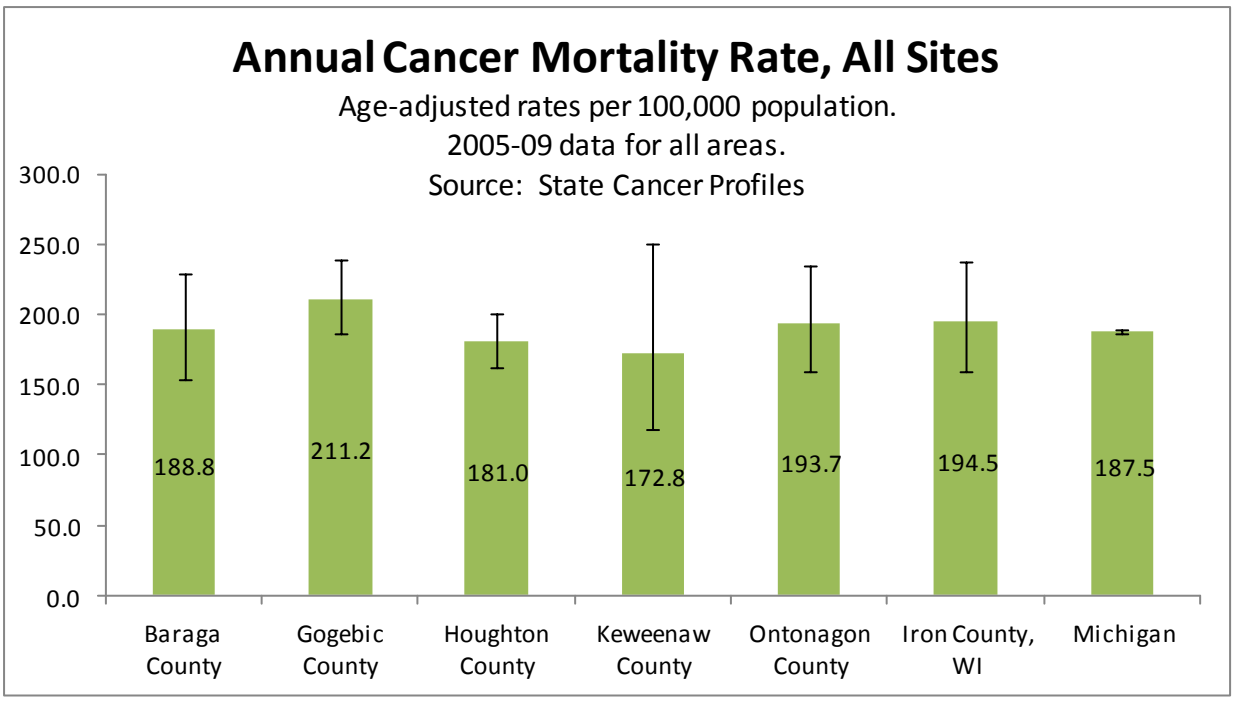
Cancer

The long-term trend in cancer mortality rates provides a stark contrast to the heart disease death rates just shown. Despite tremendous financial investments in cancer research, mortality rates show only modest decline. Improvements in therapies and survival rates have been largely offset by increases in incidence. One contributing factor to the increasing incidence rate is that as life expectancy increases, more people live to an age when cancer prevalence rises. Environmental causes are thought to be a second factor contributing to increased cancer incidence.

The graph below depicts a combined trend in three-year moving averages for age-adjusted death rates due to cancer for all five counties in the Western Upper Peninsula region. This trend appears in green. The blue line represents the same statistic for Michigan. The black vertical line marks a change in cause of death coding structure that occurred in 1999. Pre-1999 data should not be compared with post-1999 data. Focusing on the 1999-2001 average and later, a slight reduction in age-adjusted mortality rates due to cancer for the state overall is observed. For the Western U.P. region, no improvement is evident.



The graph below gives the average annual age-adjusted mortality rate per 100,000 population due to cancer between 2005 and 2009 for the six counties under study in this report compared to Michigan overall. The black bars indicate 95 percent confidence intervals. The consistently overlapping confidence intervals indicate that we cannot be confident that any differences in age-adjusted mortality rates due to cancer exist between these regions. The table below the graph gives the average annual number of deaths due to cancer in each county from 2005 to 2009, including a breakdown by primary cancer site.

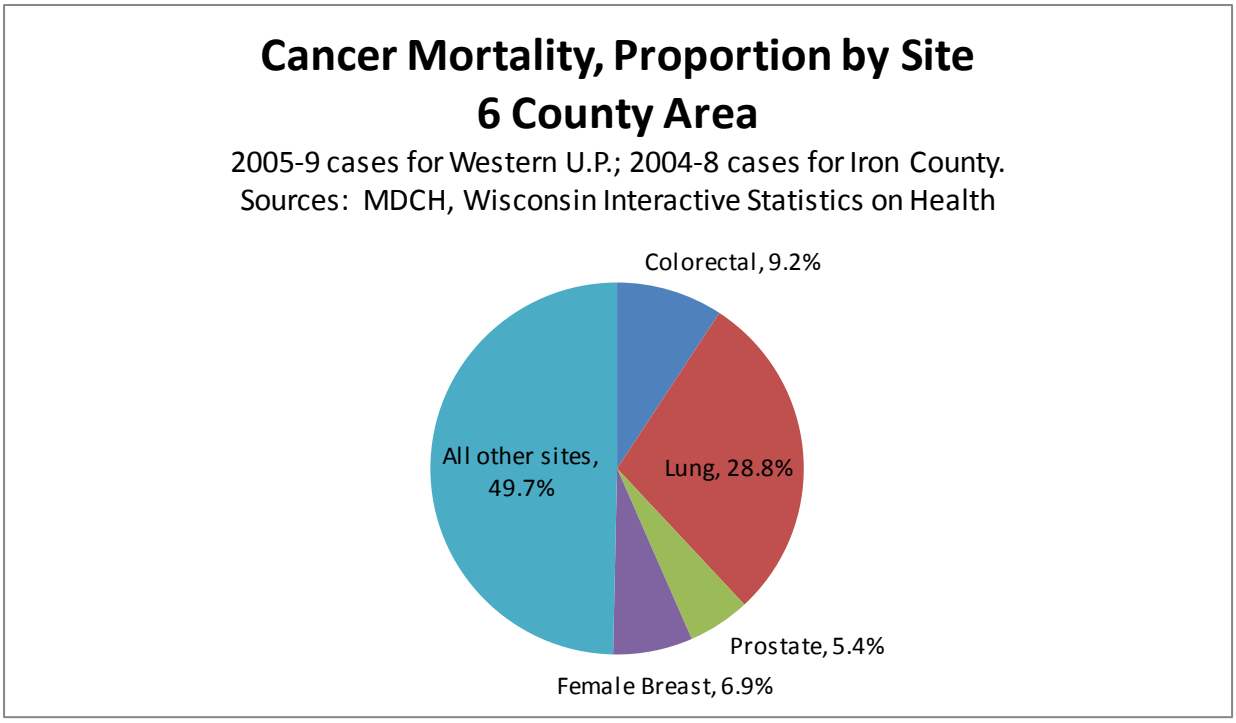


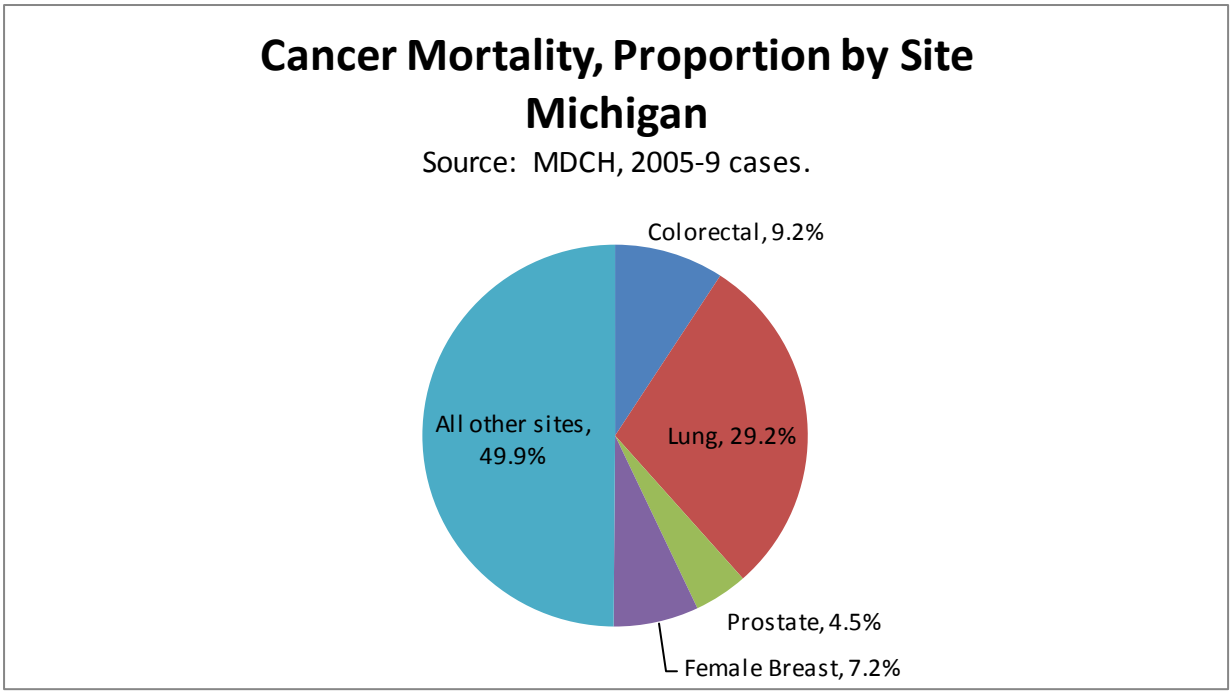
Average Number of Cancer Deaths Per Year, 2005-2009

	All Sites	Prostate	Lung and Bronchus	Colorectal	Female Breast
Baraga County	21	3 or fewer	7	3 or fewer	3 or fewer
Gogebic County	57	4	16	6	5
Houghton County	74	4	20	7	5
Keweenaw County	7	3 or fewer	3 or fewer	3 or fewer	3 or fewer
Ontonagon County	25	3 or fewer	8	3 or fewer	3 or fewer
Iron County, WI	22	3 or fewer	6	3 or fewer	3 or fewer

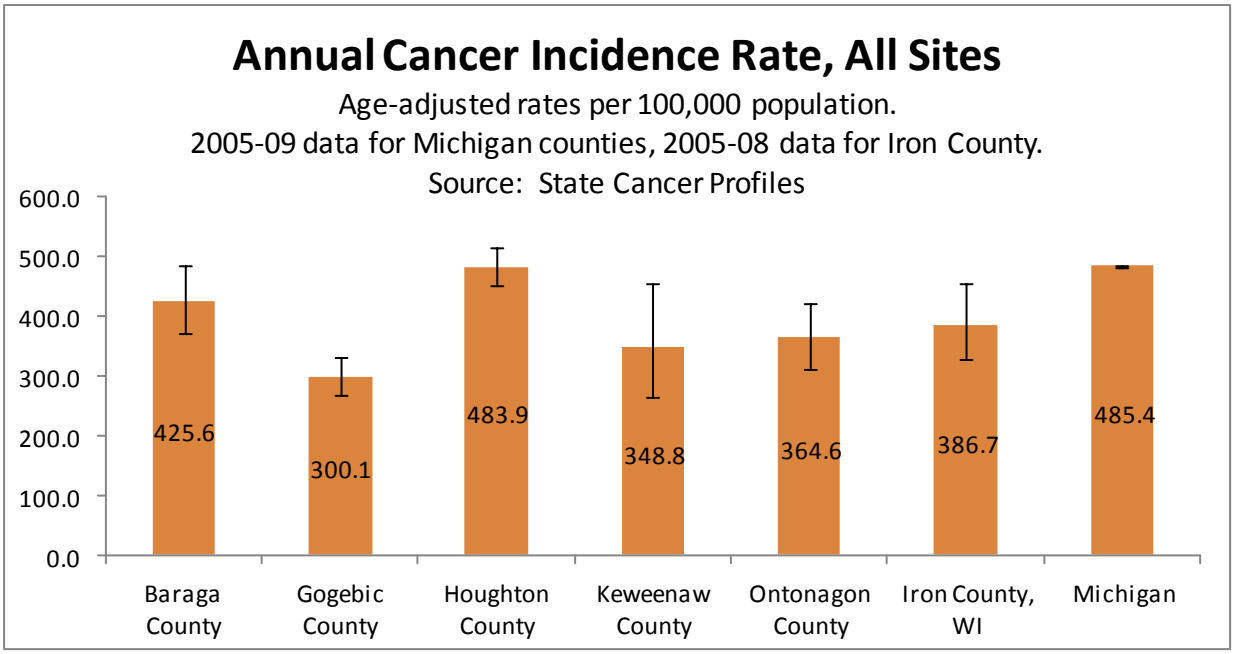
Source: State Cancer Profiles, http://www.statecancerprofiles.cancer.gov/index.html

The graphs on this page show the distribution of cancer deaths by primary site. The top graph is based on five years of data from Baraga, Gogebic, Houghton, Keweenaw, Ontonagon and Iron counties combined. The bottom graph is based on five years of data from Michigan overall. Two important observations may be made from these graphs: lung cancer claims the most lives among cancer types, and the distribution of cancer deaths by primary site is highly similar in the region and state.





The data on this page depict the rates of new cancer cases diagnosed each year. The graph gives the average annual age-adjusted cancer incidence rate per 100,000 population. The black bars indicate 95 percent confidence intervals. The data indicate that during the time interval studied, age-adjusted cancer incidence was lower in Gogebic, Keweenaw, Ontonagon, and Iron counties than in Michigan overall; Baraga County incidence was greater than Gogebic County incidence; and Houghton County incidence was greater than that in Gogebic and Ontonagon counties. The table below the graph gives the average annual number of new cases of cancer diagnosed each year, with a breakdown by site. On average, there about twice as many newly diagnosed cases of cancer per year as cancer deaths, because many cancers are survivable.



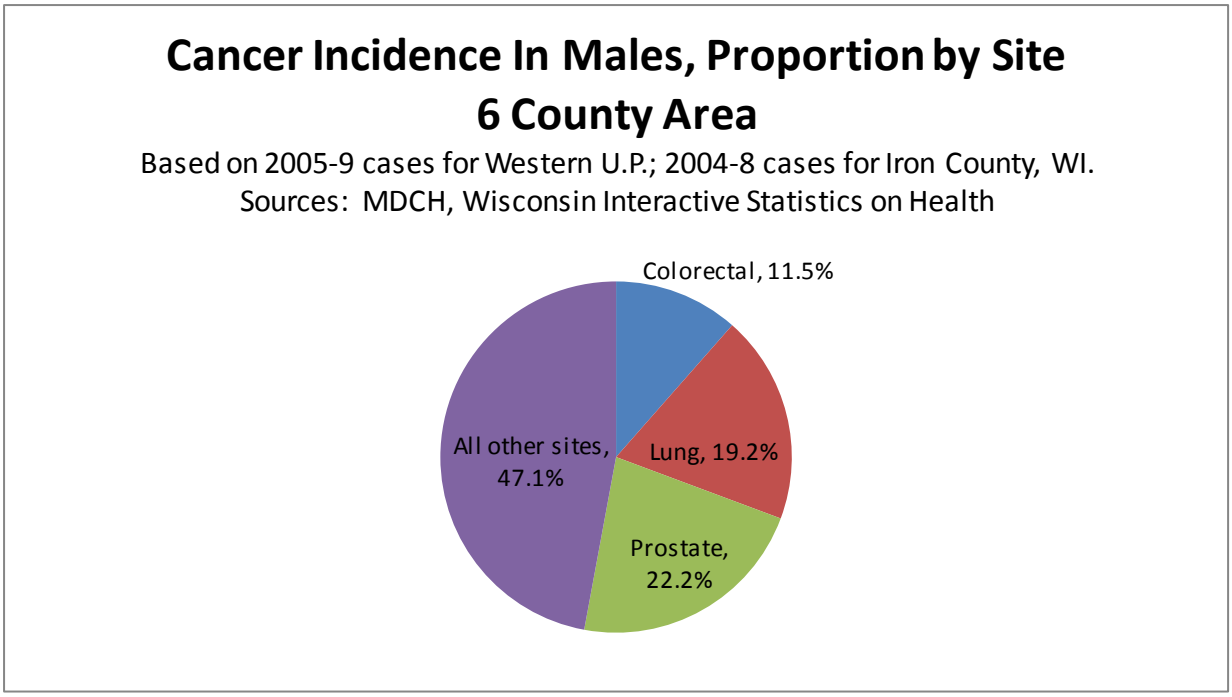
Average Number of New Cancer Cases Diagnosed Per Year

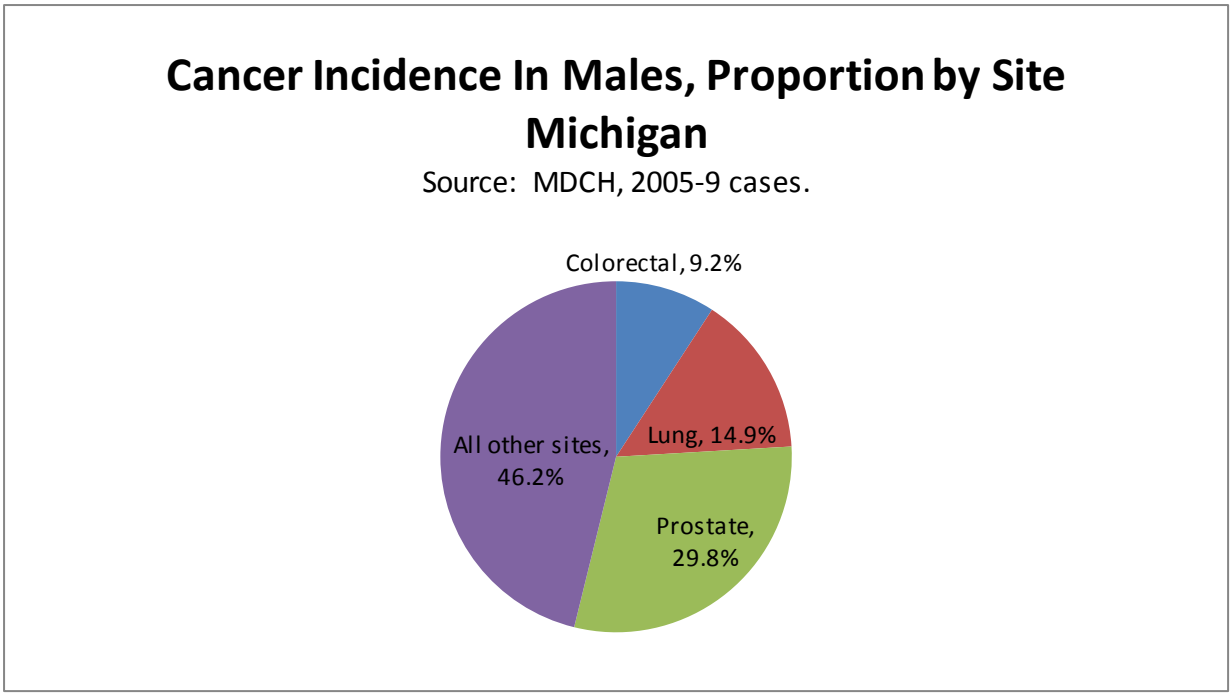
2005-09 for Michigan counties; 2005-08 for Iron County, Wisconsin

	All Sites	Prostate	Lung and Bronchus	Colorectal	Female Breast
Baraga County	47	5	10	4	6
Gogebic County	77	6	16	9	12
Houghton County	186	23	28	18	29
Keweenaw County	13	3 or fewer	3 or fewer	3 or fewer	3 or fewer
Ontonagon County	44	7	10	7	4
Iron County, WI	41	3 or fewer	10	6	5

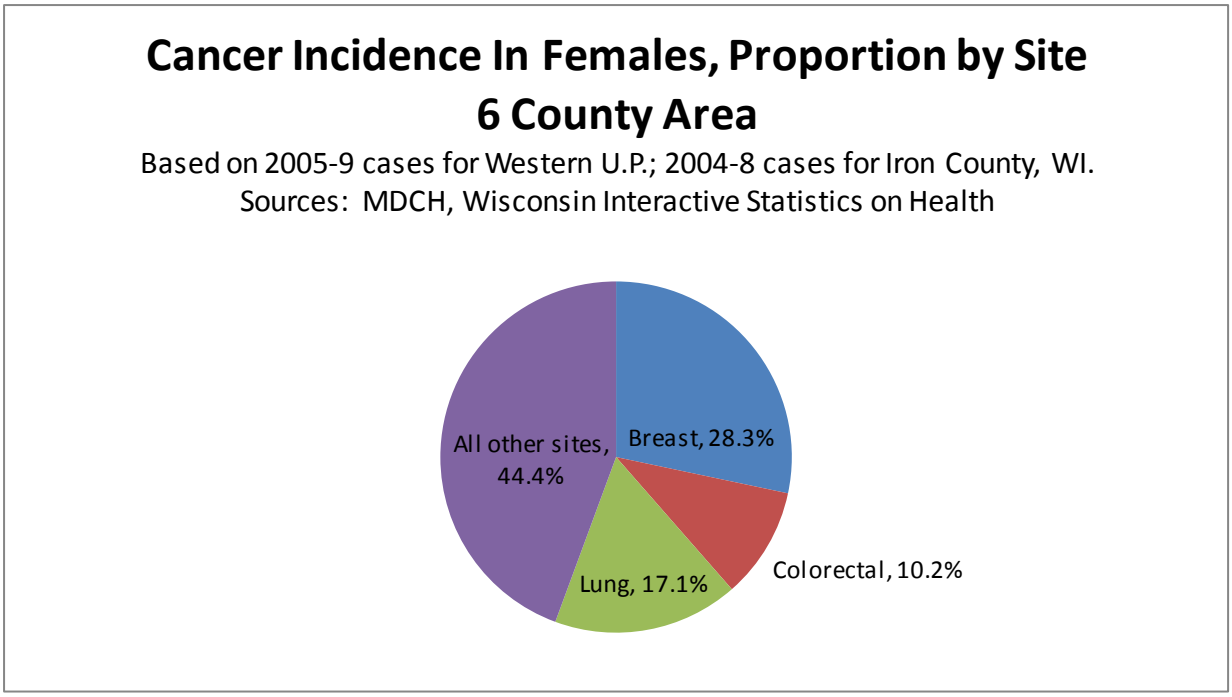
Source: State Cancer Profiles, http://www.statecancerprofiles.cancer.gov/index.html

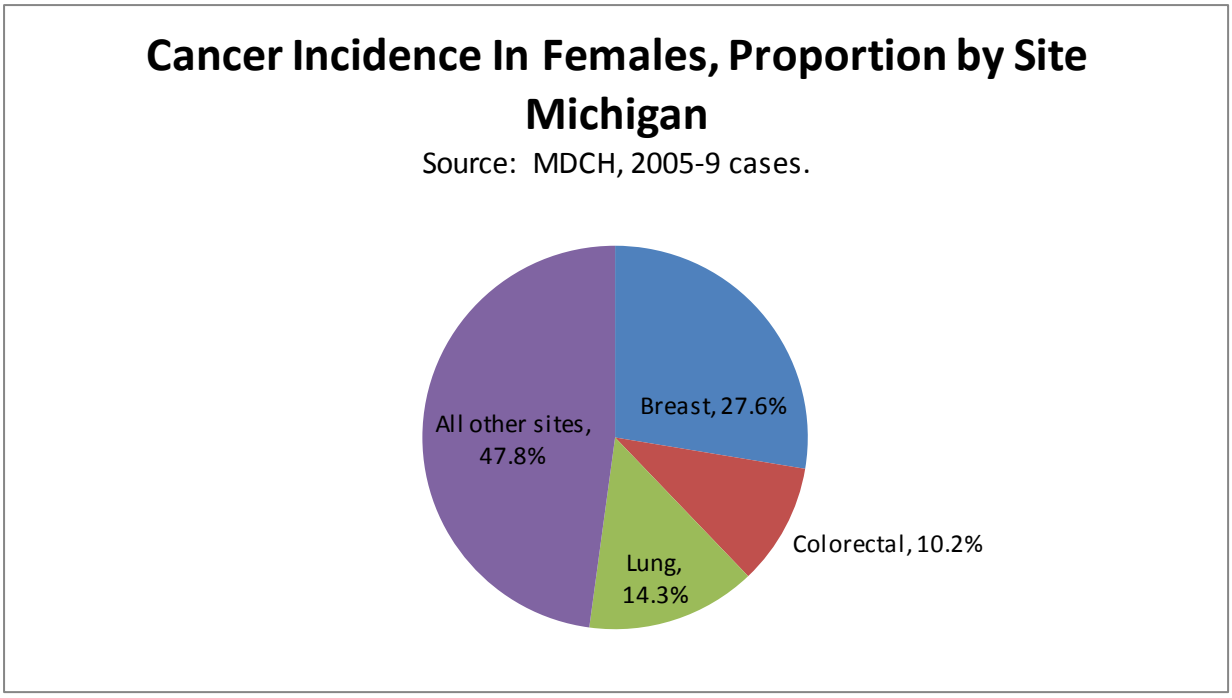
The graphs below show the distribution of new cancer cases in males by primary site. The top graph is based on five years of data from Baraga, Gogebic, Houghton, Keweenaw, Ontonagon and Iron counties combined. The bottom graph is based on five years of data from Michigan overall. Over the time period examined, a greater proportion of new cancer cases among males in the Western U.P. were classified as lung cancer than in Michigan overall. New cases of cancer located in the prostate comprised a smaller percentage of new cases among Western U.P. males than in Michigan overall.



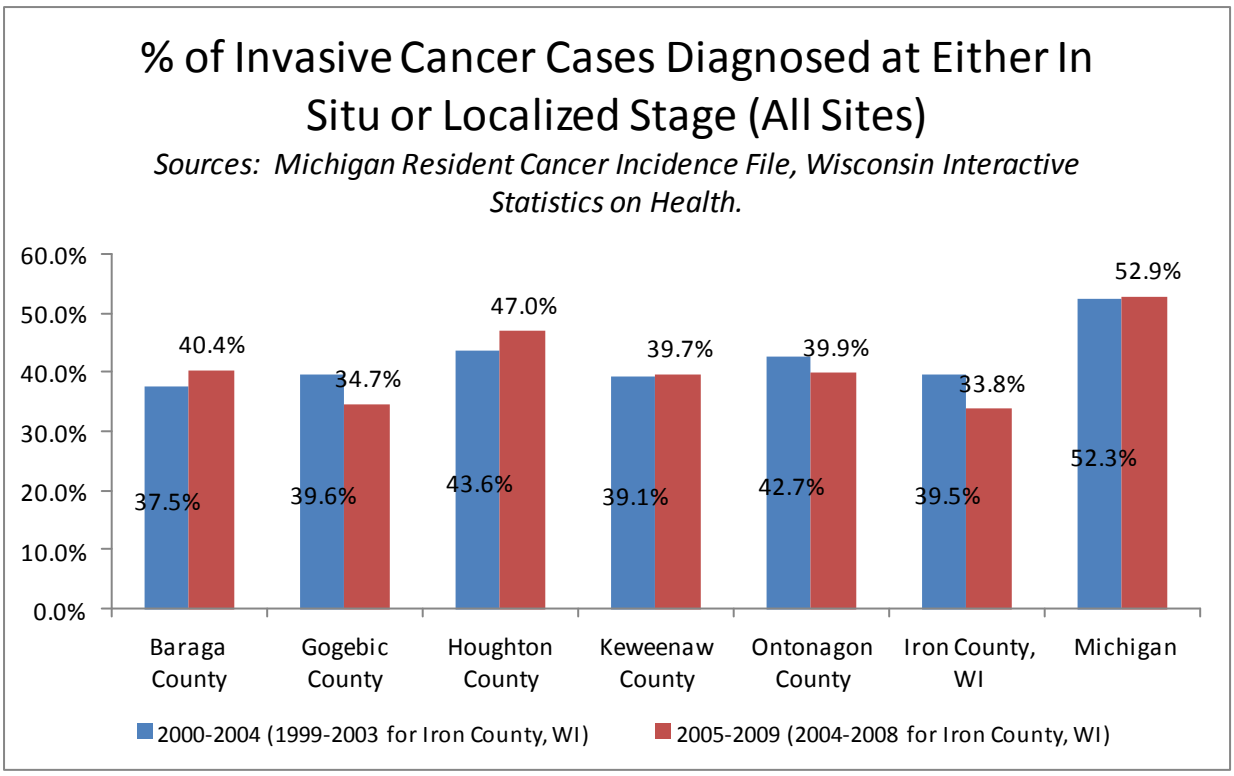


The graphs below show the distribution of new cancer cases in females by primary site. Similar to the graphs for males just presented, the top graph is based on five years of data from Baraga, Gogebic, Houghton, Keweenaw, Ontonagon and Iron counties combined. The bottom graph is based on five years of data from Michigan overall. Over this time period, a greater proportion of new cancer cases among females in the Western U.P. was classified as lung cancer than in Michigan overall. The proportions of new cases identified as breast and colorectal cancer among Western U.P. women were very similar to the proportions diagnosed in women across the state.





The final set of cancer data to be presented in this report appears below. This graph shows the percentage of invasive cancer cases diagnosed either at the *in-situ* or localized stage. The blue bars represent the percentage of cases diagnosed in these early stages from 2000 to 2004 (1999 to 2003 for Iron County, Wisconsin). The red bars represent the percentage of cases diagnosed in these early stages during the five years following. In all geographic areas, 10 to 20 percent of the cases in a given time period were not classified according to stage at diagnosis. Addition of these cases could alter the percentages shown.



Local Survey Findings: Cancer Prevalence

- Among Western U.P. adults, an estimated 11.6% have ever been told they had skin cancer or any other type of cancer. Rates of lifetime diagnosis were higher in Gogebic and Ontonagon counties.
- The likelihood of a cancer diagnosis increases with increasing age. The higher rates observed in Gogebic and Ontonagon counties are consistent with greater than 20% of the population of those counties being aged 65 or older as of the 2010 U.S. Census.

Local Survey Findings: Tobacco Use

- Over half of Western U.P. adults are current or former smokers (22.9% current; 29.8% former).
- Current smoking prevalence is highest among those with household incomes below $25,000, estimated to be 36.1%.
- In nearly every population subgroup, current smoking rates exceed the national Healthy People 2020 goal of 12.0 percent.
- Among current Western U.P. smokers, roughly half tried to quit smoking at least once in the past year.
- Smokeless tobacco use was more commonly reported among Western U.P. men than women (9.4% vs. 1.8%), a finding that is consistent with state and national data.

Early detection of cancer greatly increases the chances for successful treatment. Recognizing possible warning signs of cancer and taking prompt action leads to early diagnosis. Increased awareness of possible warning signs of cancer, among physicians, nurses and other health care providers as well as among the general public, can have a great impact on the disease. Aggressive screening, the use of simple tests across a healthy population in order to identify asymptomatic individuals who have disease, can increase early detection for some cancers. Examples of cancer screening procedures are mammography, Pap smears, and prostate-specific antigen (PSA) tests.

Source:
http://www.who.int/cancer/detection/en/

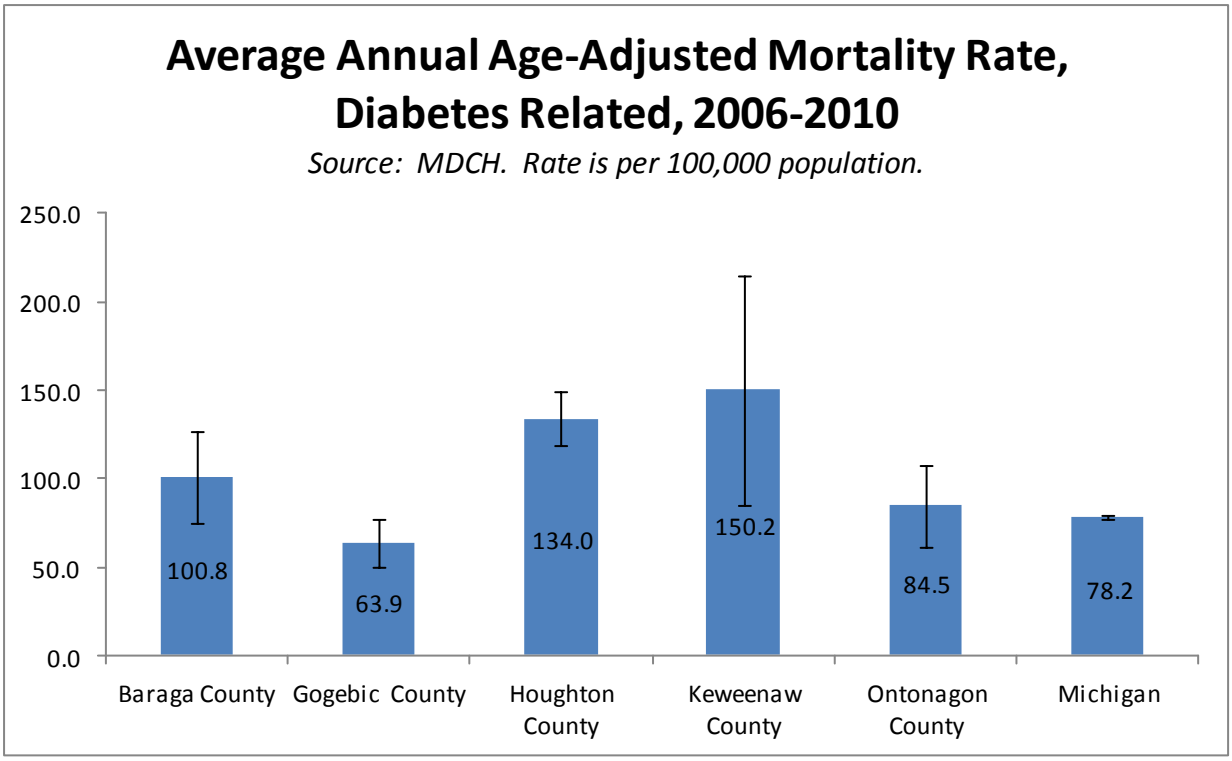
Local Survey Findings: Cancer Screening

- An estimated 95.1% of Western U.P. women aged 20 and older have had a clinical breast exam at some point in their lives, and 71.0% had their most recent exam within the recommended time interval.
- An estimated 89.8% of Western U.P. women aged 40 and older have ever had a mammogram. 53.1% had a mammogram in the last year. Women from households with incomes higher than $50,000 received mammograms at higher rates than women with household incomes less than $25,000.
- An estimated 95.3% of Western U.P. women have ever had a Pap test. 80.7% had their most recent Pap test within the last three years. The rate of appropriately-timed cervical cancer screening decreased with age, and increased with income.
- An estimated 79.5% of Western U.P. men aged 50 and older have ever had a PSA test to screen for prostate cancer. 54.4% had a PSA test within the past year. Men aged 65 and older were significantly more likely to have had a PSA test in the past year than those aged 50 to 64 (68.8% vs. 45.1%).
- An estimated 47.2% of Western U.P. adults over age 50 have ever had a blood stool test for colorectal cancer screening. Approximately 19% had one within the last two years.
- Roughly 62% of Western U.P. adults aged 50 and older have ever had a sigmoidoscopy or colonoscopy for colorectal cancer screening. Approximately 50% had either of these procedures within the past five years. Screening rates increased with age and income.

Additional Mortality Statistics

Diabetes

The data that make up the next graph are deaths that were classified with diabetes as either the underlying or related cause of death. Shown are the average annual age-adjusted mortality rates per 100,000 population due in some part to diabetes between 2006 and 2010 for Baraga, Gogebic, Houghton, Keweenaw and Ontonagon counties as well as Michigan. The black bars indicate 95 percent confidence intervals. Taking the confidence intervals into consideration, we can be confident that age-adjusted diabetes-related mortality rates were higher in Houghton and Keweenaw counties than in Michigan during the time period noted. Houghton County's rate is likely between two-thirds higher and twice as high as the state rate. Houghton County age-adjusted rates were also higher than those observed in Gogebic and Ontonagon counties.



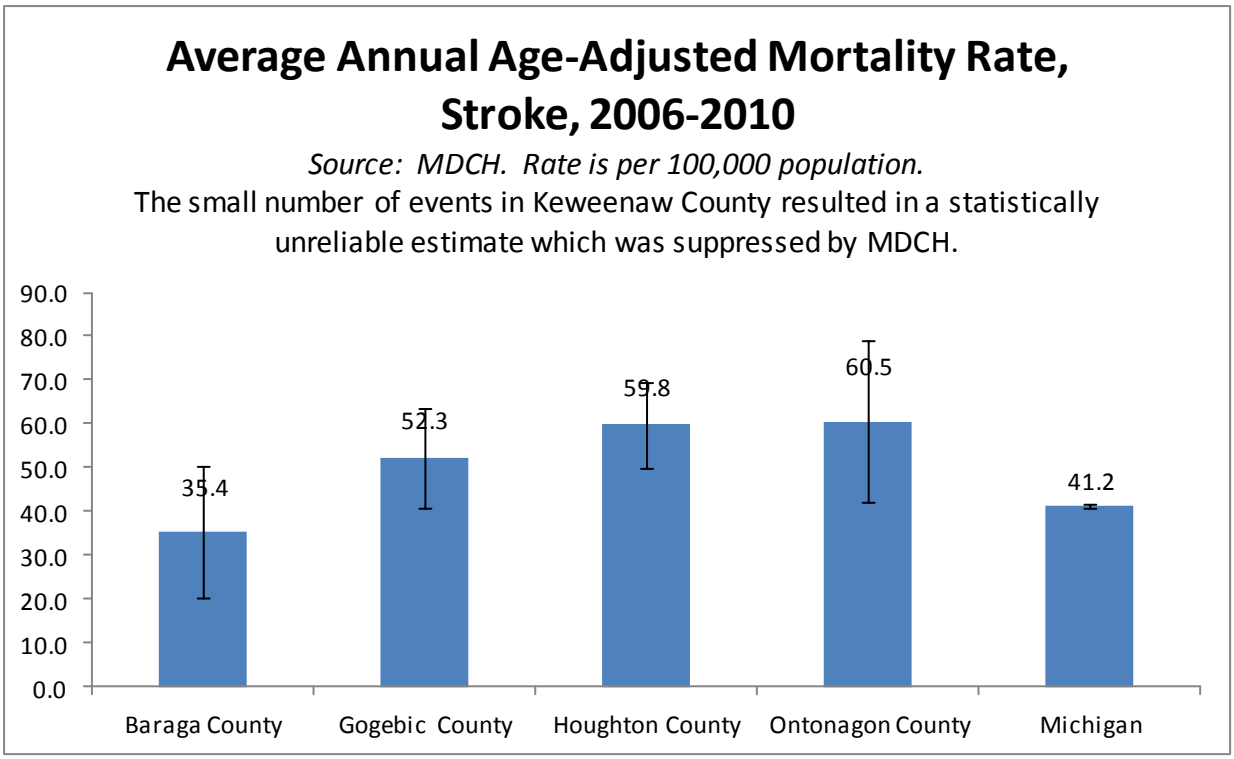
Local Survey Findings: Diabetes Prevalence

- Approximately 10% of Western U.P. adults have ever been told by a doctor that they had diabetes.
- Lifetime diabetes prevalence in the region was estimated to be 2.3% among adults aged 18 to 39, compared to 21.8% among adults aged 65 and older. This pattern of increasing prevalence with age is also observed in state and national data.

Stroke

Stroke is a leading cause of long-term, severe disability and is the fourth leading cause of death in the U.S. and Michigan. High blood pressure is a major risk factor for stroke. Controlling high blood pressure can reduce the risk of stroke up to 40 percent. Shown in the following graph are the average annual age-adjusted mortality rates per 100,000 population due to stroke between 2006 and 2010 for Baraga, Gogebic, Houghton and Ontonagon counties as well as Michigan. Once again the black bars indicate 95 percent confidence intervals. These data indicate a higher mortality rate due to stroke in Houghton and Ontonagon counties between 2006 and 2010 than in Michigan overall.

Source:
Michigan Department of Community Health, 2011 Stroke Brief



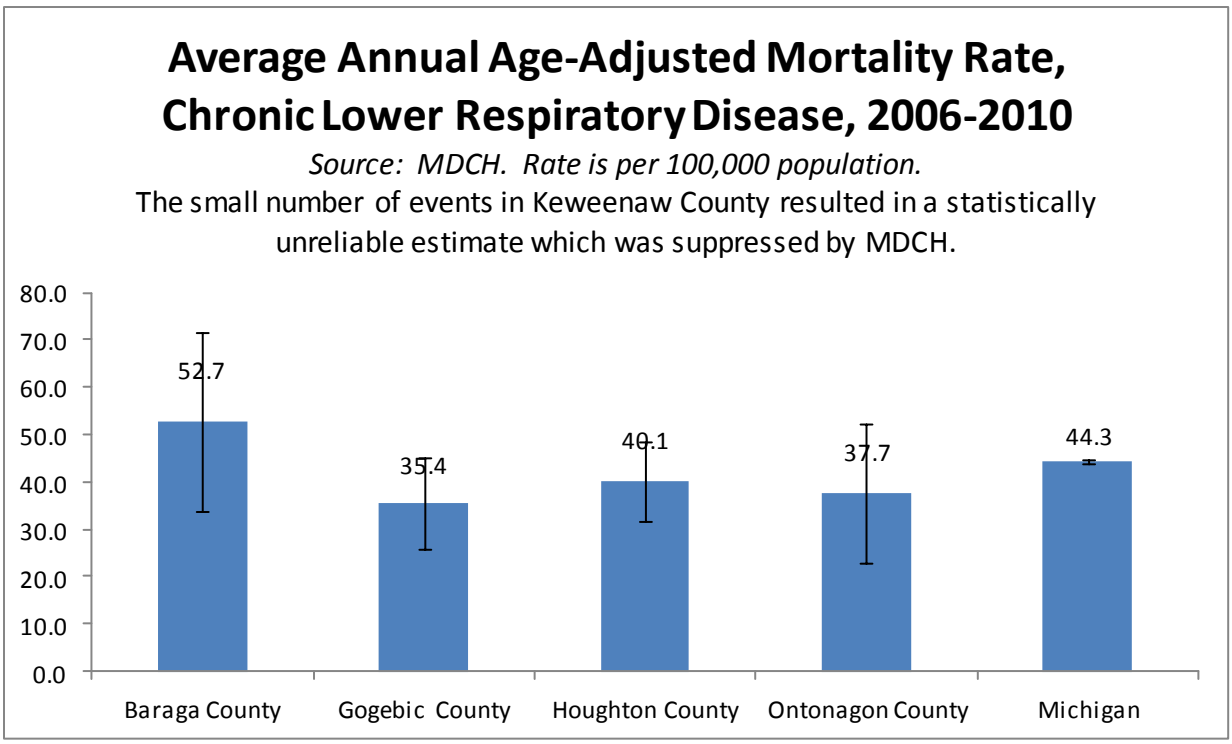
Local Survey Findings: Hypertension Prevalence

- An estimated 34.5% of Western U.P. adults have ever been told by a doctor that they had high blood pressure.
- Among those adults ever told they had high blood pressure, an estimated 75.2% are currently taking medication to control the condition.
- Significant differences in high blood pressure diagnosis rates were observed across age groups: 11.5% among 18 to 39 year olds, 42.2% among 40 to 64 year olds, and 63.9% among adults aged 65 and older.

Chronic Lower Respiratory Disease

Chronic obstructive pulmonary disease (COPD) is one of the most common lung diseases. COPD makes it difficult to breathe. There are two main forms of COPD: chronic bronchitis, which involves chronic inflammation of the lungs, and emphysema, which involves destruction of the lungs over time. Smoking is the leading cause of COPD. The graph below illustrates the average annual age-adjusted mortality rate per 100,000 population due to chronic lower respiratory disease between 2006 and 2010 for Baraga, Gogebic, Houghton, and Ontonagon counties as well as Michigan. As before, the black bars indicate 95 percent confidence intervals. From these data it is not evident that statistically significant differences in age-adjusted mortality rates due to chronic lower respiratory disease exist among the regions under study.

Source:
http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001153/



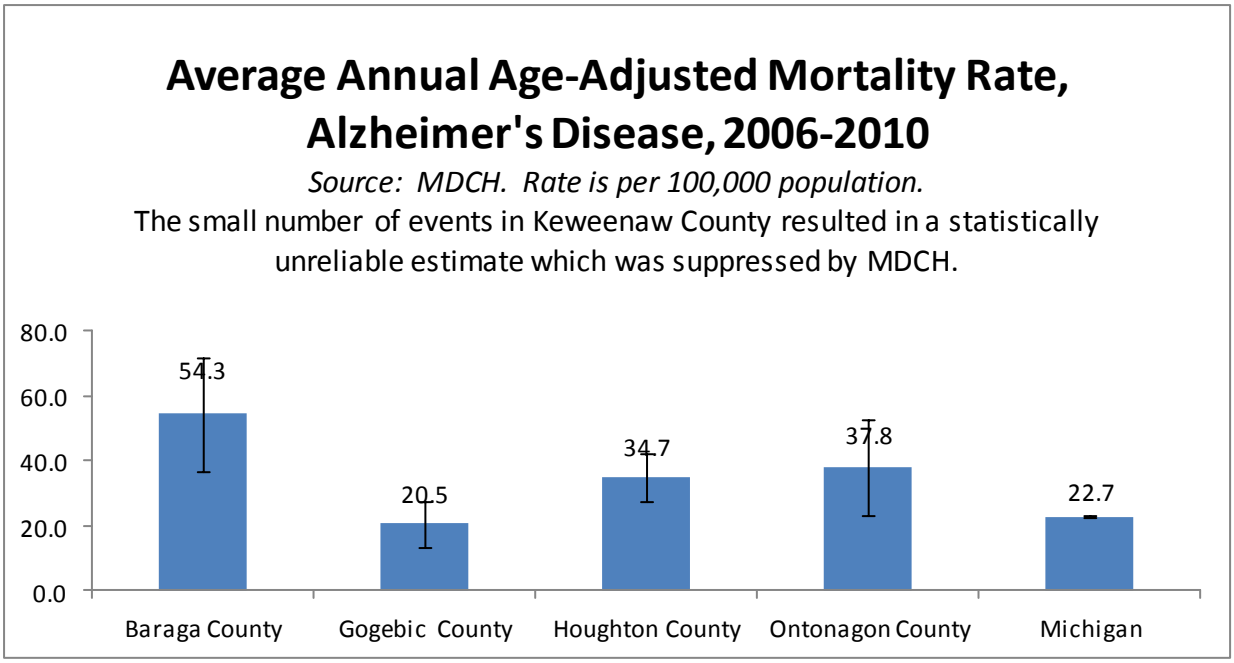
Local Survey Findings: Chronic Respiratory Diseases

Both asthma and chronic obstructive pulmonary disease (COPD) are considered chronic lower respiratory diseases.

- Among Western U.P. adults, an estimated 15.1% had ever been told by a health care professional they had asthma.
- An estimated 8.4% of Western U.P. adults currently have asthma.
- Approximately 7.2% of Western U.P. adults have ever been told by a doctor that they had COPD. 2.6% of adults aged 18 to 39 years reported this diagnosis, compared to 12.6% of adults aged 65 and older.

Alzheimer's Disease

Shown in the final graph in this series of mortality statistics are the average annual age-adjusted mortality rates per 100,000 population due to Alzheimer's disease between 2006 and 2010 for Baraga, Gogebic, Houghton and Ontonagon counties as well as Michigan. The confidence intervals shown are 95 percent confidence intervals. These data indicate a higher age-adjusted mortality rate reported due to Alzheimer's disease in Baraga, Houghton, and Ontonagon counties between 2006 and 2010 than in Michigan overall. The rate in Baraga County was higher than in Gogebic County. Beyond that, no statistically significant differences between Western U.P. counties are observable.



Local Survey Findings: Kidney Disease

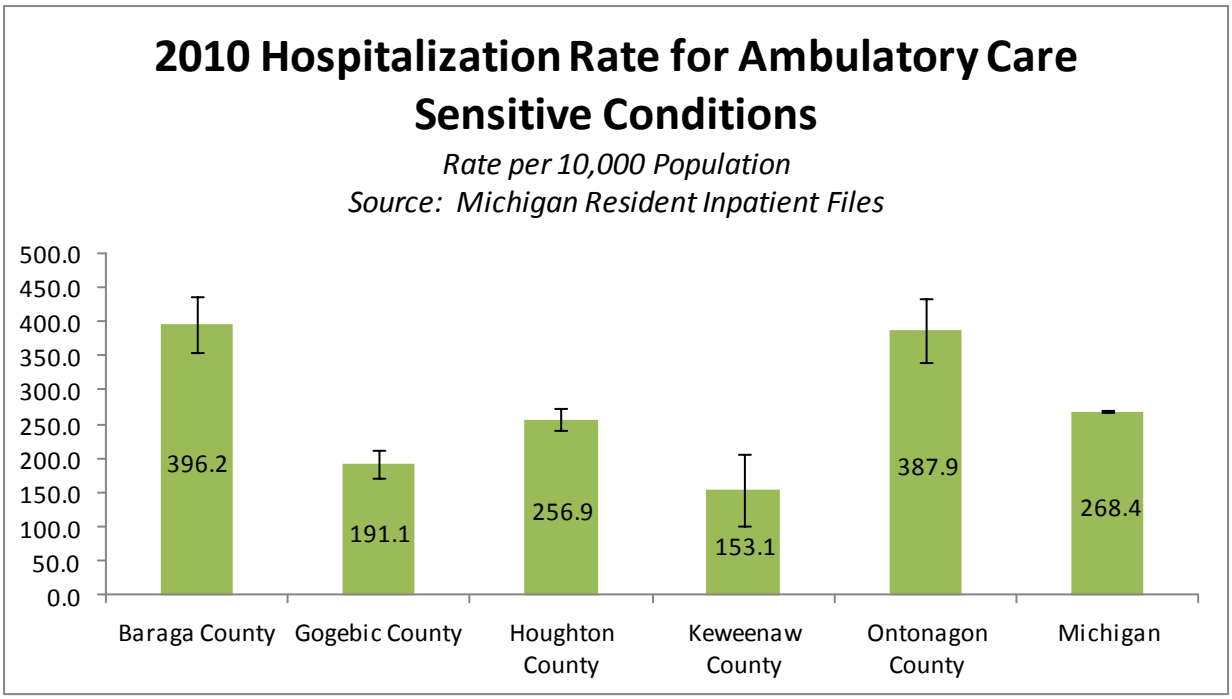
- An estimated 2.3% of Western U.P. adults have been diagnosed with kidney disease.
- Estimates of kidney disease prevalence increase markedly with age, from less than 1% among adults aged 18 to 39 to 6.8% among Western U.P. adults aged 65 and older.

Hospitalization Rates for Select Conditions

Ambulatory Care Sensitive (ACS) conditions such as asthma, diabetes or dehydration are potentially hospitalization conditions where timely and effective ambulatory care can decrease hospitalizations by preventing the onset of an illness or medical problem, controlling an acute episode of an illness or managing a chronic disease. The data in the graph below reflect the rates at which Western U.P. residents were hospitalized for ACS conditions in 2010. These are crude rates per 10,000 population with no age adjustment. The confidence intervals shown are 95 percent confidence intervals. The data indicate that Baraga County and Ontonagon County residents were more likely to be hospitalized for ACS conditions in 2010 than residents of Gogebic, Houghton, and Keweenaw counties. ACS hospitalization rates for Baraga and Ontonagon county residents also exceeded the rate for Michigan residents overall. Residents of Gogebic and Keweenaw counties had the lowest ACS hospitalization rates in the region, lower than Houghton County and Michigan overall. The 2010 rate for Iron County, Wisconsin was 83 per 10,000 population. No confidence interval was given.

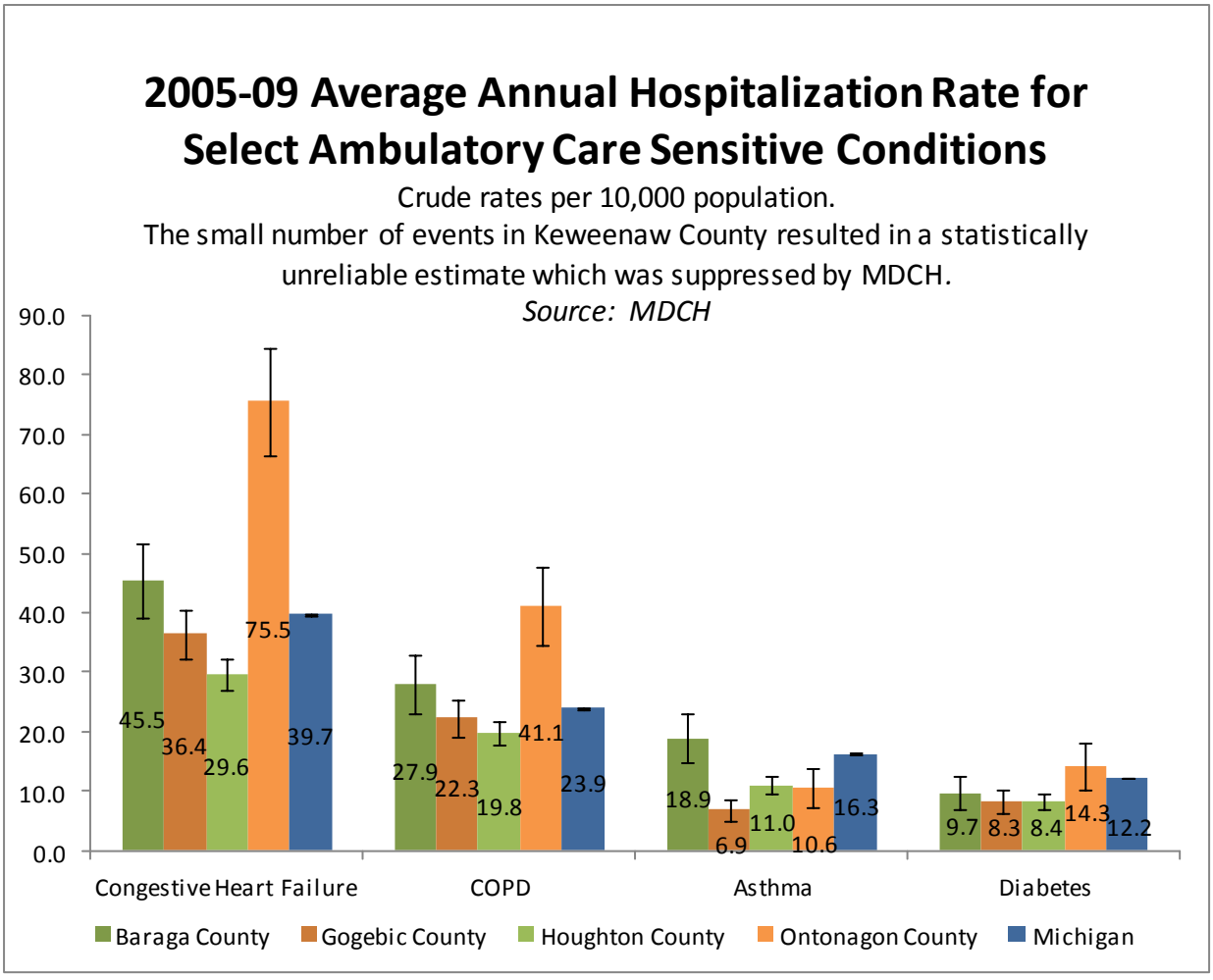
High rates of ACS hospitalizations in a community may be an indicator of a lack of or failure of prevention efforts, a primary care resource shortage, failure in primary health care delivery, high rates of uninsured or underinsured who do not have coverage for routine and preventive care, or other factors that create barriers to obtaining timely and effective care.

Source:
Wisconsin Interactive Statistics on Health, Iron County Public Health Profile

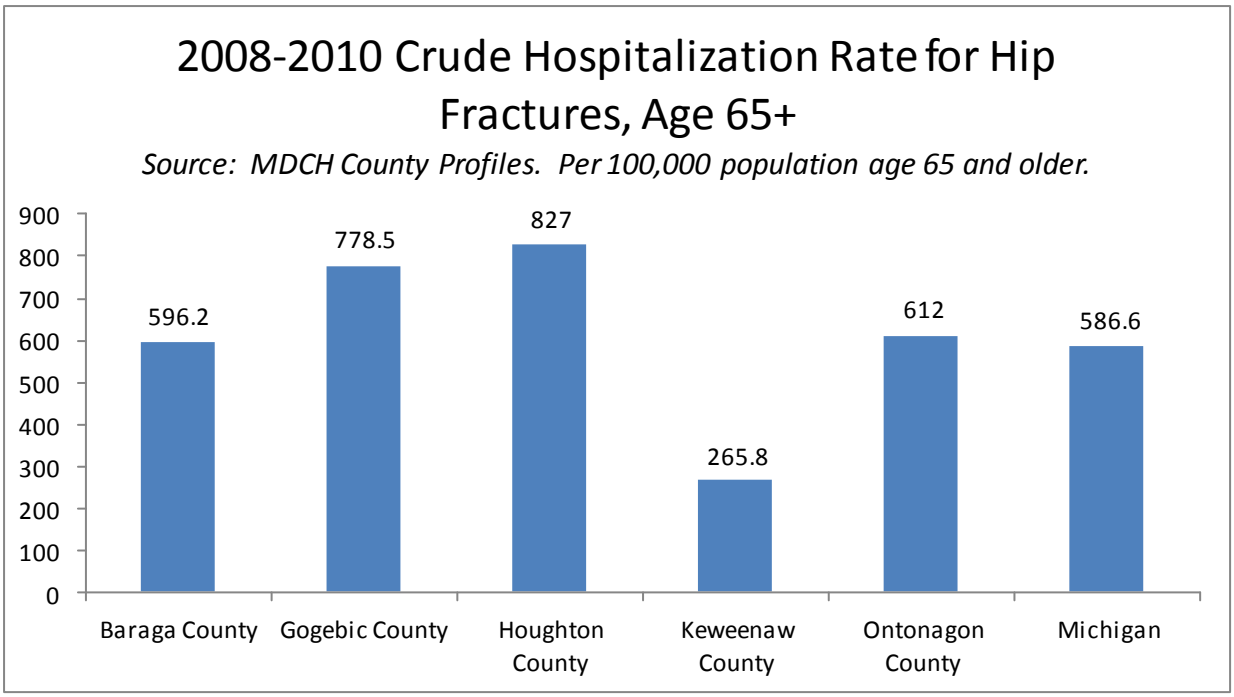


The next graph provides a more detailed look at the types of Ambulatory Care Sensitive (ACS) conditions that often require hospitalization. Average annual crude rates per 10,000 population are given for Baraga, Gogebic, Houghton, and Ontonagon counties and Michigan. The data originate from hospital admissions between 2005 and 2009. Among the conditions listed, congestive heart failure prompts more hospitalizations than any other. Ontonagon County residents were much more likely to be hospitalized for heart failure related issues than residents of the other Western U.P. counties or the state overall. Baraga County residents were more likely to be hospitalized for heart failure related symptoms than Houghton County residents. Houghton County residents were less likely than Michigan residents overall to be hospitalized for congestive heart failure. Because these are crude rates, not age-adjusted as many other rates in this report, they have not been weighted based on age distribution. Thus higher rates in Ontonagon County would be expected because of its older population.

Hospitalization for COPD exhibits the same pattern across counties that heart failure exhibits. Asthma hospitalization rates were lower in all Western U.P. counties than in Michigan overall, with the possible exception of Baraga County. Hospitalization for diabetes was less common in Gogebic and Houghton counties than in Michigan overall. In 2010, six cases of asthma in Baraga County residents under age 18 required hospitalization. This was the highest caseload of any of the five Western U.P. counties for children under 18 being hospitalized for asthma. Iron County rates were not available.



The graph below shows the hospitalization rates for hip fractures among persons age 65 and older between 2008 and 2010. These are crude rates and have not been adjusted for age. It is common to use crude rates for comparison when a specific age group is the focus of study. The data indicate that hospitalization for hip fracture was more common in Gogebic and Houghton counties than in the state overall during the time period investigated. Keweenaw County's calculated rate is very low, but that is partially an artifact of the small numbers involved in the rate calculation. An average of one fracture per year between 2008 and 2010 resulted in the rate shown. A second annual fracture would have doubled the rate, bringing it closer to the state average. Confidence intervals were not available for these data.



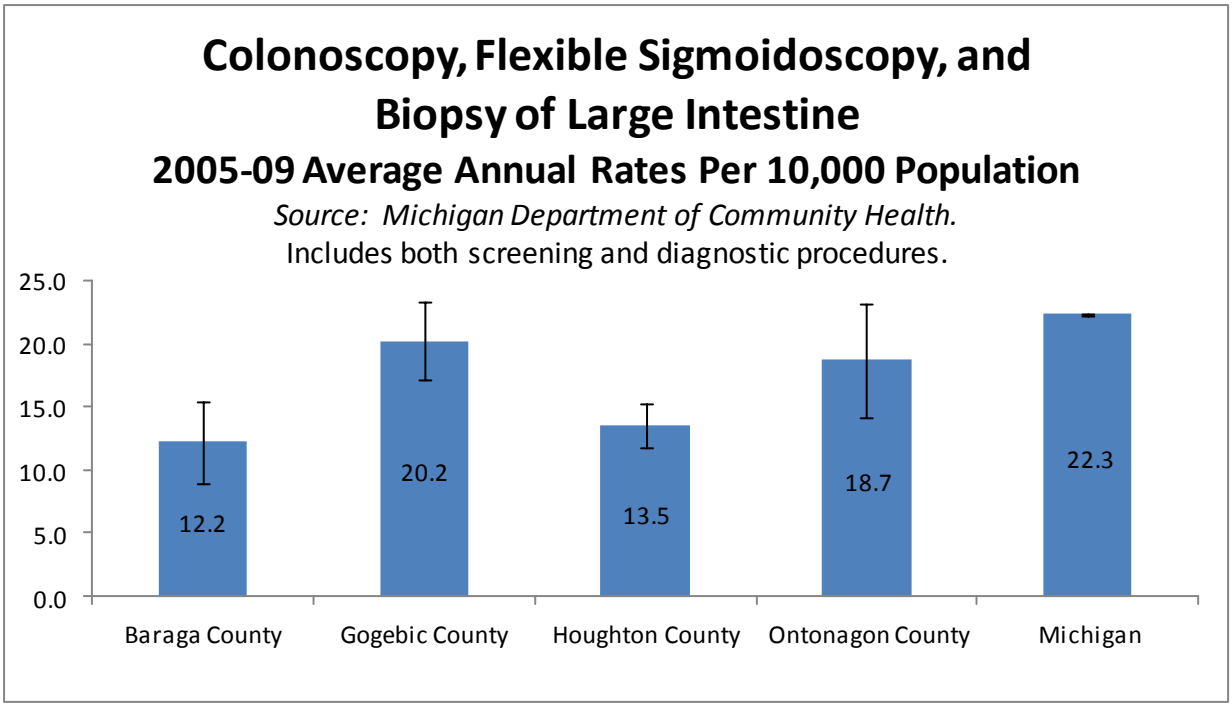
Local Survey Findings: Arthritis Prevalence

- Over a third of Western U.P. adults, and an estimated 60.7% of those aged 65 and older, have ever been told by a doctor they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.
- Among those with doctor-diagnosed arthritis, an estimated 54.1% reported that their usual activities were limited by this condition. Those adults with household incomes of $50,000 or more who are diagnosed with arthritis were less likely to be limited in their usual activities by arthritis (38.1%).

Chronic Disease Screening Activities

Many chronic disease are better controlled and treated when diagnosed early. Colonoscopy, sigmoidoscopy, and fecal occult blood screening are procedures used to find colorectal cancer in both men and women. Mammograms aid in the detection of breast cancer. Pap tests do the same for cervical cancer. The following series of graphs and tables show the rates at which Western U.P. residents are accessing these and other preventive health services.

The graph below shows the average number of colonoscopy, flexible sigmoidoscopy, and biopsy of the large intestine procedures performed per 10,000 population annually between 2005 and 2009. These rates are not adjusted for the age distribution of the population. People who do not have symptoms and have no family history of colorectal cancer should begin screening at age 50. Black bars represent 95 percent confidence intervals. The data show that these procedures were performed less frequently in Baraga and Houghton counties than in Gogebic County and across the state overall. The difference in rates compared to Gogebic County is not surprising given the larger proportion of older residents in that county, but the significant difference in rates between Baraga and Houghton counties and the state overall could indicate inadequate screening rates among Baraga County and Houghton County adults. Rates were not available for Keweenaw and Iron counties.



Local Survey Findings: Colorectal Cancer Screening

- An estimated 47.2% of Western U.P. adults over age 50 have ever had a blood stool test for colorectal cancer screening. Approximately 19% had one within the last two years.
- Roughly 62% of Western U.P. adults aged 50 and older have ever had a sigmoidoscopy or colonoscopy for colorectal cancer screening. Approximately 50% had either of these procedures within the past five years. Screening rates increased with age and income.

Cervical and Breast Cancer Screening

Of all the gynecologic cancers, only cervical cancer has a screening test—the Pap test—that can find this cancer early, when treatment can be most effective. The Pap test also helps prevent cervical cancer by finding precancers, which are cell changes on the cervix that might become cervical cancer if they are not treated appropriately. An abnormal Pap test result means that cell changes were found on the cervix. These abnormal changes are often caused by HPV, human papillomavirus. The changes may be minor or serious. Generally, minor changes will revert to normal over time without intervention. More serious changes can turn into cancer if they are not removed. Two vaccines are available to prevent the HPV types that cause most cervical cancers. These vaccines are bivalent vaccine (Cervarix) and quadrivalent vaccine (Gardasil). HPV vaccination is recommended with either vaccine for 11 and 12 year old girls. It is also recommended for girls and women age 13 through 26 years of age who have not yet been vaccinated or completed the vaccine series.

A sample of approximately 12,000 Pap test results from Western U.P. women between 2009 and 2011 had an abnormal result rate of roughly 10 percent.

Mammography has been demonstrated to reduce breast cancer mortality by detecting breast cancer early, when treatment is most effective. In 2002, the U.S. Preventive Services Task Force (USPSTF) recommended screening mammography, with or without a clinical breast exam, every 1–2 years for women aged ≥40 years. In November 2009, USPSTF changed its breast cancer screening recommendations to biennial mammography for women aged 50–74 years and stated that women aged 40–49 years do not need to be screened routinely. However, the Patient Protection and Affordable Care Act of 2010 specifically designates coverage of the breast cancer screening according to the recommendations issued before November 2009.

Sources:
http://www.cdc.gov/cancer/gynecologic/basic_info/prevention.htm
http://www.cdc.gov/std/hpv/pap/default.htm#sec4
http://www.cdc.gov/std/hpv/STDFact-HPV-vaccine-young-women.htm
http://www.cdc.gov/mmwr/preview/mmwrhtml/00021940.htm
http://www.cdc.gov/mmwr/preview/mmwrhtml/su6102a8.htm

Local Survey Findings: Women's Health Screenings

- An estimated 95.1% of Western U.P. women aged 20 and older have had a clinical breast exam at some point in their lives, and 71.0% had their most recent exam within the recommended time interval.
- An estimated 89.8% of Western U.P. women aged 40 and older have ever had a mammogram. 53.1% had a mammogram in the last year. Women from households with incomes higher than $50,000 received mammograms at higher rates than women with household incomes less than $25,000.
- An estimated 95.3% of Western U.P. women have ever had a Pap test. 80.7% had their most recent Pap test within the last three years. The rate of appropriately-timed cervical cancer screening decreased with age, and increased with income.

Upper Peninsula Health Plan (UPHP) is the Medicaid health care benefit administrator for the entire Upper Peninsula. These tables summarize the extent to which Western U.P. women enrolled in Medicaid received Pap tests and mammograms at recommended frequencies between 2009 and 2011. Considering the five counties of the Western U.P. in aggregate, Pap test rates lagged behind testing rates across the entire Upper Peninsula Medicaid population (67.2 percent compared to 72.0 percent). Rates within individual counties, which appear in the cells shaded yellow, were lowest in Keweenaw County (45.5 percent) followed by Baraga County (56.8 percent). Mammography among Western U.P. females enrolled in Medicaid also occurs less frequently than it does within the entire Upper Peninsula Medicaid-enrolled female population (51.7 percent compared to 55.5 percent). Fewer than half of the Medicaid-enrolled women between the ages of 40 and 69 in Baraga, Houghton, and Keweenaw counties received a mammogram in either 2011 or 2010.

% of women ages 21 to 64 years continuously enrolled in UPHP Medicaid who received a Pap test in either 2011 or 2010 or 2009.

	Received Exams in **2009, 2010, or 2011	By County **2011 Denominator	By County 2011 % Received	Aggregate W-UP HEDIS 2012	***UPHP UP Region-wide HEDIS 2012 Results:
Baraga County	50	88	56.8%	67.2%	72.0%
Gogebic County	147	222	66.2%		
Houghton County	253	349	72.5%		
Keweenaw County	5	11	45.5%		
Ontonagon County	35	59	59.3%		

% of women ages 40 to 69 years continuously enrolled in UPHP Medicaid who received a mammogram in either 2011 or 2010.

	Received Exams in **2010 or 2011	By County **2011 Denominator	By County 2011 % Received	Aggregate W-UP HEDIS 2012	UPHP UP Region-wide HEDIS 2012 Results:
Baraga County	10	27	37.0%	51.7%	55.5%
Gogebic County	45	73	61.6%		
Houghton County	51	105	48.6%		
Keweenaw County	1	*4	25.0%		
Ontonagon County	14	25	56.0%		

*Rates based on small denominator numbers (under 30) must be viewed with caution.
**Data supplied by UPHP based on their HEDIS 2012 quality review cycle which equates to care from year 2011 (or earlier as measure specifications require.)
*** Select UPHP final rates based on both claims and medical record review data

Use of Select Medicare Preventive Benefits

Medicare is the Unites States' health insurance program for people age 65 or older. Some people younger than age 65 can qualify for Medicare, too, including those who have certain disabilities, permanent kidney failure or amyotrophic lateral sclerosis (Lou Gehrig's disease). Medicare Part B covers a variety of preventive services such as flu and pneumococcal shots, mammograms, Pap tests, and prostate cancer screening. The table at right lists the percentage of the eligible population in each county that received each service in 2008, according to data collected by the Centers for Medicare and Medicaid Services. For comparison, statewide percentages for Michigan and Wisconsin appear near the bottom of the table, as well as the national state average.

Local Survey Findings: Vaccinations for Seniors

- Among Western U.P. adults aged 65 and older, an estimated 65.3% received a flu vaccination in the past year.
- An estimated 75.5% of Western U.P. adults aged 65 and older have received the pneumococcal vaccine.

Use of Medicare Preventive Benefits - 2008 Rates (Percentage of Eligible Population)					
County	**Influenza Immunization**	**Pneumococcal Vaccination**	**Mammogram**	**Pap Test**	**Prostate Cancer Screening**
Baraga	41.6	3.2	33.1	10.8	24.6
Gogebic	45.1	4.9	35.4	10.5	18.8
Houghton	31.3	3.5	32.0	12.4	14.7
Keweenaw	27.8	2.1	41.2	16.5	15.3
Ontonagon	27.1	2.9	30.3	10.7	17.7
Iron, WI	59.4	7.0	42.6	14.5	28.2
Michigan	47.9	5.8	39.6	12.9	22.0
Wisconsin	55.1	6.0	42.2	8.7	22.8
National State Average	45.2	5.7	38.9	10.2	19.0

Influenza Immunization - Medicare claims data are likely to underreport the actual use of this benefit, as many people receive this service from providers who do not bill Medicare for it.

Pneumococcal Vaccination - Most Medicare beneficiaries only need this service one time after they turn 65 to protect them. These data reflect vaccinations billed to Medicare in 2005 and do not include people who have been vaccinated in previous years. Medicare claims data are likely to underreport the actual use of this benefit, as many people receive this service from providers who do not bill Medicare for it.

Mammography - Data include claims for services provided in the calendar year of interest. Data include both screening and diagnostic services. Medicare covers once a year for screening purposes, and more frequently for diagnostic purposes, if medically necessary. Clinical practice guidelines suggest that women be screened every 1 to 2 years until age 75.

Pap Test - It may be difficult to interpret these numbers. Guidelines from the American Cancer Society suggest that women over 70 who have had 3 or more normal Pap tests in a row and no abnormal Pap test results in the last 10 years may discuss with their doctor whether to continue to have Pap tests.

Prostate Cancer Screening - Data include men who have had both a prostate-specific antigen test and a digital rectal examination.

Source: Centers for Medicare & Medicaid Services, www.cms.gov

Substance Abuse Chapter Introduction

The abuse of alcohol and other drugs is one of the most important causes of preventable chronic disease. Alcohol is the most commonly abused substance in the United States, Michigan and the Western Upper Peninsula based on admissions to treatment programs. (Tobacco, which contains nicotine and other harmful drugs and causes more preventable deaths than alcohol according to the CDC, is discussed in the Chronic Disease and Mortality section.) Excessive alcohol use is the third leading cause of preventable death in the U.S. In addition, excessive alcohol use is estimated to cost the U.S. around $185 billion every year in healthcare, criminal justice, and lost productivity expenses by CDC reports.

According to the Substance Abuse and Mental Health Services Administration (SAMHSA) National Survey on Drug Use and Health, 23.5 million persons aged 12 or older needed treatment for an illicit drug or alcohol abuse problem in 2009 (9.3 percent of persons aged 12 or older). Of these, only 2.6 million—11.2 percent of those who needed treatment—received it at a specialty facility. SAMHSA also reports characteristics of admissions and discharges from substance abuse treatment facilities in its Treatment Episode Data Set (TEDS). According to TEDS, there were 1.8 million admissions in 2008 for treatment of alcohol and drug abuse to facilities that report to State administrative data systems. Most treatment admissions (41.4 percent) involved alcohol abuse. Heroin and other opiates accounted for the largest percentage of drug-related admissions (20.0 percent), followed by marijuana (17.0 percent).

Local Focus

- Local admissions data from publicly funded substance abuse treatment programs follow the national pattern. Alcohol was the most common primary substance indicated as a reason for admission in the Western U.P. from 2009 through 2011 in publicly funded programs. The categories other opiates (non-heroin), and marijuana, were second and third most commonly reported reasons for admission.
- Baraga County had the highest per capita admissions rates for each of the three classes of substance cited above; however, because the data only include publicly funded admissions, it cannot be ascertained whether that county actually had the highest per capita treatment rate.
- The 2012 regional behavioral risk factor survey found that an estimated 12.1 percent of adults met the definition of heavy drinkers (more than 60 drinks in the previous month for men, or more than 30 drinks for women) and an estimated 14.7 percent met the definition for binge drinkers (five or more drinks in two hours for men, or four or more for women).

Potential Future Implications

- Continued high rates of alcohol abuse will cause acute and chronic disease in many individuals as well as having a broader potential impact on the community due to associated motor vehicle crashes and fatalities, domestic violence, and other societal problems.
- A 2012 stakeholder survey conducted by Copper Country Mental Health Services for Houghton,

Baraga, Keweenaw and Ontonagon counties, together with focus group input, identified as one of the top three mental health needs in the region increased services to address the problem of substance abuse.

Source:
http://www.drugabuse.gov/publications/drugfacts/treatment-statistics

Substance Abuse

The data in this section show three-year trends organized by the primary substance abuse agent reported at admission to publicly-funded substance abuse treatment programs. These admission rates are not intended to represent overall substance abuse prevalence in the Western U.P. region. Self-pay clients of public programs and clients of private programs are omitted from this data set. Also absent are persons who may be in need of treatment but have not acknowledged that need, and persons who are having difficulty accessing services in their region. Data are organized by county of residence and reported by the fiscal year of the Bureau of Substance Abuse and Addiction Services, which runs from October 1 through September 30.

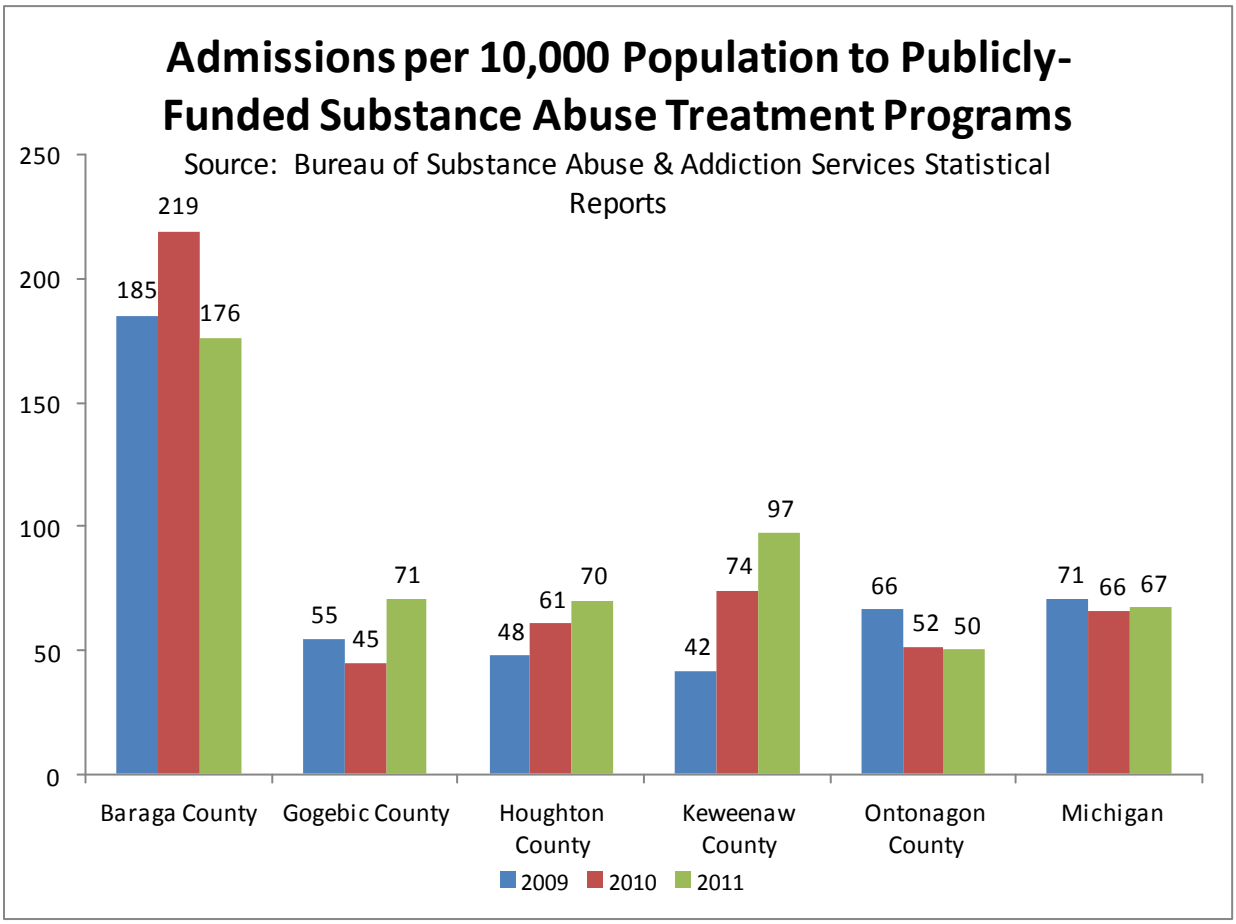
The table below shows the number of residents from each of the five Western U.P. counties that were admitted to publicly-funded substance abuse treatment programs in each of the years 2009, 2010, and 2011. These counts are converted to rates per 10,000 population in the graph on the next page.

Persons Admitted to Publicly-Funded Substance Abuse Treatment Programs

	2009	2010	2011
Baraga County	164	194	156
Gogebic County	90	74	116
Houghton County	175	223	257
Keweenaw County	9	16	21
Ontonagon County	45	35	34

Source: Bureau of Substance Abuse & Addiction Services Statistical Reports

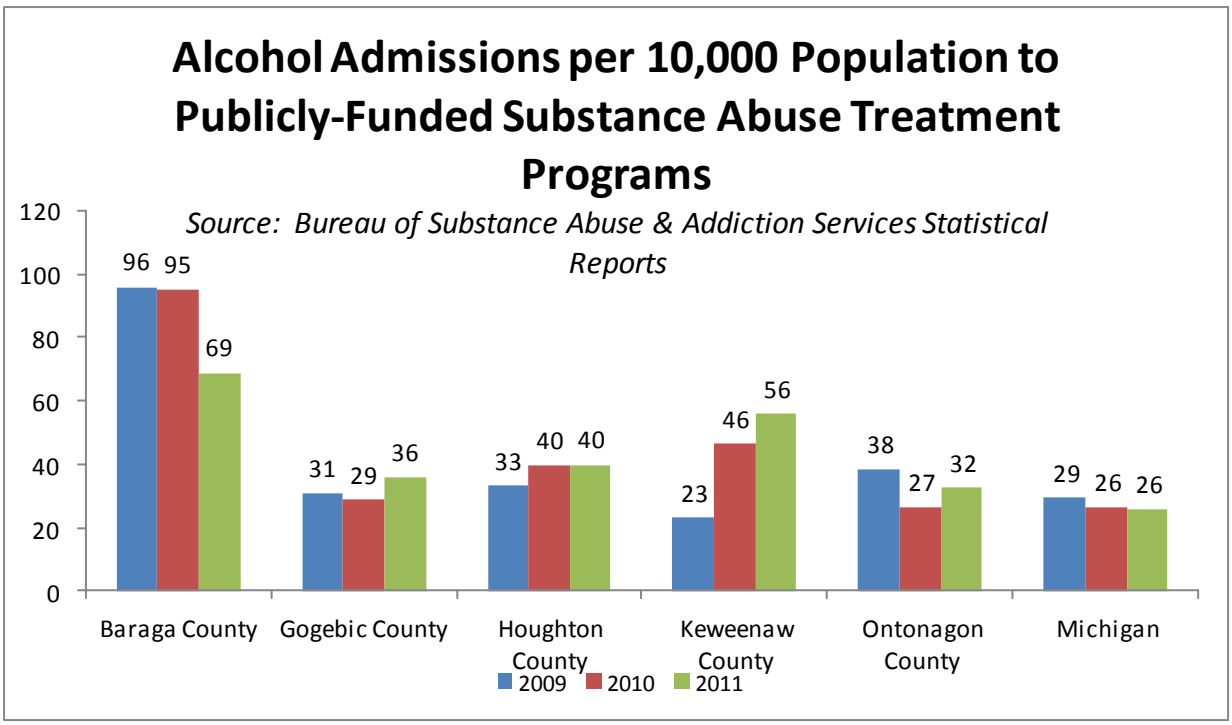
The graph below shows the number of admissions per 10,000 population to publicly-funded substance abuse treatment programs in each of the years 2009, 2010 and 2011. Population statistics came from the 2010 U.S. Census, so some error may be introduced in the 2009 and 2011 rates to the extent that population size differed in these years. The most striking observation in this graph is the degree to which admission rates in Baraga County exceed rates in the other Western U.P. counties and the state overall.



The next three graphs indicate rates of admission to publicly-funded substance abuse treatment programs per 10,000 population according to the primary substance reported at admission. The first graph shows admission rates where alcohol abuse is the primary issue reported at admission. The second graph shows admission rates for primarily non-heroin opiate abuse, which includes prescription painkillers. The third graph shows admission rates of individuals primarily abusing marijuana. All graphs have been standardized to the same scale for ease of comparison. The data show that in 2009 and 2010, alcohol topped the list of abused substances in all areas under study. In 2011, alcohol remained the most common abused substance reported at admission in Gogebic, Houghton, Keweenaw, and Ontonagon counties and Michigan overall, but in Baraga County the non-heroin opiate abuse admission rate tied that of alcohol abuse. For all three years, admission rates per 10,000 population for alcohol and non-heroin opiate abuse in Baraga County markedly exceeded admission rates

for all other Western U.P. counties and for Michigan overall. Admission rates for marijuana abuse were also higher in Baraga County than elsewhere, at more than double the state rate for the three years studied.

Admissions where cocaine, methamphetamine or other stimulants or heroin were the primary substance reported at admission generally comprised a smaller percentage of Western U.P. admissions than those substances indicated below and on the next page.

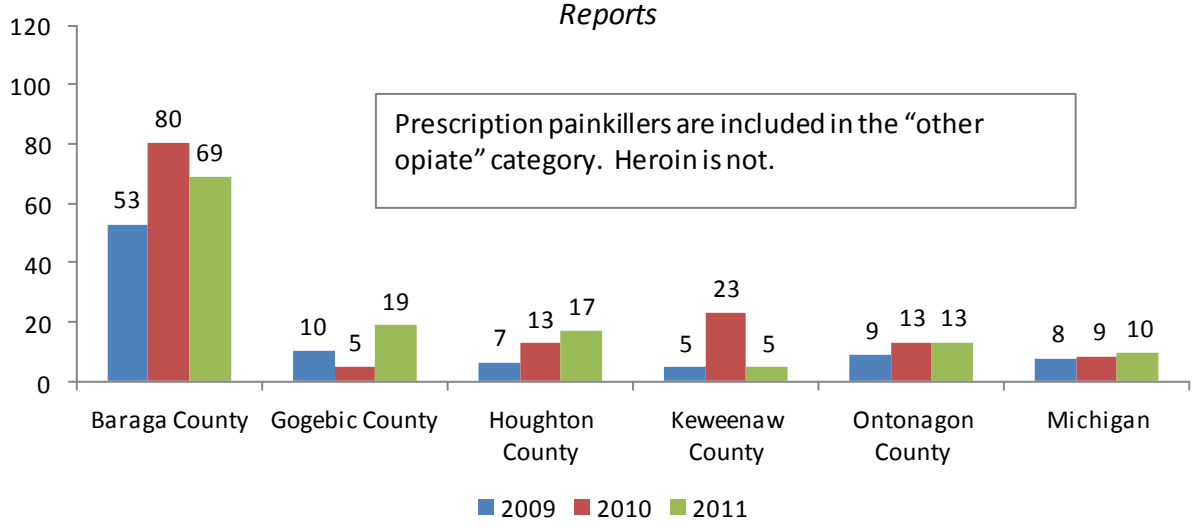


Local Survey Findings: Alcohol Consumption

- An estimated 12.1% of Western U.P. adults reported heavy drinking rates (more than 2 alcoholic drinks per day for men; more than 1 per day for women).
- Binge drinking prevalence, the consumption of 5 or more drinks in 2 hours for men or 4 or more drinks in 2 hours for women, was estimated to be 14.7% among Western U.P. adults.
- Both heavy and binge drinking behaviors are more common with younger adults.

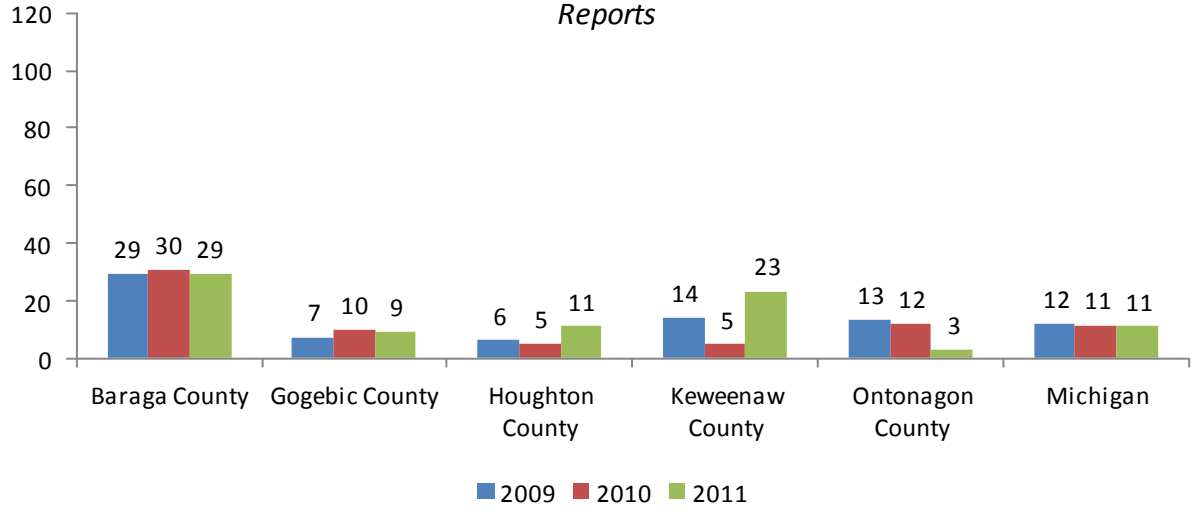
Other Opiate Admissions per 10,000 Population to Publicly-Funded Substance Abuse Treatment Programs

Source: Bureau of Substance Abuse & Addiction Services Statistical Reports



Marijuana Admissions per 10,000 Population to Publicly-Funded Substance Abuse Treatment Programs

Source: Bureau of Substance Abuse & Addiction Services Statistical Reports



Public Safety Chapter Introduction

Public safety is a highly valued aspect of overall community health. In countless citizen surveys of what people value in their communities, safe neighborhoods ranks among the most commonly valued attributes cited, along with good schools, low taxes, recreational opportunities, and other community characteristics. Public safety data presented in this section include crimes involving drugs or alcohol, motor vehicle crashes involving alcohol, domestic violence, and other violent crimes.

Local Focus

- Western U.P. and Iron County, Wisconsin had-been-drinking crash rates exceed their respective statewide rates in per capita crashes, per capita fatalities, and percentage of crashes that involved alcohol.
- From the 2012 regional behavioral risk factor survey, an estimated 5.3 percent of Western U.P. adults drive after having too much to drink within the last month, compared with 2.3 percent in a 2010 survey of Michigan residents administered by different methods.
- Michigan violent crime rates in the four years from 2008 through 2011 ranged from 397 to 469 violent crimes per 100,000 people, compared with local county rates between 42 and 135 per 100,000. A person is more than six times more likely to be a victim of a violent crime in Michigan as a whole compared with the Western Upper Peninsula.

Potential Future Implications

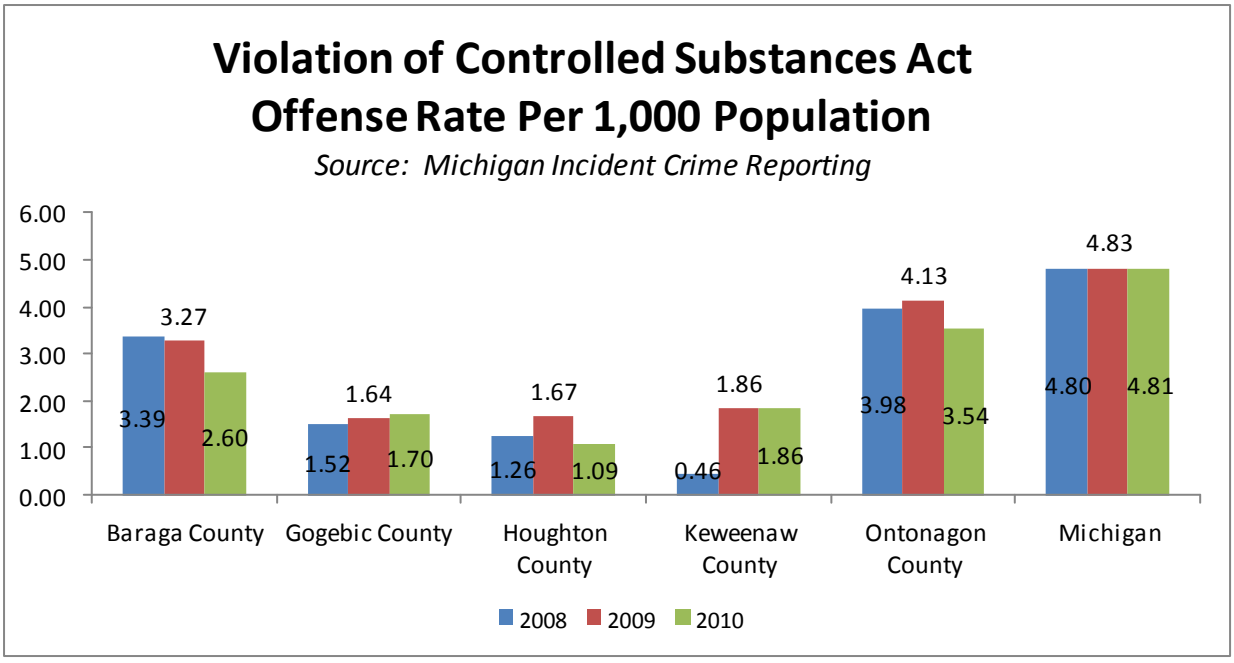
- High rates of heavy drinking, as seen in the Western UP, increase risk of not only motor vehicle accidents but also are associated with domestic violence and other violent crime.
- Increasing abuse of prescription pain medications, a national trend now observed in treatment admissions in Baraga County, may lead to future increases in drug-related crime, domestic violence and other violent crime in our area as well as increased motor vehicle accidents.

Crimes Involving Alcohol and Other Drugs

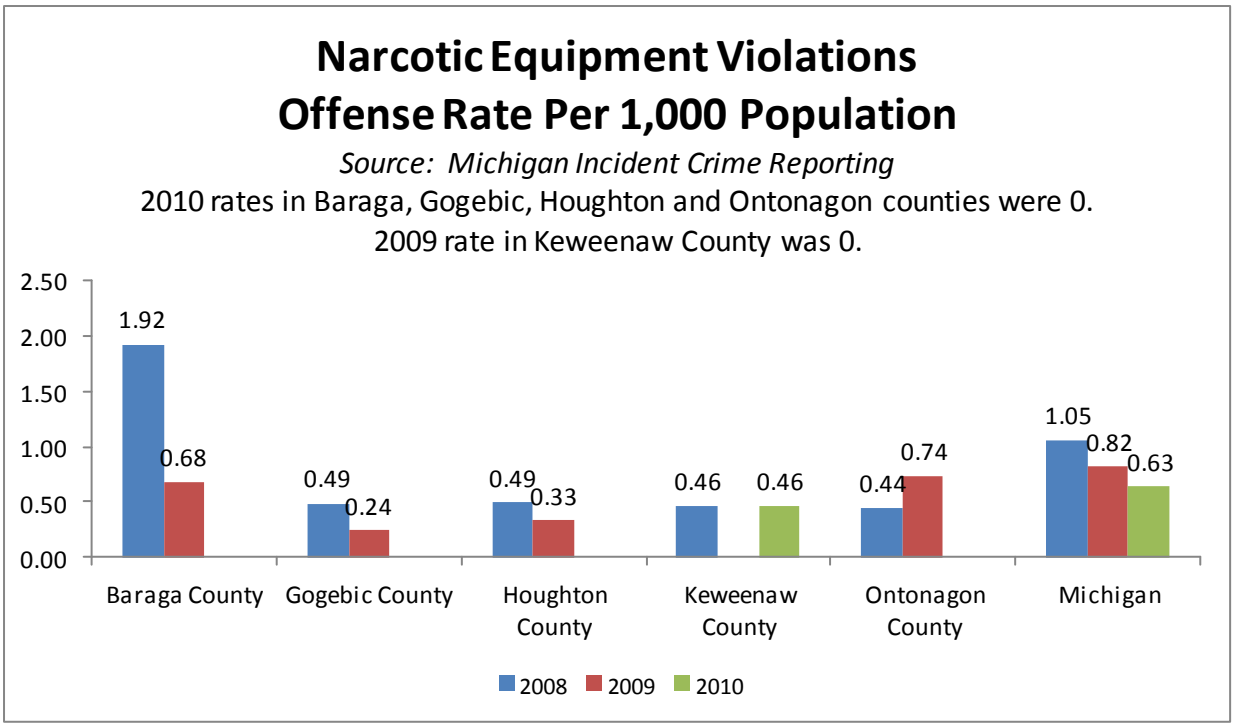
Data that make up the next four graphs come from the Michigan Incident Crime Reporting (MICR) database, which is Michigan's Uniform Crime Reporting system. The Uniform Crime Reporting (UCR) Program was conceived in 1929 by the International Association of Chiefs of Police to meet a need for reliable, uniform crime statistics for the nation. In 1930, the FBI was tasked with collecting, publishing, and archiving those statistics. Across the United States, nearly 17,000 law enforcement agencies report their crime statistics to the UCR Program. As of this report, neither the Keweenaw Bay Indian Community Tribal Police Department nor the Lac Vieux Desert Tribal Police Department supply information about crimes committed on tribal property to this system.

The graph below shows the number of offenses per 1,000 population that were classified as violations of the Controlled Substances Act. Included among these offenses are the manufacture, distribution, sale, smuggling, possession or use of hallucinogens, heroin, opium or opium derivatives, cocaine, synthetic narcotics, methamphetamine, Ecstasy, marijuana, amphetamines, barbiturates, LSD, or crack cocaine. Rates were calculated from numbers of offenses provided by the MICR system and 2010 U.S. Census population totals. Some error will exist in these estimates as a result of population differences in the years leading up to the census. During the three years studied, offense rates in the five Western U.P. counties studied were lower than rates in Michigan overall. The highest rates among Western U.P. counties occurred in Ontonagon County, where 27 offenses in 2008, 28 offenses in 2009, and 24 offenses in 2010 resulted in the rates shown.

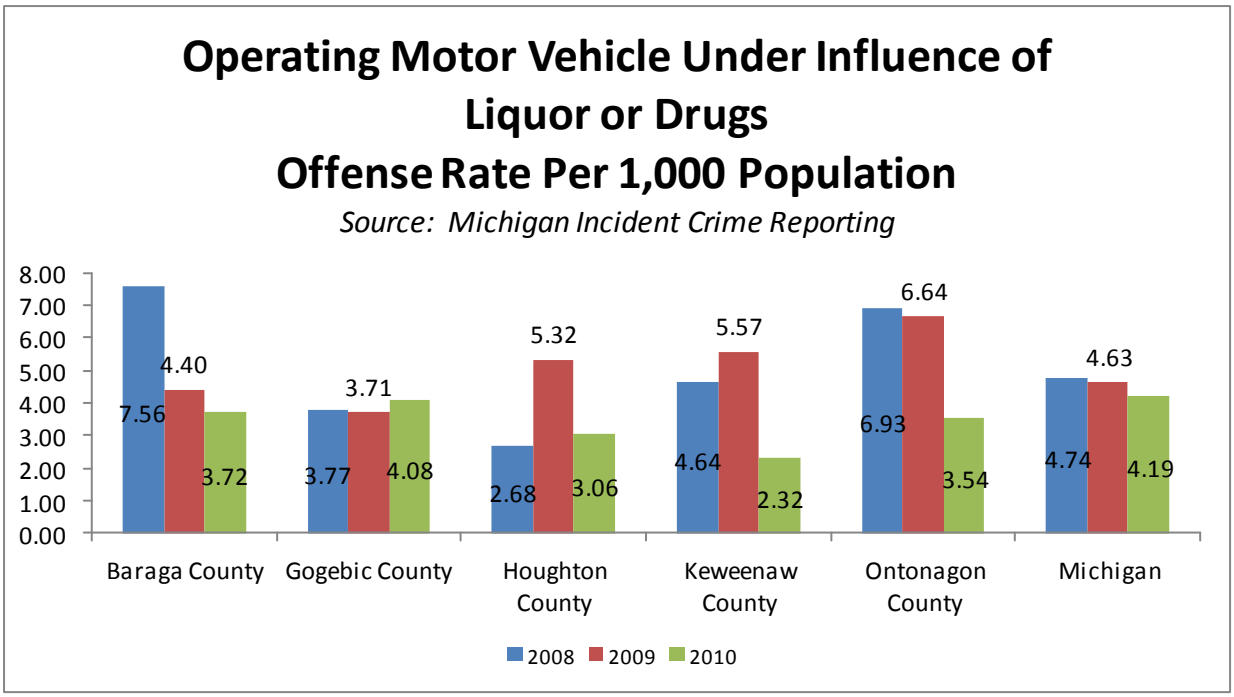
Source:
http://www.fbi.gov/about-us/cjis/ucr/ucr



The numbers in the next graph represent the number of offenses per 1,000 population classified as narcotic equipment violations, which include operating or maintaining a methamphetamine lab. Crime activity in this category was sporadic in the Western U.P. between 2008 and 2010. The highest rate reported was in Baraga County in 2008, when 17 offenses resulted in a rate per 1,000 population of 1.92.



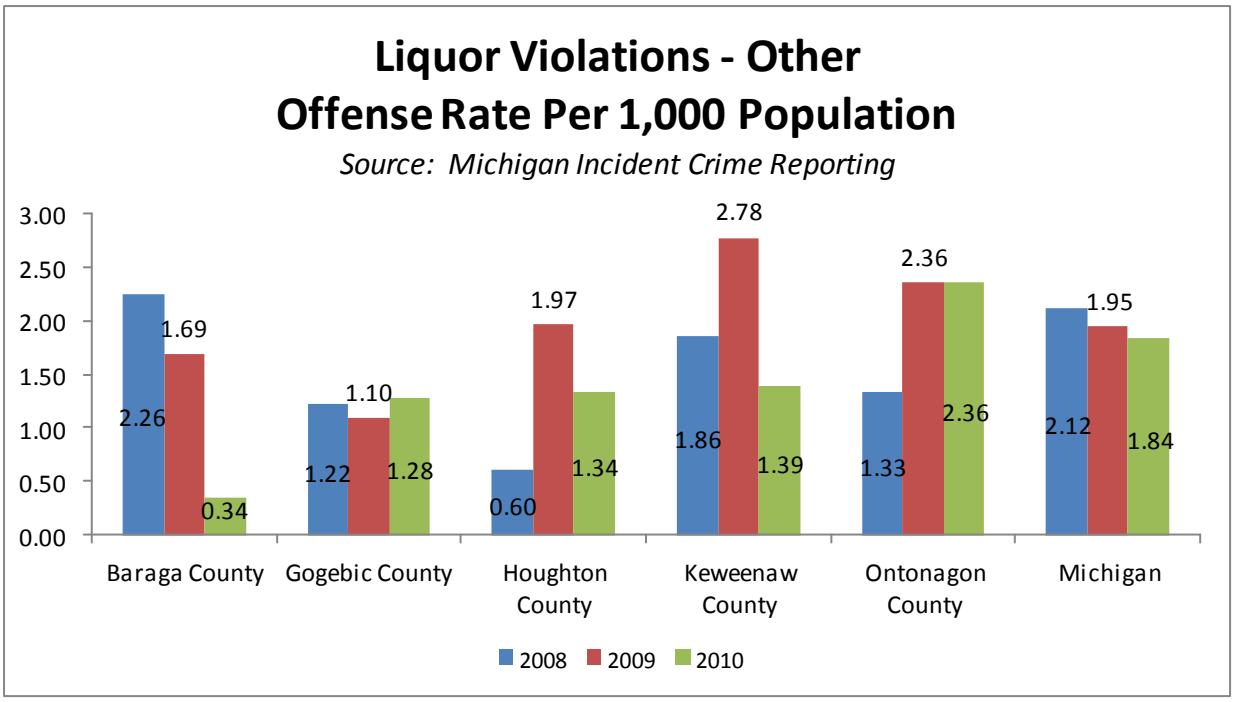
The data below indicate the number of offenses per 1,000 population classified as operating a motor vehicle under the influence of liquor or drugs in 2008, 2009, and 2010. Operating under the influence of liquor or drugs includes operating any type of motor vehicle (car, boat, snowmobile, ORV, etc.) under the influence. This offense rate was fairly constant in Michigan between 2008 and 2010 but variable in the Western U.P. The highest rate of 7.56 per 1,000 population, which occurred in Baraga County in 2008, equated to 67 offenses that year. Gogebic County's highest rate of 4.08 per 1,000 population in 2010 amounted to 67 offenses. Houghton County's high of 5.32 per 1,000 population in 2009 aligns with 195 offenses. In Keweenaw County in 2009, 12 offenses resulted in a rate of 5.57 per 1,000 population. In Ontonagon County, the 2008 rate of 6.93 offenses per 1,000 population corresponded to 47 offenses.



Local Survey Findings: Driving after Drinking

- An estimated 5.3% of Western U.P. adults drove after having had too much to drink at least once in the past month.

The last graph in this series shows the offense rate per 1,000 population for liquor violations not previously classified. This category includes manufacturing, transporting in open container, minors misrepresenting age, minors in possession and furnishing alcohol to minors. In multiple instances counties in the Western U.P. had offense rates that exceeded the rate in Michigan for a given year. This occurred in Baraga County in 2008, when 20 offenses resulted in a rate of 2.26 per 1,000 population; in 2009 when 72 offenses in Houghton County, 6 in Keweenaw County, and 16 in Ontonagon County resulted in rates of 1.97, 2.78, and 2.36 per 1,000 population respectively; and in Ontonagon County in 2010 when 16 offenses were again committed.



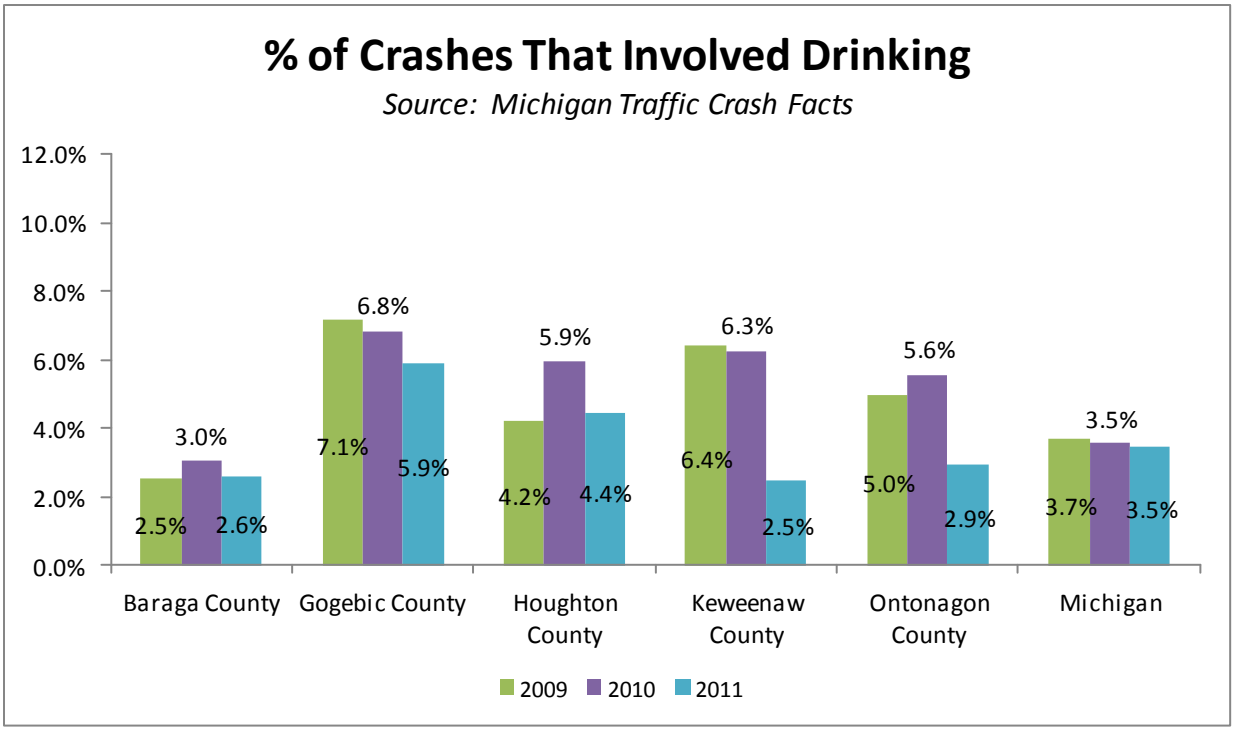
The rates in the following table were calculated from arrest counts taken from the Wisconsin Justice Data Portal, which provides access to Wisconsin crime data submitted to the Uniform Crime Reporting program, and population statistics from the 2010 U.S. Census. Shown are the arrest rates per 1,000 population for a variety of drug and alcohol related legal violations. Wisconsin overall rates are provided for comparison.

Considering all drug-related violations combined, arrest rates in Iron County were consistently lower than those in Wisconsin overall between 2008 and 2010. Rates of driving while intoxicated were significantly higher in Iron County compared to the state overall. The 2008 rate of 10.48 arrests per 1,000 population equates to 62 arrests that year. The 2009 and 2010 rates align with 67 and 71 arrests respectively. The Liquor Laws category encompasses violations of state or local laws or ordinances prohibiting the manufacture, sale, purchase, transportation, possession, or use of alcoholic beverages, not including driving under the influence and drunkenness. In 2008, 66 arrests in Iron County for this violation resulted in an arrest rate of 11.16 per 1,000 population.

Arrest Rates Per 1,000 Population		2008		2009		2010	
		Iron County	Wisconsin	Iron County	Wisconsin	Iron County	Wisconsin
Drug	Opium/Cocaine Sales	0.51	0.38	0.34	0.31	0.00	0.25
	Marijuana Sales	0.17	0.41	0.00	0.43	0.34	0.42
	Synthetic Narcotic Sales	0.00	0.06	0.00	0.06	0.00	0.07
	Other Drug Sales	0.00	0.13	0.17	0.12	0.00	0.11
	Opium/Cocaine Possession	0.00	0.27	0.17	0.26	0.17	0.31
	Marijuana Possession	2.54	2.65	3.04	2.72	2.37	2.84
	Synthetic Narcotic Possession	0.00	0.16	0.00	0.15	0.00	0.16
	Other Drug Possession	0.17	0.39	0.00	0.39	0.00	0.39
	Total Drug	**3.38**	**4.44**	**3.72**	**4.44**	**2.87**	**4.54**
Alcohol	Driving While Intoxicated	10.48	7.33	11.33	7.11	12.00	6.26
	Liquor Laws	11.16	7.35	6.25	6.65	7.44	5.59
Source: Wisconsin Justice Data Portal							

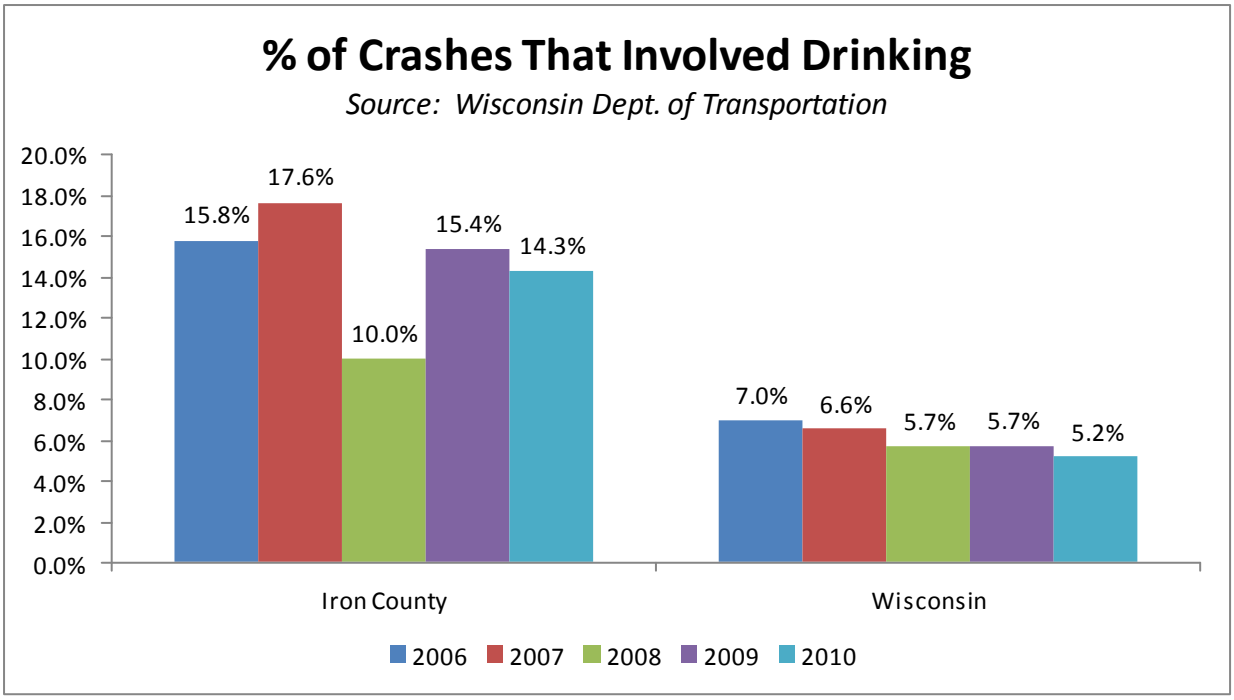
The percentages in the next graph come from the annual Michigan Traffic Crash Facts reports, compiled and published by the Michigan State Police Criminal Justice Information Center, the Office of Highway Safety Planning, and the University of Michigan Transportation Research Institute. The graph shows the percentage of all crashes in a given year in which alcohol was a factor. Although the percentages of all crashes involving alcohol range from 2.5 to 7.1 percent between 2009 and 2011, the percentages of fatal crashes where alcohol played a factor averaged 32 percent statewide between 2007 and 2011 . When the 2011 Had Been Drinking fatal crash rates per 1,000 people were ranked by county, Keweenaw County ranked first (0.4602), Ontonagon County fourth (0.1516), Baraga County ninth (0.1135), and Houghton County nineteenth (0.0546) in the state, out of 83 counties. There were no fatal crashes in Gogebic County in 2011.

Source:
http://www.michigantrafficcrashfacts.org/county-city/



The graph below shows the percentages of crashes (fatal and non-fatal) that were reported to involve drinking in Iron County, Wisconsin and Wisconsin overall for the five years ending in 2010. These crash statistics are well-aligned with the arrest rates for driving while intoxicated reported previously in this chapter, which showed Iron County rates exceeding those in Wisconsin overall by a significant amount. In 2010, Of the 562 persons killed in motor vehicle crashes in Wisconsin, 39% died in alcohol -related crashes. That was the lowest annual percentage of crash deaths due to alcohol in the five years examined.

Source:
http://www.dot.wisconsin.gov/safety/motorist/crashfacts/docs/crash-intro.pdf



Domestic Violence

The next four tables summarize trends in domestic violence according to offenses reported to the Michigan Incident Crime Reporting System. Absent from these data would be any offenses that occurred on property belonging to either the Keweenaw Bay Indian Community or the Lac Vieux Desert Band of Chippewa Indians.

An offense is an unlawful act reported to a law enforcement agency. Michigan's definition of domestic violence includes any of the following acts, except in cases of self-defense: causing or attempting to cause physical or mental harm to a family or household member; placing a family or household member in fear of physical or mental harm; causing or attempting to cause a family or household member to engage in involuntary sexual activity by force, threat of force, or duress; and/or engaging in activity toward a family or household member that would cause a reasonable person to feel terrorized, frightened, intimidated, threatened, harassed, or molested.

These data are presumed to understate the scope of domestic violence, because studies show that a considerable percentage of abuse, harassment and even physical violence goes unreported, and the state registry does not include all Children's Protective Services cases or all clients of shelter homes, just those cases reported to police where the officer determines that a criminal offense has been committed.

Child Victims of Domestic Violence

The counts tabulated below refer to offenses in which the victim to offender relationship was child, child in common, child of boyfriend/girlfriend, stepchild, or grandchild.

	2006	2007	2008	2009	2010	2011
Baraga County	6	5	3	4	6	5
Gogebic County	5	15	4	7	8	4
Houghton County	42	34	21	24	11	22
Keweenaw County	13	5	0	4	0	0
Ontonagon County	10	5	5	1	9	2

The counts shown above are specifically offender counts. For example, in an offense involving 2 offenders and 1 victim, a count of 2 would be logged.
Source: Michigan Incident Crime Reporting

Spouse or Common Law Spouse Victims of Domestic Violence

The counts tabulated below refer to offenses in which the victim to offender relationship was spouse or common law spouse.

	2006	2007	2008	2009	2010	2011
Baraga County	9	11	5	1	5	3
Gogebic County	3	6	9	5	4	3
Houghton County	33	33	20	34	20	37
Keweenaw County	6	4	8	1	3	0
Ontonagon County	5	11	1	5	3	13

Source: Michigan Incident Crime Reporting

Dating (Boyfriend/Girlfriend) or Resident Boyfriend/Girlfriend Victims of Domestic Violence

The counts tabulated below refer to offenses in which the victim to offender relationship was boyfriend or girlfriend, living together or not.

	2006	2007	2008	2009	2010	2011
Baraga County	17	11	6	6	5	5
Gogebic County	5	11	8	9	7	8
Houghton County	55	53	39	53	38	46
Keweenaw County	3	2	4	2	1	0
Ontonagon County	13	10	10	7	13	9

Source: Michigan Incident Crime Reporting

Victims of Domestic Violence:
Grandparents, In-Laws, Parents, Step-Parents

The counts tabulated below refer to offenses in which the victim to offender relationship was grandparent, in-,law, parent, or step-parent.

	2006	2007	2008	2009	2010	2011
Baraga County	0	6	5	2	1	4
Gogebic County	3	6	4	4	2	2
Houghton County	22	16	11	19	14	23
Keweenaw County	4	1	8	4	3	1
Ontonagon County	6	9	2	1	4	7

Source: Michigan Incident Crime Reporting

The variability in domestic violence offense numbers from year to year make it difficult to draw any conclusions about trends over time. The data suggest that spousal abuse and dating violence are reported to law enforcement more frequently in Houghton County than domestic violence cases involving child victims and parents as victims. This is also generally the case in Ontonagon County.

Violent Crime

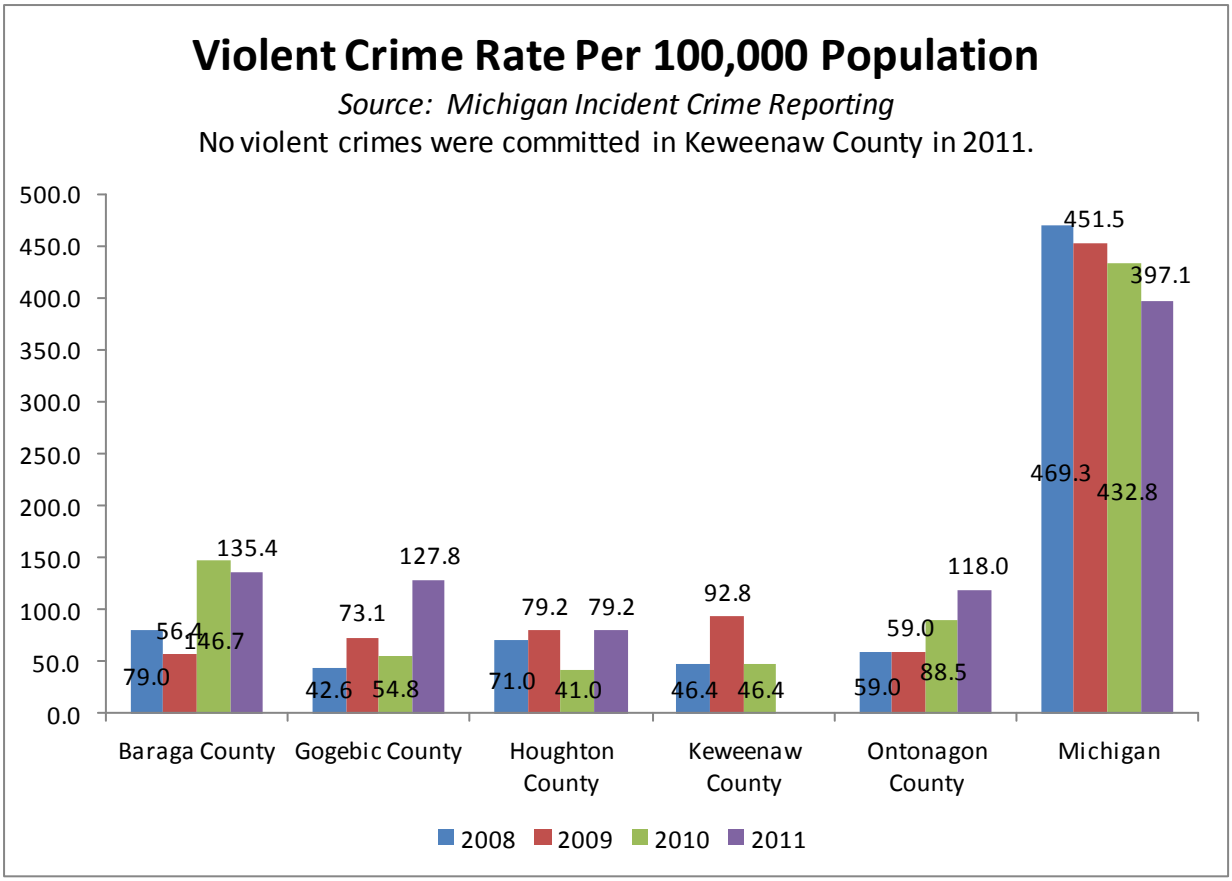
In the FBI's Uniform Crime Reporting (UCR) Program, violent crime is composed of four offenses: murder and non-negligent manslaughter, forcible rape, robbery, and aggravated assault. Violent crimes are defined in the UCR Program as those offenses which involve force or threat of force.

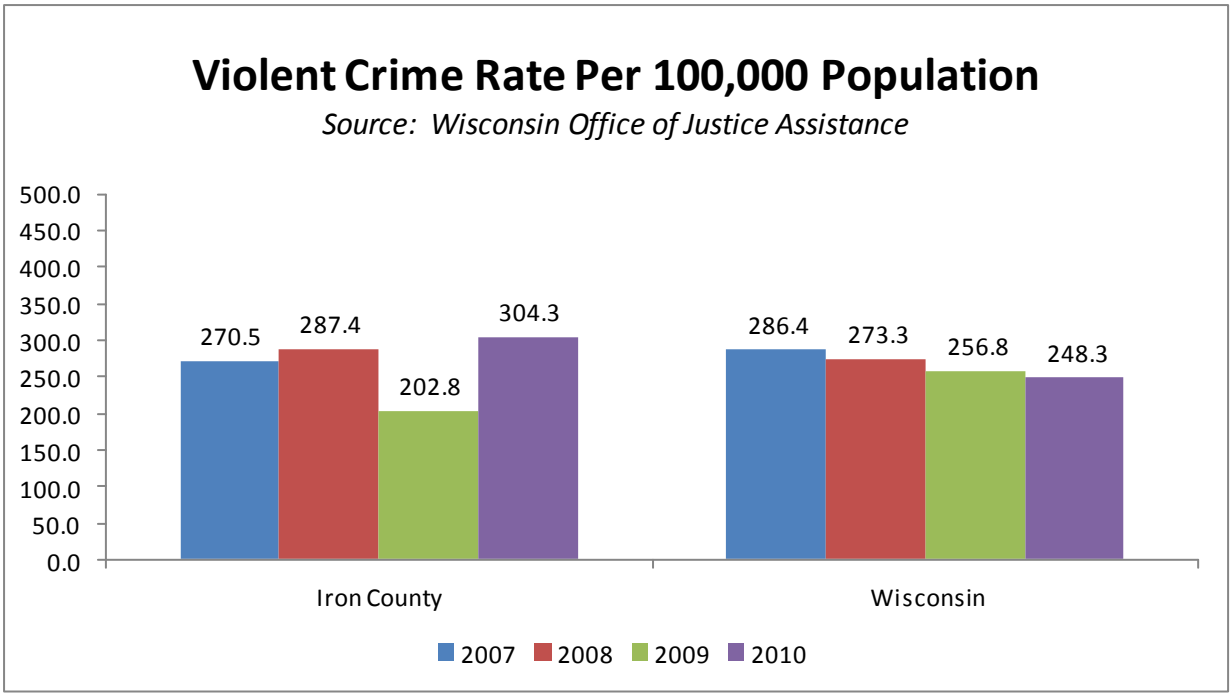
The 2011 rates shown below translate to 12 offenses committed in Baraga County, 21 in Gogebic County, 29 in Houghton County, 0 in Keweenaw County and 8 in Ontonagon County.

On the next page, the Iron County, Wisconsin violent crime rate in 2010 translates to 18 offenses.

In both the Western U.P. and Iron County, Wisconsin during the time interval presented, aggravated assault was the most common form of violent crime.

Sources: http://www.michigan.gov/msp/0,1607,7-123-1645_3501_4621---,00.html, http://oja.wi.gov/category.asp?linkcatid=1324&linkid=709&locid=97





Murder

The FBI's Uniform Crime Reporting (UCR) Program defines murder and non-negligent manslaughter as the willful killing of one human being by another. The classification of this offense is based solely on police investigation as opposed to the determination of a court, medical examiner, coroner, jury, or other judicial body. The UCR Program does not include the following situations in this offense classification: deaths caused by negligence, suicide, or accident; justifiable homicides; and attempts to murder or assaults to murder, which are scored as aggravated assaults.

From 2008 to 2011, four murders were committed in the Western U.P. region. The average annual murder/non-negligent manslaughter rate during this time frame was 1.4 per 100,000 population in the Western U.P., compared to 5.6 in Michigan overall.

No murders were committed in Iron County, Wisconsin from 2007 to 2010. The average annual murder rate in Wisconsin during this time frame was 2.8 per 100,000 population.

Sources: Michigan Incident Crime Reporting, Wisconsin Office of Justice Assistance

Local Survey Findings Chapter Introduction

Background

Western Upper Peninsula Health Department conducted a behavioral risk factor survey of Western U.P. adults between June and August 2012. Survey results, which follow this introduction, provide county-level data on health status, access to care, use of screening and preventive health care services, prevalence of chronic diseases and disabilities, and certain behaviors linked to health status, morbidity and mortality.

The CDC's Behavioral Risk Factor Surveillance System (BRFSS) is a telephone survey conducted by state health departments with assistance from the CDC. Every year, states conduct monthly telephone surveillance using a standardized questionnaire to determine the distribution of risk behaviors and health practices among non-institutionalized adults. The data collected are weighted for probability of selection and the distribution of a state's adult population by age, gender, race, and other demographic characteristics. Estimates for smaller geographic areas than each state are also prepared, however these prevalence rates for smaller areas are usually computed using BRFS data combined across years.

The smallest region for which state BRFS data are provided is the entire Western Upper Peninsula region, consisting of Baraga, Gogebic, Houghton, Keweenaw and Ontonagon counties. The aim of obtaining county-specific estimates is one of the motivating factors that prompted a local survey of behavioral risk factors. The second motivating factor was that a recent BRFS methodology change meant that estimates for the Western U.P. region would not be available again until 2014. Currently the most recent regional data available were collected from 2008 to 2010. The small number of interviews conducted in the region each year necessitates a three year interval for meaningful estimates. State-level data are available from the 2011 survey cycle. These results have been included for rough benchmarking purposes in the tables that follow.

Multiple considerations led us to conduct our local survey by mail rather than by telephone. The CDC estimates that currently 3 in 10 U.S. households have only cellular phones, a situation that significantly reduces the sampling frame coverage if only landlines are called, as has been the case traditionally. This coverage weakness is what prompted a 2005 pilot study in six states that compared prevalence estimates by survey mode as part of the BRFSS (Link, Battaglia, Frankel, Osborn, & Mokdad, 2006). Estimates based on data from 3,010 mail surveys were compared with estimates based on data from 18,780 telephone surveys. The estimates based on data from the two modes were largely equivalent. Differences found, such as differences in the estimated prevalence of binge drinking, were consistent with previous research showing that self-administered surveys generally produce higher estimates than interviewer-administered surveys for questions about sensitive behaviors. Despite the reassurance this study provides, this methodology difference should be kept in mind as local estimates are compared to state results from the BRFS.

Local Survey Methodology

Sample

The sample for the 2012 Community Health Survey of Western Upper Peninsula Adults was purchased from Marketing Systems Group. The sample was address-based and drawn from a database last matched to the United States Postal Service's Delivery Sequence File (DSF) on May 1, 2012. Prior to drawing the sample, four sampling frames were defined: Baraga County, Gogebic County, Houghton and Keweenaw counties combined, and Ontonagon County. From each of these frames, 2,000 addresses classified as residential and occupied were randomly selected with equal probability of being chosen. Seasonal and educational addresses were eligible for selection. Households that received the survey were instructed to have the adult with the next birthday complete it. This instruction was intended to yield an approximately random sample of adults within each household.

Response Rate

The following table summarizes the response rate for each sampling frame and the four frames combined. The response rate is calculated as the number of completed surveys within a frame divided by the number of surveys which appeared to be successfully delivered.

Frame	Surveys Mailed to this Frame	Undeliverable Surveys	Surveys Assumed Successfully Delivered	Completed Surveys Within this Frame	Frame Response Rate
Baraga County	2,000	181	1,819	640	35.2%
Gogebic County	2,000	219	1,781	579	32.5%
Houghton +Keweenaw Counties	2,000	172	1,828	621	34.0%
Ontonagon County	2,000	172	1,828	793	43.4%
Western UP (4 frames combined)	8,000	744	7,256	2,633	36.3%

While our sample was ordered by county, we suspected that in some cases zip codes that span multiple counties would result in a small percentage of addresses assigned to one sampling frame actually belonging in another. This prompted us to include a question in the survey which asked the respondent to identify their county of residence. In the survey results that follow this methodology discussion, estimates are calculated based on the county of residence indicated by the respondent.

Survey Design

Packets containing a cover letter, survey and postage-paid pre-addressed return envelope were prepared and mailed to the entire sample of 8,000 addresses on June 26, 2012. The packet included instructions for accessing an online version of the same survey. Only 120 of the 2,633 surveys returned

were completed online. Households that returned completed surveys by August 1, 2012 qualified for a prize drawing consisting of eight $50 grocery gift cards. Completed surveys were accepted until data entry concluded on August 31, 2012. No reminders were sent.

The majority of the questions used in the survey were taken directly from the mail-out versions of the BRFS piloted in several states as a follow up communication to households that were unresponsive to repeated phone survey attempts (CDC, 2011, 2012). A few original questions were added. The results of these original questions will be identified in the tables that follow.

A pilot of the survey was conducted with 29 adult volunteers prior to the official launch. After the pilot, minor changes were made to clarify instructions.

Analysis

Survey data were weighted to account for the probability of selecting a particular household and to account for the number of adults in the household. To adjust for overrepresentation of some sex, age, and education groups, raking adjustment factors based on 2010 Census population totals and 2006-2010 American Community Survey educational attainment estimates were calculated. When calculating estimates for the Western U.P. overall, county of residence was included as a raking variable. If any of the raking variables were blank for a particular survey response, that response was excluded from the analysis. The raking variables used in the local survey analysis were simplified from those used by the CDC to weight BRFS data beginning with the 2011 data collection year. This simplification of raking variables is another reason that caution is advised when comparing local estimates to state estimates in the tables that follow. Raking adjustment factors were calculated using Microsoft® Excel. The remaining statistical analyses were performed using IBM SPSS Complex Samples software. This software produces asymmetric confidence intervals for proportions.

Due to variability in response rates to individual questions and differences in relevant subpopulations for particular questions, not all estimates are based on the total sample size. Also, "Don't Know/Not Sure" responses were excluded from the denominator unless indicated otherwise. As a result, item-by-item sample sizes (n) and population descriptions are included within each county table. The sample sizes for each estimate in the population characteristic tables are tabulated at the end of this section.

About Iron County, Wisconsin Data

The Iron County and Wisconsin data included in the pages that follow are from the CDC's Behavioral Risk Factor Surveillance System (BRFSS) telephone survey coordinated by the Wisconsin Division of Public Health. Grant funds were available to oversample small counties, Iron County among them, for three years. This oversampling ended in 2008.

Sources:

Centers for Disease Control and Prevention (2011 and 2012). Behavioral Risk Factor Surveillance System Survey Questionnaire. Atlanta, Georgia: U.S. Department of Health and Human Services.

Link, M. W., Battaglia, M. P., Frankel, M. R., Osborn, L., & Mokdad, A. H. (2006). Address-based versus Random-Digit-Dial Surveys: Comparison of Key Health and Risk Indicators. American Journal of Epidemiology , 1019-1025.

Selected Survey Findings

Health Status Indicators

General Health Status

- Among Western U.P. adults aged 65 and older, an estimated 27.7% described their general health status as fair or poor. Adults younger than 65 more frequently described their general health as Good, Very Good, or Excellent.
- Adults with household incomes less than $25,000 reported higher rates of fair or poor health (27.1%) than adults with household incomes of $50,000 or more (11.6%). Other survey choices were Good, Very Good, and Excellent.

Health Status and Aging

- Approximately 19% of adults aged 65 and older reported experiencing poor physical health on at least 14 of the past 30 days. Fewer young adults reported 14 or more days of poor physical health.
- An estimated 38.4% of adults aged 65 and older reported being limited in their activities by physical, mental, or emotional problems, or required the use of special equipment such as a cane or wheelchair.

Health Status and Socioeconomics

- Western U.P. adults whose educational attainment did not extend beyond high school reported the highest rates of poor physical health.
- Rates of activity limitation due to poor physical or mental health were highest among those who did not pursue education beyond high school.
- Adults with household incomes less than $50,000 reported higher rates of poor physical health than those with incomes above that amount.
- An estimated 17.1% of adults with household incomes under $25,000 reported 14 or more days of poor mental health in the past month, significantly higher than adults living in households with higher incomes.
- The lowest income group more frequently reported that poor health limited their activities, and was more likely to report a disability (35.1%, compared to 25.2% among Western U.P. adults overall).
- The mean number of days of poor physical health for those whose highest educational attainment was a high school diploma was more than twice that of those holding at least a 4-year college degree.

Obesity and Overweight

- An estimated 68.7% of Western U.P. adults are either obese or overweight.
- High rates of obesity and overweight are observed among both genders, and across all ages, incomes, and education levels.

Access to Care Indicators

Health Insurance and Access to Routine Care

- An estimated 18.6% of Western U.P. adults between the ages of 18 and 64 have no health care coverage.
- Lack of health insurance is most prevalent in Ontonagon County, and among those with lower household incomes and lower levels of educational attainment.
- Ontonagon County adults are least likely to have a personal health care provider (27.3%, compared to 17.1% across the Western U.P. region).
- Younger adults, and those with lower household incomes, are less likely to have a personal health care provider than older adults and those with higher incomes.
- Cost presents a barrier to accessing health care for an estimated 22.3% of Western U.P. adults.
- Lack of transportation was cited as a barrier to accessing health care services for approximately 4% of Western U.P. adults overall, and 8.5% of adults with household incomes below $25,000.
- Roughly 40% of Western U.P. adults did not have a routine physical exam by a health professional in the past year.
- Men were less likely to have had an annual checkup than women, as were younger adults compared to older adults.

Women's Cancer Screening

- An estimated 95.1% of Western U.P. women aged 20 and older have had a clinical breast exam at some point in their lives, and 71.0% had their most recent exam within the recommended time interval.
- An estimated 89.8% of Western U.P. women aged 40 and older have ever had a mammogram. 53.1% had a mammogram in the last year. Women from households with incomes higher than $50,000 received mammograms at higher rates than women with household incomes less than $25,000.
- An estimated 95.3% of Western U.P. women have ever had a Pap test. 80.7% had their most recent Pap test within the last three years. The rate of appropriately-timed cervical cancer screening decreased with age, and increased with income.

Men's Cancer Screening

- An estimated 79.5% of Western U.P. men aged 50 and older have ever had a PSA test to screen for prostate cancer. 54.4% had a PSA test within the past year. Men aged 65 and older were significantly more likely to have had a PSA test in the past year than those aged 50 to 64 (68.8% vs. 45.1%).

Colorectal Cancer Screening

- An estimated 47.2% of Western U.P. adults over age 50 have ever had a blood stool test for colorectal cancer screening. Approximately 19% had one within the last two years.
- Roughly 62% of Western U.P. adults aged 50 and older have ever had a sigmoidoscopy or colonoscopy for colorectal cancer screening. Approximately 50% had either of these procedures within the past five years. Screening rates increased with age and income.

Vaccination for Seniors

- Among Western U.P. adults aged 65 and older, an estimated 65.3% received a flu vaccination in the past year.
- An estimated 75.5% of Western U.P. adults aged 65 and older have received the pneumococcal vaccine.

HIV Testing

- An estimated 33.6% of Western U.P. adults between the ages of 18 and 64 indicated that they ever had an HIV test. Testing was more common among adults aged 18 to 39 (40.8%) than among adults aged 40 to 64 (27.1%).

Dental Care

- An estimated 41.9% of Western U.P. adults received no oral health care in the past year.
- About 50% of local adults had no dental insurance, and cost was a barrier to accessing dental services for about 25% of Western U.P. adults in the last year.
- Men were less likely than women to visit a dentist.
- Adults with household incomes below $25,000 were the least likely to visit a dentist in the past year (59.7%), the least likely to have dental insurance (71.4%), and the most likely to cite cost as a barrier to dental access (38.0%).

Health Behavior Indicators

Adequate Physical Activity

- Roughly 1 in 7 Western U.P. adults reported no leisure time physical activity.
- No leisure time physical activity was more prevalent with increased age, and lower levels of education and income.
- Only half of Western U.P. adults who take part in leisure time physical activity report adequate levels of aerobic activity. Roughly 3 in 10 adults report adequate muscle strengthening activity.
- Roughly 20% of Western U.P. adults who take part in leisure time physical activity achieve recommended levels of both aerobic and strength conditioning.
- Adequate physical activity is more prevalent among those with higher levels of educational attainment.

Fruit and Vegetable Consumption

- An estimated 88.5% of Western U.P. adults fail to consume fruits and/or vegetables at least five times daily.
- Men were significantly more likely than women to report inadequate fruit and vegetable consumption (93.5% vs. 84.3%).
- Only 5.3% of adults with household incomes below $25,000 indicated that their daily consumption of fruits and vegetables met the recommendation.

Tobacco Use

- Over half of Western U.P. adults are current or former smokers (22.9% current; 29.8% former).
- Current smoking prevalence is highest among those with household incomes below $25,000, estimated to be 36.1%.
- In nearly every population subgroup, current smoking rates exceed the national Healthy People 2020 goal of 12.0 percent.
- Among current Western U.P. smokers, roughly half tried to quit smoking at least once in the past year.
- Smokeless tobacco use was more commonly reported among Western U.P. men than women (9.4% vs. 1.8%), a finding that is consistent with state and national data.

Alcohol Use

- An estimated 12.1% of Western U.P. adults reported heavy drinking rates (more than 2 alcoholic drinks per day for men; more than 1 per day for women).
- Binge drinking prevalence, the consumption of 5 or more drinks in 2 hours for men or 4 or more drinks in 2 hours for women, was estimated to be 14.7% among Western U.P. adults.

- Both heavy and binge drinking behaviors are more common with younger adults.
- An estimated 5.3% of Western U.P. adults drove after having had too much to drink at least once in the past month.

Chronic Disease Indicators

Hypertension (High Blood Pressure)

- An estimated 34.5% of Western U.P. adults have ever been told by a doctor that they had high blood pressure.
- Among those adults ever told they had high blood pressure, an estimated 75.2% are currently taking medication to control the condition.
- Significant differences in high blood pressure diagnosis rates were observed across age groups: 11.5% among 18 to 39 year olds, 42.2% among 40 to 64 year olds, and 63.9% among adults aged 65 and older.

Cholesterol

- Among Western U.P. adults, an estimated 74.8% have ever had their cholesterol checked and 66.9% had their cholesterol checked within the past five years.
- Among those who ever had their cholesterol checked, 48.4% were ever told their cholesterol was high.

Asthma

- Among Western U.P. adults, an estimated 15.1% had ever been told by a health care professional they had asthma.
- An estimated 8.4% of Western U.P. adults currently have asthma.
- Approximately 7.2% of Western U.P. adults have ever been told by a doctor that they had COPD. 2.6% of adults aged 18 to 39 years reported this diagnosis, compared to 12.6% of adults aged 65 and older.

Arthritis and Other Diseases of Chronic Inflammation

- Over a third of Western U.P. adults, and an estimated 60.7% of those aged 65 and older, have ever been told by a doctor they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.
- Among those with doctor-diagnosed arthritis, an estimated 54.1% reported that their usual activities were limited by this condition. Those adults with household incomes of $50,000 or more who are diagnosed with arthritis were less likely to be limited in their usual activities by arthritis (38.1%).

Heart Disease

- An estimated 3.7% of Western U.P. adults have been told by a doctor they had a heart attack, 6.8% have been told they had angina or coronary heart disease, and 2.6% have been told they had a stroke.
- The prevalence of heart attack, heart disease, and stroke increased with age.
- Men reported heart attack and heart disease at significantly higher rates than women in the Western U.P. (5.6% vs. 2.2% for heart attack and 11.3% vs. 3.2% for heart disease). These findings are consistent with state and national statistics.

Cancer

- Among Western U.P. adults, an estimated 11.6% have ever been told they had skin cancer or any other type of cancer. Rates of lifetime diagnosis were higher in Gogebic and Ontonagon counties.
- The likelihood of a cancer diagnosis increases with increasing age. The higher rates observed in Gogebic and Ontonagon counties are consistent with greater than 20% of the population of those counties being aged 65 or older as of the 2010 U.S. Census.

Diabetes

- Approximately 10% of Western U.P. adults have ever been told by a doctor that they had diabetes.
- Lifetime diabetes prevalence in the region was estimated to be 2.3% among adults aged 18 to 39, compared to 21.8% among adults aged 65 and older. This pattern of increasing prevalence with age is also observed in state and national data.

Kidney Disease

- An estimated 2.3% of Western U.P. adults have been diagnosed with kidney disease.
- Estimates of kidney disease prevalence increase markedly with age, from less than 1% among adults aged 18 to 39 to 6.8% among Western U.P. adults aged 65 and older.

Depression

- An estimated 24.2% of Western U.P. adults have at some point in their lives been told by a doctor they had a depressive disorder.
- The local estimated lifetime depression diagnosis rates were higher among adults younger than age 65 and among those with less than a 4-year college degree.
- Females reported a significantly higher prevalence of depression than males (29.3% vs. 17.8%).

Results

The complete set of survey findings appears on the pages that follow. The left page of each two-page spread contains the results for a particular indicator or set of indicators summarized by county (C). The right page of each two-page spread contains the results for the same indicator or set of indicators for the five Western U.P. counties combined, organized by population characteristic (PC). For ease of reference, a list of table topics and page numbers is provided below.

Table 1-C: General Health Status by County		
	General Health, Fair or Poor [a]	
	%	95% C.I.
Michigan	17.2	(16.2—18.3)
Western U.P.	19.6	(16.9—22.5)
Baraga County	18.9	(14.8—23.7)
Gogebic County	24.3	(18.8—30.8)
Houghton + Keweenaw Counties	17.0	(13.3—21.6)
Ontonagon County	23.6	(19.2—28.5)

[a] Among all adults, the proportion who reported that their health, in general, was either fair or poor. Other survey choices were Good, Very Good, and Excellent. (Baraga n=590, Gogebic n=575, Houghton+Keweenaw n=597, Ontonagon n=774)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

These data do not make evident any statistically significant differences in reported general health status among counties in the Western U.P. Within the region overall, the 65+ age group reported higher rates of fair or poor health than the 18-39 age group. Adults with household incomes less than $25,000 reported higher rates of fair or poor health than adults with household incomes of $50,000 or more.

Table 1-PC: General Health Status by Population Characteristic		
	General Health, Fair or Poor [a]	
	%	95% C.I.
Western U.P. Overall	19.6	(16.9—22.5)
Age		
18-39	13.8	(9.4—19.6)
40-64	21.4	(17.7—25.6)
65+	27.7	(23.3—32.5)
Gender		
Male	22.5	(18.1—27.5)
Female	17.3	(14.1—21.0)
Education		
Less than HS graduate	37.2	(23.3—53.7)
High school graduate	22.3	(17.9—27.4)
College 1-3 years	11.9	(9.2—15.2)
4 year degree or higher	18.7	(13.6—25.2)
Household Income		
$0 — $24,999	27.1	(21.8—33.0)
$25,000 — $49,999	17.2	(13.2—22.2)
$50,000 or more	11.6	(8.2—16.1)

[a] Among all adults, the proportion who reported that their health, in general, was either fair or poor. Other survey choices were Good, Very Good, and Excellent. (n=2536)

BRFSS surveys completed by Iron County adults between 2006 and 2008 resulted in an estimated 11.2% ± 3.3% of adults reporting fair or poor health, compared with 12.1% ± 0.8% of Wisconsin adults overall in 2008.

Table 2-C: Health Status on at Least 14 Days in the Past Month by County

	Poor Physical Health [a]		Poor Mental Health [b]		Activity Limitation [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	13.1	(12.2—14.1)	13.1	(12.1—14.2)	9.4	(8.5—10.2)
Western U.P.	12.0	(10.0—14.3)	10.4	(8.4—12.8)	8.4	(6.6—10.5)
Baraga County	13.1	(9.4—17.9)	10.5	(7.1—15.1)	7.2	(4.5—11.2)
Gogebic County	11.0	(7.9—15.0)	12.4	(7.9—18.8)	8.4	(5.6—12.5)
Houghton + Keweenaw Counties	11.6	(8.6—15.4)	8.6	(6.0—12.1)	8.2	(5.7—11.6)
Ontonagon County	15.1	(11.6—19.2)	15.8	(12.1—20.4)	10.3	(7.8—13.6)

[a] Among all adults, the proportion who reported 14 or more days of poor physical health, which includes physical illness and injury, during the past 30 days. (Baraga n=585, Gogebic n=571, Houghton+Keweenaw n=597, Ontonagon n=767)

[b] Among all adults, the proportion who reported 14 or more days of poor mental health, which includes stress, depression, and problems with emotions, during the past 30 days. (Baraga n=583, Gogebic n=575, Houghton+Keweenaw n=593, Ontonagon n=770)

[c] Among all adults, the proportion who reported 14 or more days in the past 30 days in which either poor physical health or poor mental health kept respondents from doing their usual activities, such as self-care, work, and recreation. (Baraga n=570, Gogebic n=553, Houghton+Keweenaw n=578, Ontonagon n=739)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Statistically significant differences in reported rates of poor physical health between counties in the Western U.P. are not evident in these data. Within the region overall, adults age 40 and older reported higher rates of poor physical health than the 18-39 age group. Lower levels of educational attainment correlated directly with higher rates of poor physical health. Adults with household incomes less than $50,000 reported higher rates of poor physical health than those with incomes above that amount.

An estimated 17.1 percent of people with household incomes under $25,000 reported 14 or more days of poor mental health in the past month, significantly higher than adults living in households with higher incomes. The low income group also more frequently reported that poor physical or mental health limited their activities. Activity limitation was also more common among those with lower education levels.

Table 2-PC: Health Status on at Least 14 Days in the Past Month by Population Characteristic

	Poor Physical Health [a]		Poor Mental Health [b]		Activity Limitation [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	12.0	(10.0—14.3)	10.4	(8.4—12.8)	8.4	(6.6—10.5)
Age						
18-39	4.9	(2.5—9.4)	8.3	(5.2—13.1)	3.4	(1.4—7.9)
40-64	15.5	(12.5—19.0)	13.8	(10.7—17.6)	12.2	(9.5—15.6)
65+	18.8	(14.6—23.8)	6.8	(4.8—9.5)	9.9	(6.9—14.0)
Gender						
Male	13.5	(10.4—17.3)	8.3	(5.8—11.9)	8.8	(6.3—12.0)
Female	10.8	(8.3—13.8)	12.1	(9.4—15.5)	8.0	(5.8—11.0)
Education						
Less than HS graduate	22.8	(13.5—35.7)	22.1	(11.3—38.6)	16.9	(9.5—28.2)
High school graduate	15.5	(11.9—20.0)	9.7	(7.2—13.0)	11.4	(8.1—15.8)
College 1-3 years	9.0	(6.4—12.5)	10.4	(7.5—14.3)	6.3	(4.1—9.7)
4 year degree or higher	4.3	(2.8—6.6)	5.4	(3.2—8.9)	1.8	(1.0—3.3)
Household Income						
$0 — $24,999	18.1	(14.1—22.9)	17.1	(12.8—22.3)	13.1	(9.7—17.5)
$25,000 — $49,999	11.0	(7.9—15.1)	5.6	(3.7—8.3)	6.3	(4.1—9.6)
$50,000 or more	4.3	(2.5—7.3)	4.1	(2.3—7.2)	3.1	(1.5—6.3)

[a] Among all adults, the proportion who reported 14 or more days of poor physical health, which includes physical illness and injury, during the past 30 days. (n=2520)

[b] Among all adults, the proportion who reported 14 or more days of poor mental health, which includes stress, depression, and problems with emotions, during the past 30 days. (n=2521)

[c] Among all adults, the proportion who reported 14 or more days in the past 30 days in which either poor physical health or poor mental health kept respondents from doing their usual activities, such as self-care, work, and recreation. (n=2440)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 3-C: Mean Number of Days of Poor Physical Health, Poor Mental Health, and Activity Limitations by County

	Poor Physical Health [a]		Poor Mental Health [b]		Activity Limitation [c]	
	Mean # of Days	95% C.I.	Mean # of Days	95% C.I.	Mean # of Days	95% C.I.
Michigan	4.1	(3.9—4.4)	4.2	(4.0—4.5)	2.9	(2.7—3.1)
Western U.P.	4.2	(3.7—4.8)	3.9	(3.4—4.4)	2.7	(2.1—3.1)
Baraga County	4.4	(3.2—5.5)	4.2	(3.3—5.1)	2.8	(1.9—3.7)
Gogebic County	4.1	(3.2—5.0)	3.9	(2.8—5.1)	2.7	(1.9—3.6)
Houghton + Keweenaw Counties	4.1	(3.2—5.0)	3.6	(2.8—4.4)	2.5	(1.8—3.2)
Ontonagon County	5.1	(4.1—6.1)	4.9	(3.9—5.8)	3.2	(2.5—3.9)

[a] Among all adults, the mean number of days during the past 30 days in which physical health, including illness and injury, was not good. (Baraga n=585, Gogebic n=571, Houghton+Keweenaw n=597, Ontonagon n=768)

[b] Among all adults, the mean number of days during the past 30 days in which mental health, including stress, depression, and problems with emotions, was not good. (Baraga n=584, Gogebic n=575, Houghton+Keweenaw n=593, Ontonagon n=770)

[c] Among all adults, the mean number of days during the past 30 days in which poor physical health or poor mental health kept respondent from doing their usual activities, such as self-care, work, and recreation. (Baraga n=570, Gogebic n=553, Houghton+Keweenaw n=578, Ontonagon n=739)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

In general, the mean number of days of poor physical health, poor mental health, and activity limitations increased with age, decreased with greater educational attainment, decreased with greater household income, and did not vary substantially with gender.

Table 3-PC: Mean Number of Days of Poor Physical Health, Poor Mental Health, and Activity Limitations by Population Characteristic

	Poor Physical Health [a]		Poor Mental Health [b]		Activity Limitation [c]	
	Mean # of Days	95% C.I.	Mean # of Days	95% C.I.	Mean # of Days	95% C.I.
Western U.P. Overall	4.2	(3.7—4.8)	3.9	(3.4—4.4)	2.7	(2.2—3.1)
Age						
18-39	2.5	(1.5—3.4)	3.7	(2.8—4.6)	1.5	(0.8—2.2)
40-64	5.1	(4.3—5.9)	4.6	(3.7—5.5)	3.6	(2.9—4.3)
65+	6.0	(4.9—7.1)	2.4	(1.9—2.9)	3.1	(2.3—3.8)
Gender						
Male	4.6	(3.7—5.4)	3.2	(2.4—4.1)	2.8	(2.1—3.5)
Female	4.0	(3.3—4.7)	4.4	(3.7—5.1)	2.6	(2.0—3.2)
Education						
Less than HS graduate	7.6	(4.6—10.5)	6.4	(2.9—9.9)	4.6	(2.3—6.8)
High school graduate	5.1	(4.0—6.2)	4.0	(3.2—4.8)	3.2	(2.4—4.0)
College 1-3 years	3.4	(2.7—4.1)	3.7	(3.0—4.5)	2.4	(1.6—3.2)
4 year degree or higher	2.1	(1.6—2.6)	2.6	(2.0—3.2)	1.2	(0.8—1.5)
Household Income						
$0 — $24,999	6.0	(4.9—7.1)	5.4	(4.3—6.5)	4.2	(3.1—5.2)
$25,000 — $49,999	3.9	(2.9—4.8)	3.0	(2.4—3.6)	2.1	(1.4—2.9)
$50,000 or more	2.0	(1.5—2.5)	2.0	(1.5—2.6)	1.2	(0.7—1.7)

[a] Among all adults, the mean number of days during the past 30 days in which physical health, including illness and injury, was not good. (n=2521)

[b] Among all adults, the mean number of days during the past 30 days in which mental health, including stress, depression, and problems with emotions, was not good. (n=2522)

[c] Among all adults, the mean number of days during the past 30 days in which poor physical health or poor mental health kept respondent from doing their usual activities, such as self-care, work, and recreation. (n=2440)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 4-C: Disability by County

	Any Disability [a]		Any Activity Limitation [b]		Used Special Equipment [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	28.2	(27.0—29.5)	26.4	(25.2—27.7)	8.4	(7.7—9.2)
Western U.P.	25.2	(22.2—28.3)	24.3	(21.4—27.4)	7.5	(6.1—9.3)
Baraga County	26.7	(21.4—32.8)	24.9	(20.4—30.1)	7.2	(5.2—9.9)
Gogebic County	30.1	(24.7—36.1)	27.7	(22.2—33.9)	8.6	(6.1—12.0)
Houghton + Keweenaw Counties	22.0	(17.7—27.0)	21.9	(17.6—26.8)	6.6	(4.5—9.6)
Ontonagon County	30.4	(26.5—34.5)	28.6	(24.3—33.4)	10.6	(8.1—13.7)

[a] Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems, or reported that they required use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem. (Baraga n=588, Gogebic n=564, Houghton+Keweenaw n=587, Ontonagon n=749)

[b] Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems. (Baraga n=588, Gogebic n=567, Houghton+Keweenaw n=589, Ontonagon n=749)

[c] Among all adults, the proportion who reported that they required use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem. (Baraga n=589, Gogebic n=564, Houghton+Keweenaw n=591, Ontonagon n=748)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Roughly one in four adults in the Western U.P. reported activity limitations because of either physical, mental, or emotional problems, or because they require special equipment due to a health problem. The prevalence of disability increased with age and decreased with increasing household income level.

Table 4-PC: Disability by Population Characteristic

	Any Disability [a]		Any Activity Limitation [b]		Used Special Equipment [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	25.2	(22.2—28.3)	24.3	(21.4—27.4)	7.5	(6.1—9.3)
Age						
18-39	11.0	(6.9—17.0)	10.8	(6.8—16.6)	2.4	(0.9—6.5)
40-64	32.8	(28.7—37.1)	32.4	(28.3—36.7)	7.5	(5.5—10.2)
65+	38.4	(33.8—43.3)	34.7	(30.1—39.7)	18.8	(15.2—22.9)
Gender						
Male	28.5	(23.5—34.0)	28.0	(23.2—33.3)	8.1	(6.0—10.9)
Female	22.6	(19.1—26.4)	21.4	(18.1—25.2)	7.1	(5.3—9.5)
Education						
Less than HS graduate	53.8	(40.7—66.4)	51.4	(37.9—64.7)	15.0	(8.7—24.7)
High school graduate	28.3	(23.5—33.7)	27.3	(22.5—32.6)	9.6	(6.7—13.5)
College 1-3 years	20.3	(15.9—25.6)	19.8	(15.9—24.3)	5.0	(3.6—7.0)
4 year degree or higher	15.0	(11.3—19.6)	13.7	(10.2—18.3)	3.9	(2.4—6.4)
Household Income						
$0 — $24,999	35.1	(29.3—41.5)	33.6	(28.2—39.5)	10.9	(8.4—14.0)
$25,000 — $49,999	21.9	(17.8—26.7)	21.5	(17.4—26.3)	7.5	(5.0—11.1)
$50,000 or more	12.8	(9.2—17.7)	12.1	(8.6—16.6)	1.8	(1.0—3.0)

[a] Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems, or reported that they required use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem. (n=2488)

[b] Among all adults, the proportion who reported being limited in any activities because of physical, mental, or emotional problems. (n=2493)

[c] Among all adults, the proportion who reported that they required use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone) due to a health problem. (n=2492)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 5-C: Weight Status by County

	Obese [a]		Overweight [b]		Normal Weight [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	31.3	(30.0—32.6)	34.2	(32.8—35.5)	33.0	(31.6—34.4)
Western U.P.	29.5	(26.3—33.0)	39.2	(35.2—43.4)	29.9	(26.0—34.1)
Baraga County	37.1	(30.1—44.6)	34.5	(28.2—41.3)	23.7	(18.9—29.4)
Gogebic County	32.7	(27.0—39.1)	41.0	(34.9—47.3)	25.7	(21.0—31.0)
Houghton + Keweenaw Counties	24.7	(20.0—30.0)	40.7	(34.2—47.5)	33.6	(27.4—40.5)
Ontonagon County	40.6	(36.3—45.1)	33.5	(29.6—37.7)	24.9	(21.1—29.1)

Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/(height in meters)^2]. Weight and height were self-reported.

[a] Among all adults, the proportion of respondents whose BMI was greater than or equal to 30.0. (Baraga n=589, Gogebic n=569, Houghton+Keweenaw n=590, Ontonagon n=763)

[b] Among all adults, the proportion of respondents whose BMI was greater than or equal to 25.0, but less than 30.0. (Baraga n=589, Gogebic n=569, Houghton+Keweenaw n=590, Ontonagon n=763)

[c] Among all adults, the proportion of respondents whose BMI was greater than or equal to 18.5, but less than 25.0. Estimated percentage of individuals with a BMI that would classify them as underweight not shown. To calculate, subtract the percentages obese, overweight, and normal weight from 100%. (Baraga n=589, Gogebic n=569, Houghton+Keweenaw n=590, Ontonagon n=763)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Obesity and overweight are proven risk factors for heart disease, stroke, diabetes, and some forms of cancer. An estimated 68.7 percent of Western U.P. adults are either obese or overweight. High rates of obesity and overweight were observed among both genders, and across all ages, incomes, and education levels.

Table 5-PC: Weight Status by Population Characteristic

	Obese [a]		Overweight [b]		Normal Weight [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	29.5	(26.3—33.0)	39.2	(35.2—43.4)	29.9	(26.0—34.1)
Age						
18-39	25.7	(19.4—33.1)	36.5	(28.7—45.1)	35.7	(27.5—44.8)
40-64	32.3	(28.2—36.8)	41.0	(35.5—46.7)	26.0	(22.1—30.2)
65+	31.0	(26.7—35.6)	40.9	(36.3—45.6)	26.9	(22.8—31.4)
Gender						
Male	27.2	(22.1—32.9)	48.1	(40.9—55.3)	23.9	(17.6—31.6)
Female	31.4	(27.4—35.7)	32.0	(27.8—36.6)	34.8	(30.4—39.5)
Education						
Less than HS graduate	36.4	(22.5—53.0)	40.1	(22.1—61.2)	23.1	(12.7—38.3)
High school graduate	30.7	(25.4—36.7)	40.3	(34.2—46.8)	27.0	(21.2—33.8)
College 1-3 years	28.2	(22.9—34.1)	38.2	(31.5—45.4)	32.1	(25.1—40.1)
4 year degree or higher	26.2	(20.8—32.4)	38.5	(31.9—45.7)	34.7	(28.0—42.1)
Household Income						
$0 — $24,999	32.1	(25.9—38.9)	36.4	(28.6—44.9)	28.4	(21.6—36.3)
$25,000 — $49,999	32.0	(26.5—38.0)	40.8	(34.6—47.3)	27.0	(21.7—33.1)
$50,000 or more	27.3	(21.7—33.8)	41.5	(34.4—48.9)	30.9	(24.4—38.3)

Note: BMI, body mass index, is defined as weight (in kilograms) divided by height (in meters) squared [weight in kg/(height in meters)^2]. Weight and height were self-reported.

[a] Among all adults, the proportion of respondents whose BMI was greater than or equal to 30.0. (n=2511)

[b] Among all adults, the proportion of respondents whose BMI was greater than or equal to 25.0, but less than 30.0. (n=2511)

[c] Among all adults, the proportion of respondents whose BMI was greater than or equal to 18.5, but less than 25.0. Estimated percentage of individuals with a BMI that would classify them as underweight not shown. To calculate, subtract the percentages obese, overweight, and normal weight from 100%. (n=2511)

Iron County BRFSS surveys completed between 2006 and 2008 estimated that 25.5% ± 4.6% of adults had BMI measurements qualifying as obese, compared with 26.6% ± 1.1% of Wisconsin adults overall in 2008. Another 40.6% ± 5.2% of Iron County adults were overweight, compared to 37.4% ± 1.2% for Wisconsin overall.

Table 6a-C: Health Care Access by County						
	No Health Care Coverage [a] (18-64 Year Olds)		No Personal Health Care Provider [b]		No Health Care Access During Past 12 Months Due to Cost [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	18.3	(17.0—19.6)	15.5	(14.4—16.7)	16.5	(15.4—17.6)
Western U.P.	18.6	(15.5—22.2)	17.1	(14.1—20.6)	22.3	(19.0—26.0)
Baraga County	18.8	(12.7—26.9)	15.5	(10.9—21.7)	21.7	(16.4—28.2)
Gogebic County	22.4	(16.7—29.3)	16.0	(11.9—21.2)	26.2	(20.6—32.7)
Houghton + Keweenaw Counties	15.5	(11.0—21.2)	16.1	(11.4—22.3)	20.6	(15.5—26.9)
Ontonagon County	28.3	(22.4—35.0)	27.3	(22.4—32.7)	23.1	(19.0—27.8)

[a] Among adults aged 18-64 years, the proportion who reported having no health care coverage, including health insurance, prepaid plans such as HMOs, or government plans, such as Medicare. (Baraga n=367, Gogebic n=303, Houghton+Keweenaw n=371, Ontonagon n=405)

[b]Among all adults, the proportion who reported that they did not have anyone that they thought of as their personal doctor or health care provider. (Baraga n=585, Gogebic n=573, Houghton+Keweenaw n=593, Ontonagon n=770)

[c] Among all adults, the proportion who reported that in the past 12 months, they could not see a doctor when they needed to due to the cost. (Baraga n=587, Gogebic n=574, Houghton+Keweenaw n=596, Ontonagon n=772)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

In the United States, health care coverage becomes universal at age 65 because of the Medicare program. An estimated 18.6 percent of Western U.P. adults between the ages of 18 and 64 have no health care coverage. Lack of health insurance is most prevalent in Ontonagon County, and among those with lower household incomes and lower levels of educational attainment.

Ontonagon County adults were least likely to have a personal health care provider. Younger adults, and those with lower household incomes, were less likely to have a personal health care provider.

Cost presented a barrier to accessing health care for an estimated 22.3 percent of Western U.P. adults.

Table 6a-PC: Health Care Access by Population Characteristic

	No Health Care Coverage [a] (18-64 Year Olds)		No Personal Health Care Provider [b]		No Health Care Access During Past 12 Months Due to Cost [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	18.6	(15.5—22.2)	17.1	(14.1—20.6)	22.3	(19.0—26.0)
Age						
18-39	19.8	(14.4—26.7)	27.7	(20.8—35.8)	29.8	(22.7—38.1)
40-64	17.5	(14.5—21.0)	12.0	(9.8—14.7)	22.3	(18.9—26.1)
65+			7.0	(5.0—9.7)	6.2	(3.6—10.6)
Gender						
Male	19.4	(14.1—26.1)	20.1	(14.8—26.6)	22.4	(16.7—29.4)
Female	18.0	(14.5—22.2)	14.8	(11.7—18.5)	22.2	(18.7—26.2)
Education						
Less than HS graduate	18.0	(6.6—40.8)	7.5	(3.9—13.9)	13.9	(7.0—25.6)
High school graduate	23.5	(17.8—30.3)	17.8	(13.2—23.5)	26.1	(20.0—33.3)
College 1-3 years	20.2	(15.1—26.5)	18.7	(13.0—26.1)	24.4	(19.3—30.4)
4 year degree or higher	7.4	(4.3—12.6)	18.2	(12.8—25.0)	15.2	(10.6—21.4)
Household Income						
$0 — $24,999	31.5	(24.7—39.3)	24.9	(18.4—32.7)	32.6	(26.5—39.2)
$25,000 — $49,999	21.8	(15.8—29.3)	16.7	(12.4—22.1)	22.9	(17.8—29.0)
$50,000 or more	4.0	(1.1—12.9)	9.9	(6.2—15.5)	6.4	(3.0—13.4)

[a] Among adults aged 18-64 years, the proportion who reported having no health care coverage, including health insurance, prepaid plans such as HMOs, or government plans, such as Medicare. (n=1446)

[b] Among all adults, the proportion who reported that they did not have anyone that they thought of as their personal doctor or health care provider. (n=2521)

[c] Among all adults, the proportion who reported that in the past 12 months, they could not see a doctor when they needed to due to the cost. (n=2529)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 6b-C: Health Care Access by County		
	No Health Care Access During Past 12 Months Due to Lack of Transportation [a]	
	%	95% C.I.
Michigan	Not available.	
Western U.P.	3.9	(2.7—5.7)
Baraga County	4.1	(2.5—6.9)
Gogebic County	6.5	(3.3—12.4)
Houghton + Keweenaw Counties	2.4	(1.1—5.2)
Ontonagon County	5.8	(3.7—9.0)

[a] Among all adults, the proportion who reported that in the past 12 months, they could not see a doctor when they needed to due to a lack of transportation. This question is not part of the statewide BRFS. (Baraga n=587, Gogebic n=574, Houghton+Keweenaw n=595, Ontonagon n=764)

Lack of transportation was a barrier to accessing health care services for an estimated 3.9 percent of Western U.P. adults, and 8.5 percent of adults with household incomes below $25,000.

Table 6b-PC: Health Care Access by Population Characteristic		
	No Health Care Access During Past 12 Months Due to Lack of Transportation [a]	
	%	95% C.I.
Western U.P. Overall	3.9	(2.7—5.7)
Age		
18-39	3.7	(1.5—9.0)
40-64	4.9	(3.4—6.8)
65+	1.9	(1.2—3.1)
Gender		
Male	4.6	(2.7—7.6)
Female	3.4	(1.9—5.9)
Education		
Less than HS graduate	10.2	(3.5—26.2)
High school graduate	4.3	(3.0—6.2)
College 1-3 years	3.2	(1.5—6.9)
4 year degree or higher	0.9	(0.4—2.1)
Household Income		
$0 — $24,999	8.5	(5.7—12.3)
$25,000 — $49,999	0.6	(0.2—1.7)
$50,000 or more	0.0	—

[a] Among all adults, the proportion who reported that in the past 12 months, they could not see a doctor when they needed to due to a lack of transportation. This question is not part of the statewide BRFS. (n=2520)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 7-C: No Leisure-Time Physical Activity by County		
	No Leisure-Time Physical Activity [a]	
	%	95% C.I.
Michigan	23.6	(22.4—24.8)
Western U.P.	14.8	(11.8—18.4)
Baraga County	15.6	(11.3—21.2)
Gogebic County	15.8	(11.3—21.6)
Houghton + Keweenaw Counties	14.2	(9.7—20.4)
Ontonagon County	15.6	(12.8—18.8)

[a] Among all adults, the proportion who reported not participating in any leisure-time physical activities or exercises such as running, calisthenics, golf, gardening, or walking during the past month. (Baraga n=589, Gogebic n=564, Houghton+Keweenaw n=594, Ontonagon n=758)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Regular physical activity reduces the risk of cardiovascular disease, diabetes, colon and breast cancers, and osteoporosis. Roughly 1 in 7 Western U.P. adults reported no leisure time physical activity. No leisure time physical activity was more prevalent with increased age, and lower levels of education and income.

Table 7-PC: No Leisure-Time Physical Activity by Population Characteristic		
	No Leisure-Time Physical Activity [a]	
	%	95% C.I.
Western U.P. Overall	14.8	(11.8—18.4)
Age		
18-39	5.2	(2.6—10.3)
40-64	13.7	(8.6—21.2)
65+	39.1	(34.2—44.3)
Gender		
Male	19.6	(14.0—26.8)
Female	11.0	(8.6—14.0)
Education		
Less than HS graduate	53.9	(36.2—70.6)
High school graduate	15.2	(11.8—19.4)
College 1-3 years	8.9	(6.4—12.1)
4 year degree or higher	5.0	(2.9—8.6)
Household Income		
$0 — $24,999	22.6	(15.8—31.2)
$25,000 — $49,999	12.0	(8.8—16.3)
$50,000 or more	5.5	(3.5—8.6)

[a] Among all adults, the proportion who reported not participating in any leisure-time physical activities or exercises such as running, calisthenics, golf, gardening, or walking during the past month. (n=2505)

Responses to a similar question on surveys collected from 2006 to 2008 resulted in an estimated 23.8% ± 4.4% of Iron County adults engaging in no exercise in the past 30 days. This estimate can be compared to 22.0% ± 1.0% for Wisconsin adults overall in 2008.

Table 8-C: Aerobic Physical Activity and Muscle Strengthening by County

	Adequate Aerobic Physical Activity [a]		Adequate Muscle Strengthening (≥ 2 days/week) [b]	
	%	95% C.I.	%	95% C.I.
Michigan	Not comparable. Significant question phrasing differences.			
Western U.P.	50.0	(45.6—54.3)	29.0	(25.4—32.8)
Baraga County	46.3	(38.6—54.2)	26.3	(21.3—32.1)
Gogebic County	52.0	(45.3—58.6)	31.4	(26.0—37.3)
Houghton + Keweenaw Counties	50.1	(43.1—57.0)	28.2	(22.6—34.6)
Ontonagon County	49.4	(44.4—54.3)	30.8	(26.8—35.1)

[a] Among adults who participate in some form of leisure-time physical activity, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 60 minutes per week, or an equivalent combination of moderate and vigorous physical activities. (Baraga n=489, Gogebic n=459, Houghton+Keweenaw n=491, Ontonagon n=604)

[b] Among all adults, the proportion who reported that they do muscle strengthening activities on two or more days per week. (Baraga n=595, Gogebic n=578, Houghton+Keweenaw n=600, Ontonagon n=779)

Aerobic exercise lowers the risk of cardiovascular disease, and muscle strengthening exercise lowers the risk of osteoporosis. Half of Western U.P. adults who participate in some form of leisure-time physical activity reported adequate levels of aerobic activity. Roughly 3 in 10 Western U.P. reported adequate muscle strengthening activity.

Table 8-PC: Aerobic Physical Activity and Muscle Strengthening by Population Characteristic

	Adequate Aerobic Physical Activity [a]		Adequate Muscle Strengthening (≥ 2 days/week) [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	50.0	(45.6—54.3)	29.0	(25.4—32.8)
Age				
18-39	49.1	(40.3—57.9)	30.9	(23.3—39.7)
40-64	49.9	(45.5—54.3)	30.1	(26.1—34.5)
65+	53.2	(47.7—58.6)	22.1	(18.8—25.7)
Gender				
Male	50.6	(42.8—58.3)	28.0	(21.9—34.9)
Female	49.5	(44.5—54.5)	29.8	(25.8—34.2)
Education				
Less than HS graduate	38.4	(22.1—57.7)	19.4	(10.8—32.4)
High school graduate	40.1	(33.4—47.3)	20.7	(16.4—25.7)
College 1-3 years	55.7	(47.9—63.1)	35.7	(28.6—43.6)
4 year degree or higher	59.8	(52.3—66.8)	37.8	(31.4—44.6)
Household Income				
$0 — $24,999	50.2	(41.9—58.5)	27.9	(21.3—35.7)
$25,000 — $49,999	51.1	(44.2—58.0)	28.9	(23.4—35.1)
$50,000 or more	51.7	(44.1—59.3)	32.0	(25.6—39.2)

[a] Among adults who participate in some form of leisure-time physical activity, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 60 minutes per week, or an equivalent combination of moderate and vigorous physical activities. (n=2043)

[b] Among all adults, the proportion who reported that they do muscle strengthening activities on two or more days per week. (n=2552)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 9-C: Adequate Physical Activity by County		
	Adequate Physical Activity [a]	
	%	95% C.I.
Michigan	Not comparable. Significant question phrasing differences.	
Western U.P.	21.9	(18.4—25.8)
Baraga County	19.5	(14.9—25.0)
Gogebic County	24.9	(19.9—30.7)
Houghton + Keweenaw Counties	21.3	(15.9—27.8)
Ontonagon County	22.2	(18.2—26.8)

[a] Among adults who participate in some form of leisure-time physical activity, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 60 minutes per week, or an equivalent combination of moderate and vigorous physical activities **and** also participate in muscle strengthening activities on two or more days per week. (Baraga n=489, Gogebic n=459, Houghton+Keweenaw n=491, Ontonagon n=604)

This indicator reflects those adults who reported both adequate aerobic activity and adequate muscle strengthening activity. Roughly 1 in 5 Western U.P. adults who participate in some form of leisure-time physical activity achieve recommended levels of both elements of physical fitness. Adequate physical activity is more prevalent among those with higher levels of educational attainment.

Table 9-PC: Adequate Physical Activity by Population Characteristic		
	Adequate Physical Activity [a]	
	%	95% C.I.
Western U.P. Overall	21.9	(18.4—25.8)
Age		
18-39	21.7	(15.0—30.2)
40-64	22.7	(19.4—26.4)
65+	19.8	(16.1—24.2)
Gender		
Male	22.4	(16.2—30.1)
Female	21.6	(18.0—25.6)
Education		
Less than HS graduate	15.7	(7.4—30.0)
High school graduate	12.6	(9.5—16.6)
College 1-3 years	26.8	(19.7—35.2)
4 year degree or higher	30.9	(24.7—37.8)
Household Income		
$0 — $24,999	22.3	(14.9—31.9)
$25,000 — $49,999	22.5	(17.3—28.8)
$50,000 or more	21.9	(17.4—27.3)

[a] Among adults who participate in some form of leisure-time physical activity, the proportion who reported that they do either moderate physical activities for at least 150 minutes per week, vigorous physical activities for at least 60 minutes per week, or an equivalent combination of moderate and vigorous physical activities **and** also participate in muscle strengthening activities on two or more days per week. (n=2043)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 10-C: Adequate Fruit and Vegetable Consumption by County		
	Fruits and Vegetables (≥ 5 times/day) [a]	
	%	95% Confidence Interval
Michigan	17.8	(16.8—19.0)
Western U.P.	11.5	(9.5—14.0)
Baraga County	9.5	(6.8—13.1)
Gogebic County	9.2	(6.5—12.9)
Houghton + Keweenaw Counties	13.5	(10.2—17.7)
Ontonagon County	7.9	(6.1—10.1)

[a] Among all adults, the proportion whose total reported consumption of fruits (including juice) and vegetables was five or more times per day. (Baraga n=580, Gogebic n=570, Houghton+Keweenaw n=594, Ontonagon n=770)

The local survey asked responders to focus on the past 7 days when reporting their eating habits.

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

An estimated 11.5 percent of Western U.P. adults reported consuming fruits and/or vegetables at least five times daily. Women were significantly more likely than men to report adequate fruit and vegetable consumption. Only 5.3 percent of adults with household incomes below $25,000 indicated that their consumption met the recommendation.

Table 10-PC: Adequate Fruit and Vegetable Consumption by Population Characteristic		
	Fruits and Vegetables (≥ 5 times/day) [a]	
	%	95% Confidence Interval
Western U.P. Overall	11.5	(9.5—14.0)
Age		
18-39	9.9	(6.1—15.7)
40-64	13.0	(10.4—16.2)
65+	11.5	(9.1—14.3)
Gender		
Male	6.5	(4.5—9.1)
Female	15.7	(12.5—19.5)
Education		
Less than HS graduate	3.8	(1.6—8.7)
High school graduate	10.1	(7.0—14.5)
College 1-3 years	12.6	(8.8—17.8)
4 year degree or higher	16.4	(12.6—21.0)
Household Income		
$0 — $24,999	5.3	(3.4—8.2)
$25,000 — $49,999	15.0	(10.5—21.0)
$50,000 or more	14.9	(11.1—19.7)

[a] Among all adults, the proportion whose total reported consumption of fruits (including juice) and vegetables was five or more times per day. (n=2514)

The local survey asked responders to focus on the past 7 days when reporting their eating habits.

Iron County data were not available for the indicators summarized on this and the previous page.

Table 11-C: Cigarette Smoking by County

	Current Smoking [a]		Former Smoking [b]		Never Smoked [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	23.3	(22.0—24.6)	25.7	(24.5—26.8)	51.0	(49.6—52.4)
Western U.P.	22.9	(19.7—26.3)	29.8	(26.6—33.2)	47.5	(43.4—51.7)
Baraga County	25.2	(19.8—31.6)	29.6	(24.6—35.2)	44.9	(37.8—52.3)
Gogebic County	25.4	(19.1—32.9)	30.4	(25.5—35.9)	43.8	(37.7—50.0)
Houghton + Keweenaw Counties	21.2	(16.6—26.6)	28.5	(23.4—34.1)	50.6	(44.0—57.2)
Ontonagon County	23.4	(19.1—28.2)	35.8	(31.3—40.5)	41.2	(36.8—45.7)

[a] Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life and that they smoke cigarettes now, either every day or on some days. (Baraga n=589, Gogebic n=571, Houghton+Keweenaw n=596, Ontonagon n=770)

[b] Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life, but they do not smoke cigarettes now. (Baraga n=589, Gogebic n=570, Houghton+Keweenaw n=597, Ontonagon n=770)

[c] Baraga n=589, Gogebic n=574, Houghton+Keweenaw n=597, Ontonagon n=770

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

According to the CDC, cigarette smoking is the leading preventable cause of death in the United States. Smoking is a major contributing factor to heart disease, cancer, and lung disease. Over half of Western U.P. adults reported being current or former smokers. Current smoking prevalence is highest among those with household incomes below $25,000. In nearly every population subgroup, current smoking rates exceed the national Healthy People 2020 goal of 12.0 percent.

Table 11-PC: Cigarette Smoking by Population Characteristic

	Current Smoking [a]		Former Smoking [b]		Never Smoked [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	22.9	(19.7—26.3)	29.8	(26.6—33.2)	47.5	(43.4—51.7)
Age						
18-39	27.3	(20.9—34.9)	20.2	(14.5—27.3)	53.4	(44.9—61.8)
40-64	23.4	(19.6—27.7)	31.2	(27.1—35.5)	45.3	(40.0—50.7)
65+	11.8	(8.5—16.2)	47.1	(42.3—52.1)	40.2	(35.6—45.0)
Gender						
Male	20.2	(15.6—25.8)	36.6	(30.7—42.8)	43.4	(36.0—51.0)
Female	25.0	(21.0—29.5)	24.3	(21.0—28.0)	50.9	(46.2—55.5)
Education						
Less than HS graduate	40.8	(25.5—58.2)	19.9	(12.2—30.7)	41.4	(23.8—61.5)
High school graduate	24.0	(19.0—29.9)	36.5	(30.6—42.8)	39.3	(33.1—45.9)
College 1-3 years	23.7	(18.9—29.2)	28.7	(24.0—34.0)	47.6	(40.3—55.0)
4 year degree or higher	9.1	(5.6—14.3)	23.9	(18.9—29.7)	66.6	(60.0—72.6)
Household Income						
$0 — $24,999	36.1	(29.5—43.2)	24.8	(19.7—30.7)	40.0	(31.9—48.7)
$25,000 — $49,999	17.6	(13.2—23.0)	38.7	(32.9—44.8)	43.3	(37.1—49.6)
$50,000 or more	12.8	(8.7—18.5)	29.0	(23.5—35.3)	58.4	(51.3—65.3)

[a] Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life and that they smoke cigarettes now, either every day or on some days. (n=2526)

[b] Among all adults, the proportion who reported that they had ever smoked at least 100 cigarettes (5 packs) in their life, but they do not smoke cigarettes now. (n=2526)

[c] n=2530

Iron County data from BRFSS surveys completed between 2006 and 2008 resulted in an estimated 20.9% ± 4.2% of adults being current smokers, compared with 19.9% ± 0.9% of Wisconsin adults overall in 2008.

Table 12-C: Current Smokers Who Attempted to Quit by County		
	Tried to Quit Smoking One Day or Longer in Past Year [a]	
	%	95% C.I.
Michigan	62.4	(59.2—65.5)
Western U.P.	51.2	(42.9—59.5)
Baraga County	60.8	(46.1—73.8)
Gogebic County	57.0	(40.9—71.8)
Houghton + Keweenaw Counties	47.9	(35.2—60.8)
Ontonagon County	45.5	(35.8—55.6)

[a] Among current smokers, the proportion who reported that during the past 12 months, they had tried to quit smoking for one day or longer. (Baraga n=107, Gogebic n=91, Houghton+Keweenaw n=101, Ontonagon n=136)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Among current Western U.P. smokers, roughly half tried to quit smoking at least once in the past year. Overlapping confidence intervals prevent conclusions about statistically significant differences between counties or population subgroups from being drawn.

Table 12-PC: Current Smokers Who Attempted to Quit by Population Characteristic		
	Tried to Quit Smoking One Day or Longer in Past Year [a]	
	%	95% C.I.
Western U.P. Overall	51.2	(42.9—59.5)
Age		
18-39	55.9	(40.8—70.0)
40-64	46.3	(37.0—56.0)
65+	51.3	(35.1—67.3)
Gender		
Male	55.6	(41.4—68.9)
Female	48.4	(38.4—58.5)
Education		
Less than HS graduate	53.1	(30.5—74.5)
High school graduate	47.4	(34.5—60.5)
College 1-3 years	50.3	(37.2—63.3)
4 year degree or higher	70.7	(49.7—85.5)
Household Income		
$0 — $24,999	55.0	(43.9—65.7)
$25,000 — $49,999	51.9	(36.4—67.1)
$50,000 or more	48.1	(28.2—68.6)

[a] Among current smokers, the proportion who reported that during the past 12 months, they had tried to quit smoking for one day or longer. (n=435)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 13-C: Smokeless Tobacco Use by County		
	Current Smokeless Tobacco Use [a]	
	%	95% C.I.
Michigan	4.4	(3.8—5.1)
Western U.P.	5.2	(3.5—7.7)
Baraga County	4.6	(2.6—8.2)
Gogebic County	1.3	(0.5—3.8)
Houghton + Keweenaw Counties	6.9	(4.0—11.5)
Ontonagon County	5.4	(3.2—8.9)

[a] Among all adults, the proportion who reported that they currently use chewing tobacco, snuff or snus, either every day or on some days. (Baraga n=586, Gogebic n=571, Houghton+Keweenaw n=596, Ontonagon n=769)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Smokeless tobacco use is one cause of oral cancer. Smokeless tobacco use was more commonly reported among Western U.P. men than women, a finding that is consistent with state and national data.

Table 13-PC: Smokeless Tobacco Use by Population Characteristic		
	Current Smokeless Tobacco Use [a]	
	%	95% C.I.
Western U.P. Overall	5.2	(3.5—7.7)
Age		
18-39	7.1	(3.6—13.8)
40-64	4.3	(2.9—6.4)
65+	3.0	(1.3—6.6)
Gender		
Male	9.4	(5.9—14.6)
Female	1.8	(0.9—3.7)
Education		
Less than HS graduate	3.5	(1.0—12.2)
High school graduate	8.8	(4.9—15.2)
College 1-3 years	2.9	(1.8—4.8)
4 year degree or higher	3.0	(1.2—7.2)
Household Income		
$0 — $24,999	6.2	(3.1—12.2)
$25,000 — $49,999	6.2	(3.1—12.0)
$50,000 or more	3.6	(1.9—6.9)

[a] Among all adults, the proportion who reported that they currently use chewing tobacco, snuff or snus, either every day or on some days. (n=2522)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 14-C: Alcohol Consumption by County				
	Heavy Drinking [a]		Binge Drinking [b]	
	%	95% C.I.	%	95% C.I.
Michigan	7.0	(6.3—7.9)	19.7	(18.5—20.9)
Western U.P.	12.1	(9.8—14.7)	14.7	(12.1—17.8)
Baraga County	11.4	(7.7—16.4)	15.0	(10.6—20.8)
Gogebic County	8.4	(5.9—11.9)	11.5	(8.0—16.2)
Houghton + Keweenaw Counties	13.1	(9.6—17.6)	16.1	(12.0—21.3)
Ontonagon County	13.9	(11.0—17.4)	13.3	(10.4—16.8)

[a] Among all adults, the proportion who reported consuming an average of more than two alcoholic drinks per day for men or more than one per day for women in the previous month. (Baraga n=588, Gogebic n=566, Houghton+Keweenaw n=595, Ontonagon n=766)

[b] Among all adults, the proportion who reported consuming five or more drinks per occasion (for men) or 4 or more drinks per occasion (for women) at least once in the previous month. (Baraga n=587, Gogebic n=566, Houghton+Keweenaw n=595, Ontonagon n=767)

In the local survey, rather than use the phrase "per occasion", a time interval of 2 hours was used. This definition of binge drinking came from http://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm. The difference in question phrasing may account for some of the difference in estimates observed.

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Alcohol abuse elevates the risk of liver disease and other chronic conditions. Roughly 12 percent of Western U.P. adults reported heavy drinking rates, defined as more than two alcoholic drinks per day for men and more than one per day for women. Binge drinking prevalence, the consumption of five or more drinks in two hours for men or four or more drinks in two hours for women, was estimated to be 14.7 percent among Western U.P. adults. Both heavy and binge drinking behaviors are more common with younger adults.

Table 14-PC: Alcohol Consumption by Population Characteristic				
	Heavy Drinking [a]		Binge Drinking [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	12.1	(9.8—14.7)	14.7	(12.1—17.8)
Age				
18-39	13.0	(8.7—18.8)	22.8	(16.8—30.1)
40-64	13.5	(10.5—17.2)	12.1	(9.7—15.0)
65+	6.6	(4.9—8.8)	3.3	(2.2—5.1)
Gender				
Male	11.7	(8.4—16.0)	13.6	(9.9—18.3)
Female	12.3	(9.5—15.9)	15.6	(12.1—19.9)
Education				
Less than HS graduate	8.1	(2.4—24.2)	4.7	(1.5—14.0)
High school graduate	8.4	(6.1—11.4)	12.0	(8.4—16.7)
College 1-3 years	17.6	(13.0—23.5)	19.9	(14.7—26.5)
4 year degree or higher	10.8	(7.1—16.3)	15.7	(10.7—22.3)
Household Income				
$0 — $24,999	14.0	(10.0—19.3)	17.1	(12.1—23.6)
$25,000 — $49,999	9.4	(6.5—13.3)	13.6	(9.7—18.7)
$50,000 or more	12.0	(8.2—17.2)	15.1	(10.3—21.5)

[a] Among all adults, the proportion who reported consuming an average of more than two alcoholic drinks per day for men or more than one per day for women in the previous month. (n=2515)

[b] Among all adults, the proportion who reported consuming five or more drinks per occasion (for men) or 4 or more drinks per occasion (for women) at least once in the previous month. (n=2515)

In the local survey, rather than use the phrase "per occasion", a time interval of 2 hours was used. This definition of binge drinking came from http://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm. The difference in question phrasing may account for some of the difference in estimates observed.

Iron County data from BRFSS surveys completed between 2006 and 2008 resulted in an estimated 10.1% ± 3.2% of adults being classified as heavy drinkers in the past 30 days, compared with 7.9% ± 0.6% of Wisconsin adults overall in 2008. Binge drinking rates in the past 30 days were estimated to be 28.8% ± 4.8% among Iron County adults, and 23.0% ± 1.0% among Wisconsin adults.

Table 15-C: Motor Vehicle Safety by County				
	Always Uses a Seatbelt [a]		Drove Motor Vehicle After Drinking [b]	
	%	95% C.I.	%	95% C.I.
Michigan	88.7	(87.7—89.7)	2.3 (2010)	(1.9—2.9) (2010)
Western U.P.	84.0	(80.8—86.7)	5.3	(3.9—7.0)
Baraga County	76.8	(70.7—82.0)	7.5	(4.4—12.6)
Gogebic County	87.2	(80.4—91.9)	4.4	(2.5—7.6)
Houghton + Keweenaw Counties	84.6	(79.4—88.7)	4.9	(3.0—8.0)
Ontonagon County	81.7	(76.8—85.7)	6.3	(4.4—9.1)

[a] Among all adults, the proportion who reported always using a seatbelt when driving or riding in a car. (Baraga n=581, Gogebic n=557, Houghton+Keweenaw n=580, Ontonagon n=758)

[b] Among all adults, the proportion who reported that they had driven when they had too much to drink at least once in the previous month. (Baraga n=588, Gogebic n=568, Houghton+Keweenaw n=594, Ontonagon n=768)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Seatbelt use has been shown to reduce motor vehicle injuries and deaths. Local estimated rates for always using a seatbelt were consistently above 80 percent for all population subgroups except adults under age 40.

Driving after drinking is a major factor in motor vehicle crashes, especially those where fatalities result. Approximately 5 percent of Western U.P. adults reported driving after having had too much to drink at least once in the past month.

Table 15-PC: Motor Vehicle Safety by Population Characteristic				
	Always Uses a Seatbelt [a]		Drove Motor Vehicle After Drinking [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	84.0	(80.8—86.7)	5.3	(3.9—7.0)
Age				
18-39	77.0	(69.4—83.2)	6.3	(3.7—10.6)
40-64	87.7	(84.9—90.1)	5.0	(3.5—7.3)
65+	90.0	(86.9—92.5)	3.4	(2.2—5.3)
Gender				
Male	82.3	(76.9—86.7)	5.8	(4.0—8.3)
Female	85.3	(81.2—88.6)	4.8	(3.0—7.6)
Education				
Less than HS graduate	84.4	(69.0—92.9)	1.0	(0.3—3.7)
High school graduate	85.7	(80.1—90.0)	4.4	(2.6—7.4)
College 1-3 years	81.0	(75.2—85.7)	7.4	(4.7—11.6)
4 year degree or higher	85.9	(79.8—90.3)	5.1	(2.9—8.6)
Household Income				
$0 — $24,999	82.9	(76.8—87.7)	4.8	(2.8—8.2)
$25,000 — $49,999	84.6	(79.0—88.9)	4.9	(2.9—8.2)
$50,000 or more	84.1	(77.9—88.8)	7.3	(4.5—11.8)

[a] Among all adults, the proportion who reported always using a seatbelt when driving or riding in a car. (n=2476)

[b] Among all adults, the proportion who reported that they had driven when they had too much to drink at least once in the previous month. (n=2518)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 16-C: Hypertension Awareness and Medication Use by County

	Ever Told HBP [a]		Taking BP Medication [b]	
	%	95% C.I.	%	95% C.I.
Michigan	34.2	(32.9—35.4)	76.5	(74.4—78.5)
Western U.P.	34.5	(31.0—38.2)	75.2	(69.7—80.0)
Baraga County	44.4	(37.1—51.9)	61.9	(49.7—72.8)
Gogebic County	40.4	(34.5—46.7)	84.8	(76.8—90.4)
Houghton + Keweenaw Counties	27.8	(22.9—33.3)	72.4	(62.0—80.8)
Ontonagon County	48.2	(43.7—52.8)	81.2	(75.1—86.0)

[a] Among all adults, the proportion who reported that they were ever told by a doctor that they had high blood pressure (HBP). Women who had HBP only during pregnancy and adults who were borderline hypertensive were considered to not have been diagnosed. (Baraga n=533, Gogebic n=496, Houghton+Keweenaw n=519, Ontonagon n=697)

[b] Among adults who were ever told that they had HBP, the proportion that reported they were currently taking blood pressure (BP) medicines for their HBP. (Baraga n=257, Gogebic n=240, Houghton+Keweenaw n=226, Ontonagon n=371)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Hypertension, or high blood pressure, raises the risk of heart disease and stroke. An estimated 34.5 percent of Western U.P. adults have ever been told by a doctor that they had high blood pressure. Approximately three quarters of this group are currently on medication to control their high blood pressure. The likelihood of a high blood pressure diagnosis increases with age. Among those who were ever told they had hypertension, but are not currently taking medication for that condition, some may no longer have high blood pressure.

Table 16-PC: Hypertension Awareness and Medication Use by Population Characteristic

	Ever Told HBP [a]		Taking BP Medication [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	34.5	(31.0—38.2)	75.2	(69.7—80.0)
Age				
18-39	11.5	(7.4—17.6)	20.7	(8.5—42.2)
40-64	42.2	(37.1—47.4)	75.6	(69.3—81.0)
65+	63.9	(58.8—68.7)	95.7	(93.5—97.1)
Gender				
Male	43.8	(36.8—51.1)	70.9	(62.9—77.8)
Female	26.9	(23.4—30.8)	80.9	(73.7—86.6)
Education				
Less than HS graduate	39.3	(23.3—57.9)	92.6	(80.1—97.5)
High school graduate	39.3	(33.4—45.5)	80.4	(72.4—86.5)
College 1-3 years	30.6	(25.0—36.8)	65.5	(54.1—75.4)
4 year degree or higher	29.8	(24.5—35.8)	69.3	(59.1—78.0)
Household Income				
$0 — $24,999	37.6	(30.5—45.3)	76.7	(66.3—84.7)
$25,000 — $49,999	37.4	(31.7—43.4)	79.7	(71.4—86.1)
$50,000 or more	29.5	(23.8—35.9)	63.7	(51.7—74.3)

[a] Among all adults, the proportion who reported that they were ever told by a doctor that they had high blood pressure (HBP). Women who had HBP only during pregnancy and adults who were borderline hypertensive were considered to not have been diagnosed. (n=2245)

[b] Among adults who were ever told that they had HBP, the proportion that reported they were currently taking blood pressure (BP) medicines for their HBP. (n=1094)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 17-C: Cholesterol Screening and Awareness by County

	Cholesterol Ever Checked [a]		Checked Within Past Five Years [b]		Ever Told High Cholesterol [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	81.1	(79.7—82.4)	76.7	(75.3—78.1)	41.8	(40.4—43.3)
Western U.P.	74.8	(70.6—78.5)	66.9	(62.3—71.2)	48.4	(43.9—53.0)
Baraga County	76.5	(69.5—82.2)	69.2	(62.0—75.6)	50.0	(42.7—57.4)
Gogebic County	76.6	(69.1—82.7)	71.4	(64.4—77.5)	62.3	(56.3—68.0)
Houghton + Keweenaw Counties	73.6	(66.7—79.5)	63.8	(56.3—70.6)	42.2	(35.2—49.4)
Ontonagon County	75.1	(69.3—80.1)	72.2	(67.4—76.4)	51.5	(46.5—56.4)

[a] Among all adults, the proportion who reported ever having had their blood cholesterol checked. (Baraga n=570, Gogebic n=544, Houghton+Keweenaw n=566, Ontonagon n=724)

[b] Among all adults, the proportion who reported that they have had their blood cholesterol checked within the past five years. (Baraga n=572, Gogebic n=538, Houghton+Keweenaw n=559, Ontonagon n=727)

[c] Among adults who ever had their blood cholesterol checked, the proportion who reported that a doctor, nurse, or other health professional had told them that their cholesterol was high. (Baraga n=484, Gogebic n=480, Houghton+Keweenaw n=475, Ontonagon n=605)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

High cholesterol is a major risk factor for heart disease. The National Cholesterol Education Program (NCEP) recommends that adults aged 20 years or older have their cholesterol checked every 5 years. Among Western U.P. adults aged 18 and older, an estimated 74.8 percent have ever had their cholesterol checked and 66.9 percent had their cholesterol checked within the past five years. Among those who ever had their cholesterol checked, 48.4 percent were ever told their cholesterol was high.

Table 17-PC: Cholesterol Screening and Awareness by Population Characteristic

	Cholesterol Ever Checked [a]		Checked Within Past Five Years [b]		Ever Told High Cholesterol [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	74.7	(70.2—78.6)	66.9	(62.3—71.2)	48.4	(43.9—53.0)
Age						
18-39	47.1	(38.1—56.2)	36.6	(28.6—45.5)	24.2	(15.5—35.9)
40-64	88.6	(85.6—91.0)	80.9	(77.3—84.2)	52.6	(46.6—58.6)
65+	96.1	(93.9—97.5)	93.9	(91.6—95.6)	64.9	(59.9—69.6)
Gender						
Male	76.8	(69.0—83.2)	66.3	(58.1—73.7)	53.4	(45.0—61.6)
Female	72.9	(67.6—77.5)	67.3	(62.2—72.1)	44.3	(39.4—49.3)
Education						
Less than HS graduate	86.6	(72.8—94.0)	87.2	(73.3—94.5)	55.5	(31.8—77.0)
High school graduate	75.4	(68.3—81.3)	65.4	(57.5—72.5)	52.8	(45.4—60.0)
College 1-3 years	71.0	(62.3—78.4)	63.6	(55.3—71.1)	45.9	(38.8—53.2)
4 year degree or higher	74.0	(65.5—81.0)	65.6	(57.5—72.9)	40.7	(33.9—47.9)
Household Income						
$0 — $24,999	62.6	(53.8—70.7)	58.2	(49.5—66.4)	49.2	(39.9—58.6)
$25,000 — $49,999	78.9	(71.7—84.6)	71.1	(63.9—77.4)	53.6	(47.1—60.1)
$50,000 or more	81.6	(74.0—87.3)	72.3	(64.5—78.9)	43.3	(35.8—51.1)

[a] Among all adults, the proportion who reported ever having had their blood cholesterol checked. (n=2404)

[b] Among all adults, the proportion who reported that they have had their blood cholesterol checked within the past five years. (n=2396)

[c] Among adults who ever had their blood cholesterol checked, the proportion who reported that a doctor, nurse, or other health professional had told them that their cholesterol was high. (n=2044)

BRFSS surveys completed between 2006 and 2008 resulted in an estimated 88.7% ± 4.0% of Iron County adults reporting ever having had their cholesterol checked. Among these adults, 43.0% ± 6.6% reported that a health professional told them their cholesterol was high. Comparable state estimates were not available for these two measures.

Table 18-C: No Routine Checkup in Past Year by County		
	Had No Routine Checkup in Past Year [a]	
	%	95% C.I.
Michigan	33.5	(32.2—34.9)
Western U.P.	39.8	(35.8—44.0)
Baraga County	37.3	(30.9—44.2)
Gogebic County	39.9	(33.5—46.6)
Houghton + Keweenaw Counties	39.6	(33.1—46.5)
Ontonagon County	43.7	(38.4—49.2)

[a] Among all adults, the proportion who reported that they did not have a routine checkup in the past year. (Baraga n=561, Gogebic n=550, Houghton+Keweenaw n=572, Ontonagon n=730)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Roughly 40 percent of Western U.P. adults did not have a routine physical exam by a health professional in the past year. Men were less likely to have had an annual checkup than women, as were younger adults compared to older adults.

Table 18-PC: No Routine Checkup in Past Year by Population Characteristic		
	Had No Routine Checkup in Past Year [a]	
	%	95% C.I.
Western U.P. Overall	39.8	(35.8—44.0)
Age		
18-39	57.5	(49.1—65.4)
40-64	34.4	(30.1—38.9)
65+	15.1	(11.8—19.2)
Gender		
Male	46.7	(39.6—54.0)
Female	34.3	(30.0—38.9)
Education		
Less than HS graduate	18.3	(10.2—30.6)
High school graduate	40.6	(33.7—47.9)
College 1-3 years	39.8	(33.4—46.6)
4 year degree or higher	50.1	(42.8—57.4)
Household Income		
$0 — $24,999	45.0	(37.3—52.9)
$25,000 — $49,999	36.7	(30.6—43.2)
$50,000 or more	37.1	(30.5—44.2)

[a] Among all adults, the proportion who reported that they did not have a routine checkup in the past year. (n=2413)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 19-C: Immunizations Among Adults Aged 65 Years and Older by County				
	Had Flu Vaccine in Past Year [a]		Ever Had Pneumonia Vaccine [b]	
	%	95% C.I.	%	95% C.I.
Michigan	58.0	(55.5—60.4)	67.1	(64.7—69.4)
Western U.P.	65.3	(60.7—69.6)	75.5	(71.1—79.3)
Baraga County	62.5	(53.5—70.7)	72.3	(64.1—79.3)
Gogebic County	67.3	(59.6—74.1)	74.8	(67.2—81.1)
Houghton + Keweenaw Counties	65.7	(57.6—73.0)	78.2	(70.0—84.7)
Ontonagon County	62.7	(56.6—68.4)	70.3	(64.0—76.0)

[a] Among adults aged 65 years and older, the proportion who reported that they had a flu vaccine, either by an injection in the arm or sprayed in the nose during the past 12 months. (Baraga n=223, Gogebic n=268, Houghton+Keweenaw n=225, Ontonagon n=370)

[b] Among adults aged 65 years and older, the proportion who reported that they ever had a pneumococcal vaccine. (Baraga n=209, Gogebic n=252, Houghton+Keweenaw n=200, Ontonagon n=344)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Annual influenza vaccinations and a one-time pneumococcal vaccination after age 60 may reduce the risk of serious disease among older adults. Among Western U.P. adults aged 65 and older, an estimated 65.3 percent received a flu vaccination in the past year. An estimated 75.5 percent of this same population have received the pneumococcal vaccine. Significant differences in the rates of flu and pneumonia vaccination were not readily observable between population subgroups.

Table 19-PC: Immunizations Among Adults Aged 65 Years and Older by Population Characteristic

	Had Flu Vaccine in Past Year [a]		Ever Had Pneumonia Vaccine [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	65.3	(60.7—69.6)	75.5	(71.1—79.3)
Gender				
Male	66.7	(59.8—72.9)	75.7	(68.5—81.7)
Female	63.7	(57.8—69.2)	75.2	(70.3—79.5)
Education				
Less than HS graduate	68.7	(56.5—78.7)	77.7	(64.1—87.2)
High school graduate	63.6	(57.7—69.1)	77.9	(72.7—82.4)
College 1-3 years	65.4	(57.8—72.3)	69.8	(61.7—76.9)
4 year degree or higher	61.5	(52.9—69.5)	71.3	(62.7—78.6)
Household Income				
$0 — $24,999	63.3	(55.8—70.2)	76.8	(70.3—82.3)
$25,000 — $49,999	68.7	(60.8—75.6)	72.3	(62.7—80.1)
$50,000 or more	62.3	(49.8—73.4)	74.7	(64.0—83.1)

[a] Among adults aged 65 years and older, the proportion who reported that they had a flu vaccine, either by an injection in the arm or sprayed in the nose during the past 12 months. (n=1086)

[b] Among adults aged 65 years and older, the proportion who reported that they ever had a pneumococcal vaccine. (n=1005)

BRFSS surveys completed between 2006 and 2008 concluded that an estimated 29.6% ± 7.6% of Iron County adults age 65 and older had a flu shot in the past twelve months, compared to 73.0% ± 3.0% of Wisconsin adults overall (2008 survey cycle).

Table 20-C: HIV Testing Among Adults Aged 18-64 Years by County		
	Ever Had an HIV Test [a]	
	%	95% C.I.
Michigan	41.3	(39.6—43.0)
Western U.P.	33.6	(29.3—38.2)
Baraga County	31.1	(24.2—39.0)
Gogebic County	35.9	(28.5—44.0)
Houghton + Keweenaw Counties	34.1	(27.6—41.2)
Ontonagon County	28.8	(23.9—34.1)

[a] Among adults aged 18 - 64 years, the proportion who reported that they ever had been tested for HIV, apart from tests that were part of a blood donation. "Don't know" was considered a valid response to this question. (Baraga n=366, Gogebic n=298, Houghton+Keweenaw n=370, Ontonagon n=401)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

HIV (human immunodeficiency virus) is the virus that causes AIDS (Acquired Immune Deficiency Syndrome). Awareness of HIV infection status helps prevent the spread of the disease. Roughly one third of Western U.P. adults between the ages of 18 and 64 indicated that they ever had an HIV test. Testing is more common among younger adults.

Table 20-PC: HIV Testing Among Adults Aged 18-64 Years by Population Characteristic		
	Ever Had an HIV Test [a]	
	%	95% C.I.
Western U.P. Overall	33.6	(29.3—38.2)
Age		
18-39	40.8	(32.9—49.2)
40-64	27.1	(23.2—31.3)
Gender		
Male	28.9	(22.0—36.9)
Female	37.0	(31.9—42.4)
Education		
Less than HS graduate	27.5	(9.8—56.9)
High school graduate	32.5	(25.2—40.7)
College 1-3 years	35.1	(28.2—42.6)
4 year degree or higher	34.5	(27.4—42.3)
Household Income		
$0 — $24,999	38.1	(29.4—47.7)
$25,000 — $49,999	32.1	(25.2—40.0)
$50,000 or more	30.9	(24.5—38.0)

[a] Among adults aged 18 - 64 years, the proportion who reported that they ever had been tested for HIV, apart from tests that were part of a blood donation. "Don't know" was considered a valid response to this question. (n=1435)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 21-C: Asthma Among Adults by County				
	Lifetime Asthma Prevalence [a]		Current Asthma Prevalence [b]	
	%	95% C.I.	%	95% C.I.
Michigan	14.8	(13.8—15.9)	9.9	(9.1—10.8)
Western U.P.	15.1	(12.7—17.9)	8.4	(6.7—10.5)
Baraga County	20.0	(14.3—27.2)	12.8	(8.6—18.7)
Gogebic County	13.9	(9.7—19.4)	8.3	(5.6—12.1)
Houghton + Keweenaw Counties	14.6	(11.1—18.9)	7.2	(4.8—10.7)
Ontonagon County	15.7	(12.5—19.5)	10.3	(7.7—13.5)

[a] Among all adults, the proportion who reported that they were ever told by a doctor, nurse, or other health care professional that they had asthma. (Baraga n=581, Gogebic n=557, Houghton+Keweenaw n=576, Ontonagon n=742)

[b] Among all adults, the proportion who reported that they still had asthma. (Baraga n=557, Gogebic n=545, Houghton+Keweenaw n=557, Ontonagon n=725)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Asthma is a chronic inflammatory disorder of the lungs. Among Western U.P. adults, an estimated 15.1 percent had ever been told by a health care professional they had asthma. An estimated 8.4 percent currently have asthma. No significant differences were readily observable between population subgroups.

Table 21-PC: Asthma Among Adults by Population Characteristic				
	Lifetime Asthma Prevalence [a]		Current Asthma Prevalence [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	15.1	(12.7—17.9)	8.4	(6.7—10.5)
Age				
18-39	16.8	(11.9—23.2)	8.2	(4.9—13.3)
40-64	15.6	(12.8—18.8)	9.2	(7.1—11.9)
65+	10.4	(8.2—13.2)	6.8	(5.1—9.1)
Gender				
Male	12.5	(9.1—17.0)	5.7	(3.4—9.3)
Female	17.3	(14.2—20.9)	10.6	(8.3—13.4)
Education				
Less than HS graduate	11.0	(5.0—22.4)	6.1	(3.0—11.8)
High school graduate	14.2	(10.4—19.0)	7.4	(5.0—11.0)
College 1-3 years	13.3	(9.7—17.9)	9.0	(5.9—13.5)
4 year degree or higher	22.6	(17.1—29.3)	10.4	(7.1—14.9)
Household Income				
$0 — $24,999	16.3	(11.9—21.9)	10.5	(6.9—15.7)
$25,000 — $49,999	15.1	(11.3—20.0)	8.3	(5.9—11.7)
$50,000 or more	14.9	(11.0—19.8)	6.8	(4.6—9.9)

[a] Among all adults, the proportion who reported that they were ever told by a doctor, nurse, or other health care professional that they had asthma. (n=2456)

[b] Among all adults, the proportion who reported that they still had asthma. (n=2384)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 22-C: Chronic Obstructive Pulmonary Disease (COPD) by County		
	Ever Told COPD, Emphysema or Chronic Bronchitis [a]	
	%	95% C.I.
Michigan	8.0	(7.3—8.7)
Western U.P.	7.2	(5.7—9.2)
Baraga County	5.1	(3.2—8.1)
Gogebic County	8.2	(5.5—12.1)
Houghton + Keweenaw Counties	7.3	(4.9—10.6)
Ontonagon County	7.3	(5.4—9.7)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had chronic obstructive pulmonary disease (COPD), emphysema or chronic bronchitis. (Baraga n=571, Gogebic n=554, Houghton+Keweenaw n=582, Ontonagon n=728)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Chronic obstructive pulmonary disease (COPD) is a progressive disease that makes it hard to breathe. COPD prevalence is an estimated 7.2 percent among Western U.P. adults. Prevalence increased with age.

Table 22-PC: Chronic Obstructive Pulmonary Disease (COPD) by Population Characteristic		
	Ever Told COPD, Emphysema or Chronic Bronchitis [a]	
	%	95% C.I.
Western U.P. Overall	7.2	(5.7—9.2)
Age		
18-39	2.6	(1.0—6.8)
40-64	9.3	(6.8—12.5)
65+	12.6	(9.3—16.8)
Gender		
Male	8.8	(6.1—12.7)
Female	6.0	(4.5—7.9)
Education		
Less than HS graduate	15.3	(7.7—27.9)
High school graduate	7.7	(5.6—10.6)
College 1-3 years	7.0	(4.4—10.9)
4 year degree or higher	2.3	(1.4—3.8)
Household Income		
$0 — $24,999	12.5	(8.9—17.3)
$25,000 — $49,999	5.8	(4.0—8.4)
$50,000 or more	3.3	(1.6—6.7)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had chronic obstructive pulmonary disease (COPD), emphysema or chronic bronchitis. (n=2435)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 23-C: Arthritis by County				
	Ever Told Arthritis [a]		Mobility Limited by Arthritis [b]	
	%	95% C.I.	%	95% C.I.
Michigan	31.0	(29.8—32.2)	44.1 (2009)	(42.1—46.1) (2009)
Western U.P.	36.0	(32.6—39.5)	54.1	(48.9—59.2)
Baraga County	36.4	(31.1—42.0)	52.0	(43.2—60.6)
Gogebic County	39.9	(34.0—46.1)	61.2	(53.1—68.7)
Houghton + Keweenaw Counties	33.1	(27.9—38.7)	52.1	(43.1—60.9)
Ontonagon County	42.3	(37.5—47.4)	52.1	(46.1—58.0)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia. (Baraga n=584, Gogebic n=559, Houghton+Keweenaw n=586, Ontonagon n=742)

[b] Among those adults with doctor-diagnosed arthritis, the proportion who reported being limited in their usual activities because of arthritis or joint symptoms. (Baraga n=282, Gogebic n=266, Houghton+Keweenaw n=258, Ontonagon n=381)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

According to the CDC, arthritis and rheumatism are the leading causes of disability in the United States. Over a third of Western U.P. adults, and an estimated 60.7 percent of those aged 65 and older, have ever been told by a doctor they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia. Among those with doctor-diagnosed arthritis, an estimated 54.1 percent reported that their usual activities were limited by this condition. Those adults with household incomes of $50,000 or more who are diagnosed with arthritis were less likely to be limited in their usual activities by arthritis.

Table 23-PC: Arthritis by Population Characteristic				
	Ever Told Arthritis [a]		Mobility Limited by Arthritis [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	36.0	(32.6—39.5)	54.1	(48.9—59.2)
Age				
18-39	11.9	(7.7—17.7)	35.3	(16.7—59.6)
40-64	47.5	(42.5—52.6)	56.4	(49.9—62.6)
65+	60.7	(55.6—65.5)	57.6	(51.4—63.5)
Gender				
Male	35.8	(30.1—41.9)	55.5	(46.9—63.8)
Female	36.1	(32.2—40.2)	53.0	(46.5—59.3)
Education				
Less than HS graduate	46.9	(30.4—64.1)	80.3	(65.3—89.9)
High school graduate	41.4	(35.5—47.5)	54.2	(46.3—61.9)
College 1-3 years	32.6	(27.5—38.0)	47.7	(38.5—57.1)
4 year degree or higher	25.4	(20.7—30.8)	42.5	(33.4—52.0)
Household Income				
$0 — $24,999	39.2	(32.8—46.1)	62.5	(53.6—70.7)
$25,000 — $49,999	37.8	(32.3—43.6)	51.0	(42.4—59.5)
$50,000 or more	30.0	(24.7—35.9)	38.1	(28.8—48.3)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia. (n=2471)

[b] Among those adults with doctor-diagnosed arthritis, the proportion who reported being limited in their usual activities because of arthritis or joint symptoms. (n=1187)

BRFSS surveys completed between 2005 and 2007 concluded that an estimated 37.3% ± 8.8% of Iron County adults had been diagnosed with arthritis, compared to 28% ± 2% of Wisconsin adults overall (2007 survey cycle).

Table 24-C: Cardiovascular Disease by County						
	Ever Told Heart Attack [a]		Ever Told Angina or Coronary Heart Disease [b]		Ever Told Stroke [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	5.3	(4.8—5.9)	5.0	(4.4—5.5)	3.3	(2.9—3.8)
Western U.P.	3.7	(2.9—4.7)	6.8	(5.4—8.6)	2.6	(1.9—3.7)
Baraga County	4.2	(2.8—6.2)	6.3	(4.1—9.5)	2.4	(1.4—4.0)
Gogebic County	5.8	(3.7—8.9)	9.3	(6.6—13.0)	2.6	(1.4—4.6)
Houghton + Keweenaw Counties	2.5	(1.6—3.9)	5.7	(3.7—8.7)	2.6	(1.5—4.5)
Ontonagon County	4.6	(3.4—6.3)	7.6	(5.4—10.5)	3.2	(2.2—4.8)

Among all adults, the proportion who had ever been told by a doctor that…

[a] they had a heart attack or myocardial infarction; (Baraga n=585, Gogebic n=563, Houghton+Keweenaw n=588, Ontonagon n=743)

[b] they had angina or coronary heart disease; (Baraga n=582, Gogebic n=562, Houghton+Keweenaw n=586, Ontonagon n=742)

[c] they had a stroke. (Baraga n=579, Gogebic n=560, Houghton+Keweenaw n=582, Ontonagon n=742)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Cardiovascular disease (heart disease and stroke) is the leading cause of death in the Western U.P., Michigan, and the United States. The prevalence of heart attack, heart disease, and stroke increase with age. Men reported heart attack and heart disease at significantly higher rates than women in the Western U.P. This finding is consistent with state and national statistics.

Table 24-PC: Cardiovascular Disease by Population Characteristic

	Ever Told Heart Attack [a]		Ever Told Angina or Coronary Heart Disease [b]		Ever Told Stroke [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	3.7	(2.9—4.7)	6.8	(5.4—8.6)	2.6	(1.9—3.7)
Age						
18-39	0.2	(0.0—1.2)	1.0	(0.3—3.4)	0.2	(0.0—1.2)
40-64	2.5	(1.5—4.1)	6.9	(4.6—10.3)	2.7	(1.7—4.5)
65+	14.4	(11.2—18.3)	19.5	(15.7—24.0)	7.9	(5.2—12.0)
Gender						
Male	5.6	(4.0—7.7)	11.3	(8.3—15.1)	3.4	(2.2—5.3)
Female	2.2	(1.5—3.1)	3.2	(2.4—4.4)	2.0	(1.2—3.3)
Education						
Less than HS graduate	8.1	(4.0—15.8)	16.9	(8.4—31.0)	6.6	(2.7—14.9)
High school graduate	3.8	(2.7—5.2)	7.1	(5.3—9.4)	3.0	(1.8—5.1)
College 1-3 years	3.4	(2.2—5.4)	5.3	(3.7—7.5)	1.7	(1.1—2.7)
4 year degree or higher	1.4	(0.7—2.9)	3.5	(1.7—7.4)	1.4	(0.7—2.5)
Household Income						
$0 — $24,999	4.8	(3.4—6.7)	7.7	(5.5—10.5)	3.9	(2.4—6.3)
$25,000 — $49,999	3.8	(2.5—5.9)	8.4	(6.0—11.7)	3.4	(1.9—5.9)
$50,000 or more	2.5	(1.2—5.1)	3.5	(2.0—6.0)	0.8	(0.4—1.7)

Among all adults, the proportion who had ever been told by a doctor that…

[a] they had a heart attack or myocardial infarction; (n=2479)

[b] they had angina or coronary heart disease; (n=2472)

[c] they had a stroke. (n=2463)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 25-C: Cancer by County						
	Ever Told Skin Cancer [a]		Ever Told Any Other Type of Cancer [b]		Ever Told Cancer [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	5.6	(5.1—6.1)	7.3	(6.7—7.9)	11.8	(11.1—12.6)
Western U.P.	4.6	(3.5—6.2)	7.7	(6.1—9.7)	11.6	(9.6—13.9)
Baraga County	5.0	(3.2—7.8)	4.1	(2.9—5.9)	8.5	(6.3—11.5)
Gogebic County	6.2	(4.0—9.5)	11.8	(7.9—17.4)	16.6	(12.0—22.4)
Houghton + Keweenaw Counties	3.5	(2.0—6.3)	6.5	(4.4—9.4)	9.5	(6.8—13.2)
Ontonagon County	6.6	(5.0—8.6)	9.6	(7.5—12.2)	14.8	(12.2—17.8)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had skin cancer. (Baraga n=580, Gogebic n=562, Houghton+Keweenaw n=582, Ontonagon n=746)

[b] Among all adults, the proportion who reported ever being told by a doctor that they had a form of cancer other than skin cancer. (Baraga n=578, Gogebic n=560, Houghton+Keweenaw n=586, Ontonagon n=736)

[c] Among all adults, the proportion who reported ever being told by a doctor that they had skin cancer or any other type of cancer. (Baraga n=578, Gogebic n=563, Houghton+Keweenaw n=583, Ontonagon n=741)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Cancer is the second leading cause of death in the Western U.P., Michigan, and the United States. Among Western U.P. adults, an estimated 11.6 percent have ever been told they had skin cancer or any other type of cancer. Reported rates of lifetime diagnosis were higher in Gogebic and Ontonagon counties. The likelihood of a cancer diagnosis increases with increasing age. The higher rates observed in Gogebic and Ontonagon counties are consistent with greater than 20 percent of the population of those counties being aged 65 or older as of the 2010 U.S. Census.

Table 25-PC: Cancer by Population Characteristic						
	Ever Told Skin Cancer [a]		Ever Told Any Other Type of Cancer [b]		Ever Told Cancer [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	4.6	(3.5—6.2)	7.7	(6.1—9.7)	11.6	(9.6—13.9)
Age						
18-39	2.4	(0.8—7.2)	2.9	(1.1—7.4)	5.2	(2.5—10.6)
40-64	3.6	(2.4—5.4)	7.4	(5.0—10.6)	10.3	(7.7—13.8)
65+	12.2	(9.7—15.3)	19.3	(15.5—23.7)	28.8	(24.5—33.5)
Gender						
Male	5.2	(3.2—8.3)	8.2	(5.6—11.7)	12.8	(9.4—17.1)
Female	4.2	(3.0—5.8)	7.4	(5.5—9.9)	10.6	(8.4—13.3)
Education						
Less than HS graduate	3.9	(1.6—9.0)	18.2	(8.3—35.3)	21.8	(11.0—38.5)
High school graduate	4.6	(3.1—6.7)	7.0	(5.2—9.4)	10.4	(8.0—13.3)
College 1-3 years	4.4	(2.8—6.7)	6.6	(4.9—9.0)	10.4	(7.9—13.5)
4 year degree or higher	5.6	(2.3—12.8)	5.4	(3.5—8.2)	10.5	(6.4—16.8)
Household Income						
$0 — $24,999	4.0	(2.6—6.2)	6.2	(4.5—8.5)	9.6	(7.2—12.6)
$25,000 — $49,999	3.6	(2.5—5.0)	7.9	(5.6—11.0)	10.7	(8.2—14.0)
$50,000 or more	5.7	(3.0—10.5)	6.1	(4.1—9.1)	10.7	(7.2—15.6)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had skin cancer. (n=2470)

[b] Among all adults, the proportion who reported ever being told by a doctor that they had a form of cancer other than skin cancer. (n=2460)

[c] Among all adults, the proportion who reported ever being told by a doctor that they had skin cancer or any other type of cancer. (n=2465)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 26-C: Diabetes by County		
	Ever Told Diabetes [a]	
	%	95% C.I.
Michigan	10.0	(9.3—10.7)
Western U.P.	9.8	(8.0—11.8)
Baraga County	10.0	(7.1—13.9)
Gogebic County	8.6	(6.3—11.6)
Houghton + Keweenaw Counties	9.8	(7.1—13.5)
Ontonagon County	11.9	(9.1—15.4)

[a] Among all adults, the proportion who reported that they were ever told by a doctor that they had diabetes. Adults told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed. (Baraga n=586, Gogebic n=553, Houghton+Keweenaw n=593, Ontonagon n=752)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Diabetes can cause serious health complications including heart disease, blindness, kidney failure, and lower-extremity amputations. In 2010, diabetes was the seventh leading cause of death in the Western U.P. and in Michigan. Type 1 diabetes is usually diagnosed in childhood. Type 2 diabetes is a progressive disease that usually emerges in adulthood. It is associated with risk factors such as obesity, poor diet, and lack of physical activity. Total diabetes prevalence increases with age, a pattern observed in local as well as state and national data.

Table 26-PC: Diabetes by Population Characteristic		
	Ever Told Diabetes [a]	
	%	95% C.I.
Western U.P. Overall	9.8	(8.0—11.8)
Age		
18-39	2.3	(1.0—5.4)
40-64	11.5	(8.7—15.0)
65+	21.8	(17.4—27.0)
Gender		
Male	11.8	(8.7—15.9)
Female	8.1	(6.4—10.2)
Education		
Less than HS graduate	25.7	(14.7—41.0)
High school graduate	10.4	(7.9—13.6)
College 1-3 years	6.6	(4.8—9.0)
4 year degree or higher	5.6	(3.7—8.3)
Household Income		
$0 — $24,999	12.2	(9.2—16.1)
$25,000 — $49,999	9.6	(6.8—13.5)
$50,000 or more	5.7	(3.7—8.6)

[a] Among all adults, the proportion who reported that they were ever told by a doctor that they had diabetes. Adults told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed. (n=2484)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 27-C: Kidney Disease by County		
	Ever Told Kidney Disease [a]	
	%	95% C.I.
Michigan	3.0	(2.6—3.5)
Western U.P.	2.3	(1.7—3.2)
Baraga County	3.1	(1.7—5.6)
Gogebic County	3.3	(1.9—5.7)
Houghton + Keweenaw Counties	1.4	(0.7—2.9)
Ontonagon County	4.2	(2.7—6.4)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had kidney disease. (Baraga n=575, Gogebic n=553, Houghton+Keweenaw n=585, Ontonagon n=734)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

An estimated 2.3 percent of Western U.P. adults have been diagnosed with kidney disease. Kidney disease is progressive, with kidney function decreasing over time. Kidney disease prevalence increases markedly with age, to an estimated local rate of 6.8 percent among those aged 65 and older.

Table 27-PC: Kidney Disease by Population Characteristic		
	Ever Told Kidney Disease [a]	
	%	95% C.I.
Western U.P. Overall	2.3	(1.7—3.2)
Age		
18-39	0.3	(0.1—1.2)
40-64	2.4	(1.4—4.1)
65+	6.8	(4.6—10.0)
Gender		
Male	2.7	(1.6—4.7)
Female	2.0	(1.4—2.9)
Education		
Less than HS graduate	6.0	(2.7—12.8)
High school graduate	2.7	(1.6—4.5)
College 1-3 years	1.3	(0.8—2.3)
4 year degree or higher	1.6	(0.7—3.3)
Household Income		
$0 — $24,999	2.9	(1.9—4.3)
$25,000 — $49,999	3.2	(1.6—5.9)
$50,000 or more	1.0	(0.5—2.1)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had kidney disease. (n=2447)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 28-C: Depression by County		
	Ever Told Depression [a]	
	%	95% C.I.
Michigan	20.6	(19.5—21.8)
Western U.P.	24.2	(21.0—27.8)
Baraga County	21.6	(16.6—27.8)
Gogebic County	29.7	(23.8—36.3)
Houghton + Keweenaw Counties	22.7	(17.8—28.5)
Ontonagon County	22.9	(18.5—27.9)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression. (Baraga n=572, Gogebic n=562, Houghton+Keweenaw n=577, Ontonagon n=735)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Depression is a common and treatable mental health condition. An estimated 24.2 percent of Western U.P. adults have ever been told by a doctor they had a depressive disorder. The local estimated lifetime depression diagnosis rates were higher among adults younger than age 65 and among those with less than a 4-year college degree. Females report a significantly higher prevalence of depression than males.

Table 28-PC: Depression by Population Characteristic		
	Ever Told Depression [a]	
	%	95% C.I.
Western U.P. Overall	24.2	(21.0—27.8)
Age		
18-39	26.7	(20.3—34.3)
40-64	25.8	(21.8—30.2)
65+	14.8	(11.5—18.9)
Gender		
Male	17.8	(13.2—23.6)
Female	29.3	(25.3—33.8)
Education		
Less than HS graduate	29.2	(16.4—46.4)
High school graduate	25.3	(20.0—31.5)
College 1-3 years	26.9	(21.7—32.8)
4 year degree or higher	14.3	(10.7—18.7)
Household Income		
$0 — $24,999	27.7	(22.2—33.9)
$25,000 — $49,999	22.9	(17.6—29.2)
$50,000 or more	16.6	(11.8—22.8)

[a] Among all adults, the proportion who reported ever being told by a doctor that they had a depressive disorder including depression, major depression, dysthymia, or minor depression. (n=2446)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 29-C: Oral Health by County						
	No Dental Visit in Past Year [a]		No Dental Insurance Coverage [b]		No Dental Care Access During Past 12 Months Due to Cost [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	27.5 (2010)	(26.2—28.9) (2010)	Not available.			
Western U.P.	41.9	(37.8—46.1)	52.2	(48.2—56.2)	23.2	(19.9—26.9)
Baraga County	40.9	(33.5—48.7)	48.8	(42.5—55.2)	23.4	(18.1—29.7)
Gogebic County	39.2	(33.3—45.4)	58.6	(52.2—64.7)	26.4	(20.9—32.7)
Houghton + Keweenaw Counties	43.0	(36.4—49.9)	49.1	(42.6—55.6)	21.1	(16.0—27.3)
Ontonagon County	42.1	(37.7—46.7)	58.7	(53.6—63.7)	27.7	(23.1—32.8)

[a] Among all adults, the proportion who reported that they had not visited a dentist or dental clinic for any reason in the previous year. (Baraga n=582, Gogebic n=563, Houghton+Keweenaw n=590, Ontonagon n=749)

[b] Among all adults, the proportion who reported having no insurance coverage for dental care. (Baraga n=581, Gogebic n=560, Houghton+Keweenaw n=591, Ontonagon n=745)

[c] Among all adults, the proportion who reported that in the past 12 months, they could not see a dentist when they needed to due to the cost. (Baraga n=587, Gogebic n=564, Houghton+Keweenaw n=592, Ontonagon n=754)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

An estimated 41.9 percent of Western U.P. adults received no oral health care in the past year. About half of local adults have no dental insurance, and cost was a barrier to accessing dental services in the last year for about a quarter of adults. Men were less likely than women to visit a dentist. Adults from low income households were less likely to visit a dentist, less likely to have dental insurance, and more likely to cite cost as a barrier to dental access.

Table 29-PC: Oral Health by Population Characteristic

	No Dental Visit in Past Year [a]		No Dental Insurance Coverage [b]		No Dental Care Access During Past 12 Months Due to Cost [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	41.9	(37.8—46.1)	52.2	(48.2—56.2)	23.2	(19.9—26.9)
Age						
18-39	50.7	(42.0—59.3)	52.9	(44.7—60.9)	28.8	(21.8—37.0)
40-64	32.2	(27.9—36.8)	43.5	(38.7—48.4)	23.0	(19.5—26.9)
65+	46.6	(41.6—51.5)	72.2	(67.9—76.1)	11.7	(8.3—16.3)
Gender						
Male	48.8	(41.5—56.1)	52.6	(45.5—59.6)	22.8	(17.1—29.6)
Female	36.3	(31.9—40.9)	51.9	(47.4—56.3)	23.6	(20.1—27.6)
Education						
Less than HS graduate	53.8	(34.9—71.6)	72.5	(47.3—88.5)	17.1	(9.4—29.1)
High school graduate	41.8	(35.3—48.5)	62.0	(55.6—68.0)	30.9	(24.5—38.1)
College 1-3 years	44.4	(37.1—52.0)	46.7	(40.4—53.1)	23.5	(18.8—28.9)
4 year degree or higher	31.2	(23.9—39.5)	31.5	(25.0—38.7)	10.8	(7.4—15.6)
Household Income						
$0 — $24,999	59.7	(51.3—67.5)	71.4	(62.1—79.3)	38.0	(31.3—45.1)
$25,000 — $49,999	30.2	(24.8—36.2)	52.6	(46.5—58.7)	23.0	(17.8—29.2)
$50,000 or more	29.1	(21.9—37.6)	23.7	(18.0—30.6)	3.4	(2.0—5.7)

[a] Among all adults, the proportion who reported that they had not visited a dentist or dental clinic for any reason in the previous year. (n=2484)

[b] Among all adults, the proportion who reported having no insurance coverage for dental care. (n=2477)

[c] Among all adults, the proportion who reported that in the past 12 months, they could not see a dentist when they needed to due to the cost. (n=2497)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 30-C: Clinical Breast Exam Indicators Among Women Aged 20 Years and Older by County				
	Ever Had Clinical Breast Exam [a]		Had Appropriately Timed Clinical Breast Exam [b]	
	%	95% C.I.	%	95% C.I.
Michigan	93.7 (2010)	(92.4—94.9) (2010)	69.9 (2010)	(68.2—71.7) (2010)
Western U.P.	95.1	(93.1—96.5)	71.0	(67.2—74.6)
Baraga County	94.6	(90.4—97.1)	69.5	(62.1—76.1)
Gogebic County	93.8	(90.1—96.2)	66.5	(59.1—73.1)
Houghton + Keweenaw Counties	96.2	(92.5—98.1)	76.9	(70.9—82.0)
Ontonagon County	92.9	(88.5—95.6)	51.4	(45.9—57.0)

[a] Among women aged 20 years and older, the proportion who reported ever having a clinical breast exam. (Baraga n=375, Gogebic n=353, Houghton+Keweenaw n=381, Ontonagon n=466)

[b] Among women aged 20 years and older, the proportion whose last clinical breast exam was within the previous three years for women age 20-39 years and within the previous year for women aged 40 years and older. (Baraga n=373, Gogebic n=350, Houghton+Keweenaw n=380, Ontonagon n=462)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Periodic clinical breast exams are a breast cancer screening procedure. An estimated 95.1 percent of Western U.P. women aged 20 and older have had a clinical breast exam, and 71.0 percent had their most recent exam within the recommended time interval. Women younger than age 40 were more likely to have reported an appropriately timed exam; however, women in this age range are advised to have screenings only once every three years as opposed to annually for women aged 40 and older.

Table 30-PC: Clinical Breast Exam Indicators Among Women Aged 20 Years and Older by Population Characteristic

	Ever Had Clinical Breast Exam [a]		Had Appropriately Timed Clinical Breast Exam [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	95.1	(93.1—96.5)	71.0	(67.2—74.6)
Age				
20-39	97.4	(92.4—99.1)	88.9	(82.0—93.4)
40-64	94.7	(91.7—96.7)	59.6	(54.6—64.4)
65+	89.8	(86.1—92.6)	55.1	(49.1—61.0)
Education				
Less than HS graduate	86.8	(74.0—93.8)	64.8	(47.6—78.8)
High school graduate	93.4	(88.6—96.2)	69.7	(63.3—75.4)
College 1-3 years	97.7	(96.0—98.7)	71.1	(64.2—77.2)
4 year degree or higher	96.5	(92.8—98.3)	76.4	(70.0—81.7)
Household Income				
$0 — $24,999	92.7	(88.7—95.4)	63.5	(56.2—70.2)
$25,000 — $49,999	95.3	(89.9—97.9)	74.9	(68.3—80.5)
$50,000 or more	98.6	(96.8—99.4)	78.0	(70.8—83.8)

[a] Among women aged 20 years and older, the proportion who reported ever having a clinical breast exam. (n=1575)

[b] Among women aged 20 years and older, the proportion whose last clinical breast exam was within the previous three years for women age 20-39 years and within the previous year for women aged 40 years and older. (n=1565)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 31-C: Mammography Indicators Among Women Aged 40 Years and Older by County

	Ever Had Mammogram [a]		Had Mammogram in Past Year [b]		Had Clinical Breast Exam and Mammogram in Past Year [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Michigan	94.2 (2010)	(93.1—95.2) (2010)	61.4 (2010)	(59.6—63.2) (2010)	53.0 (2010)	(51.1—54.8) (2010)
Western U.P.	89.8	(86.7—92.2)	53.1	(49.0—57.1)	46.7	(42.7—50.8)
Baraga County	89.9	(85.3—93.2)	54.0	(46.9—61.0)	47.9	(41.1—54.9)
Gogebic County	90.7	(83.7—94.9)	52.9	(45.3—60.3)	43.1	(36.1—50.4)
Houghton + Keweenaw Counties	88.9	(83.4—92.8)	55.5	(48.4—62.3)	50.7	(43.8—57.7)
Ontonagon County	90.8	(86.4—93.9)	45.2	(39.9—50.6)	37.8	(32.8—43.1)

Note: Data included diagnostic tests.

[a] Among women aged 40 years and older, the proportion who reported ever having a mammogram. (Baraga n=339, Gogebic n=306, Houghton+Keweenaw n=316, Ontonagon n=441)

[b] Among women aged 40 years and older, the proportion who reported having a mammogram in the past year. (Baraga n=334, Gogebic n=306, Houghton+Keweenaw n=312, Ontonagon n=438)

[c] Among women aged 40 years and older, the proportion who reported having a clinical breast exam and a mammogram in the past year. (Baraga n=334, Gogebic n=306, Houghton+Keweenaw n=316, Ontonagon n=436)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Mammography is a screening for breast cancer. An estimated 89.8 percent of Western U.P. women aged 40 and older have ever had a mammogram. An estimated 53.1 of local women aged 40 and older had a mammogram in the last year. Recommended screening frequency for women between the ages of 40 and 50 is the subject of debate, and not all medical professionals advise universal annual screening for this age group. Women from households with incomes higher than $50,000 received mammograms at higher rates than women with household incomes less than $25,000.

Table 31-PC: Mammography Indicators Among Women Aged 40 Years and Older by Population Characteristic

	Ever Had Mammogram [a]		Had Mammogram in Past Year [b]		Had Clinical Breast Exam and Mammogram in Past Year [c]	
	%	95% C.I.	%	95% C.I.	%	95% C.I.
Western U.P. Overall	89.8	(86.7—92.2)	53.1	(49.0—57.1)	46.7	(42.7—50.8)
Age						
40-64	88.8	(84.9—91.8)	52.2	(47.2—57.2)	47.6	(42.6—52.6)
65+	92.4	(88.0—95.3)	55.6	(49.6—61.5)	44.2	(38.2—50.4)
Education						
Less than HS graduate	79.4	(63.1—89.7)	30.7	(17.4—48.3)	26.3	(13.6—44.7)
High school graduate	90.6	(85.3—94.2)	55.9	(49.6—62.0)	47.7	(41.5—54.0)
College 1-3 years	90.5	(85.4—94.0)	57.5	(50.2—64.6)	51.6	(44.3—58.8)
4 year degree or higher	91.8	(86.5—95.2)	49.0	(41.5—56.5)	44.9	(37.7—52.4)
Household Income						
$0 — $24,999	85.2	(78.5—90.0)	41.5	(34.8—48.6)	37.3	(30.7—44.4)
$25,000 — $49,999	89.5	(83.0—93.7)	54.1	(46.7—61.3)	49.0	(41.6—56.3)
$50,000 or more	95.4	(91.3—97.6)	66.1	(58.4—72.9)	58.2	(50.4—65.6)

Note: Data included diagnostic tests.

[a] Among women aged 40 years and older, the proportion who reported ever having a mammogram. (n=1402)

[b] Among women aged 40 years and older, the proportion who reported having a mammogram in the past year. (n=1390)

[c] Among women aged 40 years and older, the proportion who reported having a clinical breast exam and a mammogram in the past year. (n=1392)

BRFSS surveys completed between 2006 and 2008 concluded that 68.6% ± 8.9% of Iron County women age 40 and older had a mammogram sometime in the previous two years, compared to 76% ± 2% of women in that age range across Wisconsin (2008 survey cycle).

Table 32-C: Cervical Cancer Screening by County				
	Ever Had Pap Test [a]		Had Appropriately Timed Pap Test [b]	
	%	95% C.I.	%	95% C.I.
Michigan	93.6 (2010)	(92.0—95.0) (2010)	77.7 (2010)	(75.9—79.3) (2010)
Western U.P.	95.3	(91.9—97.3)	80.7	(76.0—84.7)
Baraga County	95.9	(91.0—98.2)	79.3	(70.8—85.8)
Gogebic County	97.9	(95.7—99.0)	83.9	(77.6—88.7)
Houghton + Keweenaw Counties	93.9	(87.0—97.3)	81.0	(73.3—86.9)
Ontonagon County	95.3	(91.2—97.6)	73.3	(66.5—79.1)

Note: Data included diagnostic tests.

[a] Among women aged 18 years and older, the proportion who reported ever having a Pap test. (Baraga n=376, Gogebic n=355, Houghton+Keweenaw n=384, Ontonagon n=465)

[b] Among women aged 18 years and older who have not indicated they have had a hysterectomy, the proportion who reported having a Pap test within the previous three years. (Baraga n=241, Gogebic n=251, Houghton+Keweenaw n=281, Ontonagon n=260)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

Cervical cancer screening, also called the Pap test, is used to detect abnormal cells on the cervix that could turn into cancer over time. An estimated 95.3 percent of Western U.P. women have ever had a Pap test, and 80.7 percent had their most recent Pap test within three years. The rate of appropriately -timed cervical cancer screening decreased with age, and increased with income.

Table 32-PC: Cervical Cancer Screening by Population Characteristic

	Ever Had Pap Test [a]		Had Appropriately Timed Pap Test [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	95.3	(91.9—97.3)	80.7	(76.0—84.7)
Age				
18-39	93.4	(84.5—97.4)	87.0	(77.6—92.8)
40-64	97.8	(96.2—98.8)	78.0	(72.7—82.5)
65+	93.6	(89.6—96.1)	59.8	(51.1—67.9)
Education				
Less than HS graduate	92.1	(82.0—96.8)	67.7	(44.6—84.5)
High school graduate	93.5	(84.9—97.4)	78.5	(69.2—85.6)
College 1-3 years	97.1	(91.0—99.1)	82.2	(74.0—88.3)
4 year degree or higher	96.8	(93.3—98.5)	85.9	(80.1—90.3)
Household Income				
$0 — $24,999	94.0	(88.0—97.1)	72.2	(62.8—80.0)
$25,000 — $49,999	98.3	(96.5—99.2)	85.8	(80.2—90.1)
$50,000 or more	96.2	(83.5—99.2)	88.9	(78.9—94.5)

Note: Data included diagnostic tests.

[a] Among women aged 18 years and older, the proportion who reported ever having a Pap test. (n=1580)

[b] Among women aged 18 years and older who have not indicated they have had a hysterectomy, the proportion who reported having a Pap test within the previous three years. (n=1033)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 33-C: Prostate Cancer Screening Among Men Aged 50 Years and Older by County

	Ever Had PSA Test [a]		Had PSA Test in Past Year [b]	
	%	95% C.I.	%	95% C.I.
Michigan	83.1 (2010)	(81.0—85.1) (2010)	56.5 (2010)	(53.9—59.0) (2010)
Western U.P.	79.5	(73.8—84.3)	54.4	(46.4—62.1)
Baraga County	74.7	(63.4—83.4)	47.3	(34.9—60.1)
Gogebic County	84.0	(72.4—91.3)	57.2	(46.4—67.4)
Houghton + Keweenaw Counties	78.1	(67.8—85.8)	53.4	(39.0—67.3)
Ontonagon County	81.6	(73.5—87.6)	57.5	(50.3—64.4)

Note: In the state estimate, men who had been diagnosed with prostate cancer were excluded.

Among men aged 50 years and older, the proportion who reported…

[a] ever having a prostate-specific antigen (PSA) test. (Baraga n=145, Gogebic n=169, Houghton+Keweenaw n=135, Ontonagon n=244)

[b] having a PSA test in the past year. (Baraga n=141, Gogebic n=167, Houghton+Keweenaw n=135, Ontonagon n=240)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

An annual prostate-specific antigen (PSA) test is recommended annually for men aged 50 and older as a marker for possible prostate cancer. An estimated 79.5 percent of Western U.P. men aged 50 and older have ever had a PSA test, and 54.4 percent had one within the past year. Men aged 65 and older were significantly more likely to have had a PSA test in the past year than those aged 50 to 64.

Table 33-PC: Prostate Cancer Screening Among Men Aged 50 Years and Older by Population Characteristic

	Ever Had PSA Test [a]		Had PSA Test in Past Year [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	79.5	(73.8—84.3)	54.4	(46.4—62.1)
Age				
50-64	73.8	(64.6—81.3)	45.1	(32.6—58.3)
65+	88.6	(81.7—93.1)	68.8	(61.5—75.3)
Education				
Less than HS graduate	80.8	(59.9—92.2)	64.2	(37.2—84.5)
High school graduate	81.4	(72.9—87.7)	48.4	(39.6—57.4)
College 1-3 years	77.5	(68.1—84.8)	53.7	(43.3—63.7)
4 year degree or higher	77.4	(66.0—85.8)	54.2	(43.7—64.3)
Household Income				
$0 — $24,999	69.1	(54.5—80.7)	52.3	(34.7—69.3)
$25,000 — $49,999	83.0	(73.9—89.4)	52.0	(42.3—61.6)
$50,000 or more	84.3	(74.4—90.8)	62.3	(50.7—72.7)

Note: In the state estimate, men who had been diagnosed with prostate cancer were excluded.

Among men aged 50 years and older, the proportion who reported…

[a] ever having a prostate-specific antigen (PSA) test. (n=693)

[b] having a PSA test in the past year. (n=683)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 34-C: Colorectal Cancer Screening (Blood Stool Test) Among Adults Aged 50 Years and Older by County

	Ever Had Blood Stool Test [a]		Had Blood Stool Test in Past Two Years [b]	
	%	95% C.I.	%	95% C.I.
Michigan	44.5 (2010)	(43.0—46.1) (2010)	19.0 (2010)	(17.8—20.2) (2010)
Western U.P.	47.2	(42.6—51.7)	19.0	(14.1—25.0)
Baraga County	47.1	(40.9—53.3)	14.5	(10.6—19.5)
Gogebic County	44.2	(38.1—50.5)	15.7	(11.5—21.0)
Houghton + Keweenaw Counties	49.9	(41.7—58.1)	22.6	(13.8—34.6)
Ontonagon County	42.5	(37.8—47.3)	16.1	(13.1—19.7)

[a] Among adults aged 50 years and older, the proportion who reported ever having a blood stool test using a home kit. (Baraga n=437, Gogebic n=451, Houghton+Keweenaw n=408, Ontonagon n=619)

[b] Among adults aged 50 years and older, the proportion who reported having a blood stool test within the past two years using a home kit. (Baraga n=435, Gogebic n=449, Houghton+Keweenaw n=404, Ontonagon n=616)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

An estimated 47.2 percent of Western U.P. adults over age 50 have ever had a blood stool test for colorectal cancer screening, and 19.0 percent had one within the last two years. Statistically significant differences in screening rates between population subgroups are not evident in this analysis.

Table 34-PC: Colorectal Cancer Screening (Blood Stool Test) Among Adults Aged 50 Years and Older by Population Characteristic

	Ever Had Blood Stool Test [a]		Had Blood Stool Test in Past Two Years [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	47.2	(42.6—51.7)	19.0	(14.1—25.0)
Age				
50-64	45.1	(38.5—51.9)	18.6	(11.7—28.3)
65+	50.8	(45.8—55.8)	19.6	(16.1—23.6)
Gender				
Male	49.6	(42.0—57.2)	23.9	(15.6—34.7)
Female	44.5	(40.3—48.8)	13.5	(11.0—16.5)
Education				
Less than HS graduate	47.6	(28.2—67.7)	32.0	(12.7—60.4)
High school graduate	47.3	(41.9—52.6)	16.9	(13.2—21.4)
College 1-3 years	49.0	(43.0—55.0)	15.6	(11.3—21.1)
4 year degree or higher	42.8	(36.2—49.7)	16.3	(12.1—21.7)
Household Income				
$0 — $24,999	44.4	(34.4—54.8)	22.5	(11.7—38.7)
$25,000 — $49,999	48.5	(42.5—54.6)	19.8	(15.3—25.2)
$50,000 or more	46.2	(39.3—53.3)	14.3	(9.8—20.5)

[a] Among adults aged 50 years and older, the proportion who reported ever having a blood stool test using a home kit. (n=1915)

[b] Among adults aged 50 years and older, the proportion who reported having a blood stool test within the past two years using a home kit. (n=1904)

Iron County data were not available for the indicators summarized on this and the previous page.

Table 35-C: Sigmoidoscopy or Colonoscopy Among Adults Aged 50 Years and Older by County

	Ever Had a Sigmoidoscopy or Colonoscopy [a]		Had a Sigmoidoscopy or Colonoscopy in Past 5 Years [b]	
	%	95% C.I.	%	95% C.I.
Michigan	70.9 (2010)	(69.4—72.4) (2010)	57.4 (2010)	(55.9—59.0) (2010)
Western U.P.	62.4	(57.4—67.2)	49.8	(45.1—54.4)
Baraga County	63.2	(56.9—69.1)	46.9	(39.8—54.1)
Gogebic County	67.5	(60.9—73.6)	55.4	(48.7—61.9)
Houghton + Keweenaw Counties	59.8	(50.6—68.5)	47.1	(38.9—55.5)
Ontonagon County	61.5	(56.4—66.4)	51.5	(47.0—56.1)

[a] Among adults aged 50 years and older, the proportion who reported ever having a sigmoidoscopy or colonoscopy. (Baraga n=433, Gogebic n=433, Houghton+Keweenaw n=404, Ontonagon n=608)

[b] Among adults aged 50 years and older, the proportion who reported having a sigmoidoscopy or colonoscopy in the past five years. (Baraga n=431, Gogebic n=430, Houghton+Keweenaw n=401, Ontonagon n=607)

A statewide estimate is provided for rough benchmarking purposes. The state estimate is not directly comparable to local data because of differences in survey methodology. These differences are explained on page 167.

An estimated 62.4 percent of Western U.P. adults aged 50 and older have ever had a sigmoidoscopy or colonoscopy for colorectal cancer screening, and 49.8 percent had one within the past five years. Screening rates increased with age and income.

Table 35-PC: Sigmoidoscopy or Colonoscopy Among Adults Aged 50 Years and Older by Population Characteristic				
	Ever Had a Sigmoidoscopy or Colonoscopy [a]		Had a Sigmoidoscopy or Colonoscopy in Past 5 Years [b]	
	%	95% C.I.	%	95% C.I.
Western U.P. Overall	62.4	(57.4—67.2)	49.8	(45.1—54.4)
Age				
50-64	56.7	(49.8—63.3)	46.2	(39.8—52.7)
65+	72.8	(67.6—77.4)	56.2	(51.2—61.2)
Gender				
Male	62.5	(53.8—70.6)	50.9	(43.1—58.6)
Female	62.3	(57.7—66.6)	48.4	(43.9—52.9)
Education				
Less than HS graduate	46.0	(27.9—65.3)	30.6	(16.9—48.8)
High school graduate	65.5	(60.1—70.6)	53.6	(48.2—58.9)
College 1-3 years	63.2	(57.0—69.1)	53.9	(47.3—60.4)
4 year degree or higher	70.8	(64.1—76.7)	52.6	(45.8—59.2)
Household Income				
$0 — $24,999	47.9	(38.6—57.5)	37.3	(29.5—45.9)
$25,000 — $49,999	66.9	(60.5—72.7)	54.3	(48.0—60.4)
$50,000 or more	74.0	(67.1—79.8)	61.1	(53.8—68.0)

[a] Among adults aged 50 years and older, the proportion who reported ever having a sigmoidoscopy or colonoscopy. (n=1878)

[b] Among adults aged 50 years and older, the proportion who reported having a sigmoidoscopy or colonoscopy in the past five years. (n=1869)

Iron County data were not available for the indicators summarized on this and the previous page.

Sample Sizes for Population Characteristic Tables

Sample sizes for the results tables organized by population characteristic appear on the pages that follow. The column labels refer to the associated results table and specific indicator within that table. The row labels indicate the population subgroup represented by the sample.

Sample Size n for Population Characteristic Subpopulations

	Table 1-PC	Table 2-PC[a]	Table 2-PC[b]	Table 2-PC[c]	Table 3-PC[a]	Table 3-PC[b]	Table 3-PC[c]	Table 4-PC[a]	Table 4-PC[b]	Table 4-PC[c]
Age										
18-39	272	271	271	268	271	271	268	270	272	270
40-64	1166	1165	1167	1139	1166	1167	1139	1154	1160	1156
65+	1098	1084	1083	1033	1084	1084	1033	1064	1061	1066
Gender										
Male	902	898	901	875	898	901	875	885	887	888
Female	1634	1622	1620	1565	1623	1621	1565	1603	1606	1604
Education										
Less than HS graduate	134	133	130	125	133	130	125	128	128	130
High school graduate	970	958	959	920	958	959	920	949	952	952
College 1-3 years	822	820	821	798	821	822	798	814	816	814
4 year degree or higher	610	609	611	597	609	611	597	597	597	596
Household Income										
$0 - $24,999	907	899	897	862	900	898	862	884	887	887
$25,000 - 49,999	774	771	773	746	771	773	746	765	764	767
$50,000 or more	618	619	618	606	619	618	606	608	611	607

NA = Not applicable

Sample Size n for Population Characteristic Subpopulations (continued)

	Table 5-PC[a]	Table 5-PC[b]	Table 5-PC[c]	Table 6a-PC[a]	Table 6a-PC[b]	Table 6a-PC[c]	Table 6b-PC	Table 7-PC	Table 8-PC[a]	Table 8-PC[b]
Age										
18-39	270	270	270	272	269	272	270	272	259	272
40-64	1154	1154	1154	1174	1158	1162	1162	1174	1063	1174
65+	1087	1087	1087	NA	1094	1095	1088	1059	721	1106
Gender										
Male	897	897	897	477	898	902	899	885	693	909
Female	1614	1614	1614	969	1623	1627	1621	1620	1350	1643
Education										
Less than HS graduate	129	129	129	28	131	131	131	128	68	134
High school graduate	959	959	959	461	966	970	964	948	724	976
College 1-3 years	817	817	817	541	815	819	816	818	691	829
4 year degree or higher	606	606	606	416	609	609	609	611	560	613
Household Income										
$0 - $24,999	902	902	902	429	901	905	903	891	662	914
$25,000 - 49,999	769	769	769	452	773	773	770	762	640	779
$50,000 or more	613	613	613	469	613	615	613	617	570	620

NA = Not applicable

Sample Size n for Population Characteristic Subpopulations (continued)

	Table 9-PC	Table 10-PC	Table 11-PC[a]	Table 11-PC[b]	Table 11-PC[c]	Table 12-PC	Table 13-PC	Table 14-PC[a]	Table 14-PC[b]	Table 15-PC[a]
Age										
18-39	259	269	271	272	271	77	271	272	271	263
40-64	1063	1164	1163	1164	1167	255	1165	1159	1159	1151
65+	721	1081	1092	1090	1092	103	1086	1084	1085	1062
Gender										
Male	693	897	898	899	899	142	899	899	898	868
Female	1350	1617	1628	1627	1631	293	1623	1616	1617	1608
Education										
Less than HS graduate	68	130	132	132	131	40	131	132	132	125
High school graduate	724	959	963	963	968	178	959	952	953	946
College 1-3 years	691	818	820	822	821	162	822	819	819	807
4 year degree or higher	560	607	611	609	610	55	610	612	611	598
Household Income										
$0 - $24,999	662	898	905	906	907	228	901	897	899	869
$25,000 - 49,999	640	769	771	770	771	119	771	769	769	764
$50,000 or more	570	618	616	615	617	63	615	617	615	615

NA = Not applicable

Sample Size n for Population Characteristic Subpopulations (continued)

	Table 15-PC[b]	Table 16-PC[a]	Table 16-PC[b]	Table 17-PC[a]	Table 17-PC[b]	Table 17-PC[c]	Table 18-PC	Table 19-PC[a]	Table 19-PC[b]	Table 20-PC
Age										
18-39	270	227	38	247	247	128	256	NA	NA	272
40-64	1160	1059	446	1121	1117	973	1130	NA	NA	1163
65+	1088	959	610	1036	1032	943	1027	NA	NA	NA
Gender										
Male	900	829	484	857	854	727	852	422	384	471
Female	1618	1416	610	1547	1542	1317	1561	664	621	964
Education										
Less than HS graduate	132	104	60	120	119	92	124	105	91	28
High school graduate	956	852	455	908	916	780	912	507	473	455
College 1-3 years	820	754	356	790	781	661	785	285	263	537
4 year degree or higher	610	535	223	586	580	511	592	189	178	415
Household Income										
$0 - $24,999	899	775	422	840	842	661	860	478	444	425
$25,000 - 49,999	769	707	358	743	739	655	741	320	296	448
$50,000 or more	617	563	218	604	599	537	595	147	136	469

NA = Not applicable

Sample Size n for Population Characteristic Subpopulations (continued)

	Table 21-PC[a]	Table 21-PC[b]	Table 22-PC	Table 23-PC[a]	Table 23-PC[b]	Table 24-PC[a]	Table 24-PC[b]	Table 24-PC[c]	Table 25-PC[a]	Table 25-PC[b]
Age										
18-39	265	252	270	268	34	271	271	271	269	271
40-64	1141	1107	1134	1155	522	1160	1157	1159	1156	1156
65+	1050	1025	1031	1048	631	1048	1044	1033	1045	1033
Gender										
Male	874	849	864	885	404	886	884	879	882	879
Female	1582	1535	1571	1586	783	1593	1588	1584	1588	1581
Education										
Less than HS graduate	125	122	126	127	71	128	128	125	125	127
High school graduate	925	907	915	936	500	936	934	926	937	926
College 1-3 years	811	783	806	810	371	816	814	815	812	811
4 year degree or higher	595	572	588	598	245	599	596	597	596	596
Household Income										
$0 - $24,999	872	844	856	874	478	876	869	865	874	865
$25,000 - 49,999	758	731	749	759	347	761	762	761	759	759
$50,000 or more	606	593	608	610	248	611	611	611	608	610

NA = Not applicable

Sample Size n for Population Characteristic Subpopulations (continued)

	Table 25-PC[c]	Table 26-PC	Table 27-PC	Table 28-PC	Table 29-PC[a]	Table 29-PC[b]	Table 29-PC[c]	Table 30-PC[a]	Table 30-PC[b]	Table 31-PC[a]
Age										
18-39	269	269	271	272	268	270	272	177 (age 20+)	177 (age 20+)	NA
40-64	1154	1153	1148	1143	1161	1159	1161	754	752	750
65+	1042	1062	1028	1031	1055	1048	1064	644	636	652
Gender										
Male	880	888	873	871	885	882	891	NA	NA	NA
Female	1585	1596	1574	1575	1599	1595	1606	NA	NA	NA
Education										
Less than HS graduate	126	129	125	125	127	127	129	74	71	71
High school graduate	935	952	922	925	949	942	950	615	609	583
College 1-3 years	808	813	808	810	809	812	818	532	531	447
4 year degree or higher	596	590	592	586	599	596	600	354	354	301
Household Income										
$0 - $24,999	871	891	859	868	886	882	891	577	570	523
$25,000 - 49,999	759	761	755	750	763	761	768	470	468	411
$50,000 or more	607	603	610	605	609	610	611	370	370	317

NA = Not applicable

Sample Size n for Population Characteristic Subpopulations (continued)										
	Table 31-PC[b]	Table 31-PC[c]	Table 32-PC[a]	Table 32-PC[b]	Table 33-PC[a]	Table 33-PC[b]	Table 34-PC[a]	Table 34-PC[b]	Table 35-PC[a]	Table 35-PC[b]
Age										
18-39	NA	NA	184	175	NA	NA	NA	NA	NA	NA
40-64	747	748	754	518	286 (age 50-64)	283 (age 50-64)	840 (age 50-64)	837 (age 50-64)	834 (age 50-64)	831 (age 50-64)
65+	643	644	642	340	407	400	1075	1067	1044	1038
Gender										
Male	NA	NA	NA	NA	NA	NA	737	733	741	737
Female	NA	NA	NA	NA	NA	NA	1178	1171	1137	1132
Education										
Less than HS graduate	71	70	74	36	47	47	118	115	114	112
High school graduate	576	574	621	372	260	255	787	783	767	763
College 1-3 years	442	446	530	353	209	206	582	579	571	570
4 year degree or higher	301	302	355	272	177	175	428	427	426	424
Household Income										
$0 - $24,999	516	518	579	366	225	221	707	702	691	688
$25,000 - 49,999	409	408	470	305	242	239	598	595	590	589
$50,000 or more	316	318	373	271	165	163	413	411	408	404
NA = Not applicable										