2008 Community Health Assessment Project
Final Report

An Assessment of Community Health Status
within the 11-County Munson Healthcare System Service Area
(Antrim, Benzie, Crawford, Grand Traverse, Kalkaska, Leelanau,
Manistee, Missaukee, Otsego, Roscommon, and Wexford)

Munson Community Health Department
550 Munson Ave., Ste. 103
Traverse City, MI 49686
231-935-9256

TABLE OF CONTENTS

Executive Summary

The mission of Munson Healthcare is to both "provide superior quality care and to promote community health". Community Health Assessment involves an exploration of the health status of the total population within a given geographical area. Community Health Assessment is an important component of a community health improvement strategy as it provides guidance as to where efforts should be concentrated, as well as where progress has been made. National standards for not-for-profit health care community benefit programs include implementation of a community health assessment process on a regular basis, and define community benefit in part as programs or activities carried out in response to identified community needs (Catholic Health Association). In addition to identifying community needs for hospital community benefit purposes, the data documented through an assessment serves as a useful reference for program and resource development efforts community-wide.

In the past, regional community health assessments were completed by a multi-agency collaborative group, (of which Munson Healthcare was a member) under the leadership of the North Central Council of the Michigan Hospital Association. In 1995 and 2000, large scale phone surveys in the region provided comprehensive health status data for the population. Despite a regional goal of conducting an assessment every five years, there has not been one conducted since 2000 due to a lack of resources. In 2007, the Munson Healthcare Community Health Committee of the Board of Directors gave approval for Munson Community Health staff to conduct an updated assessment using secondary data analysis as a primary methodology. Research and quantitative as well as qualitative analysis was completed in May 2008. A wide variety of indicators are included in this report and are organized into the following categories: demographics, general health status, access to care, maternal and child health, behavioral risk factors, chronic disease and conditions, and emergent health trends reported by key informants.

Several key findings and overarching themes emerge from a review of the comprehensive findings:

<u>Population Growth and Aging</u>

The 11 county region continues to be a center of significant growth within the State. The population in the region had rapid growth from 1990 to 1995, and from 1995 to 2000, growing by almost 11% during each 5 year period, outpacing growth within the State as a whole. From 2000 to 2005, this growth slowed to about 6%, which is still **more than three times higher than the growth projected for the State as a whole** for the same period (1.8%). This growth has been most concentrated within the "baby boomer" generation, and the group over the age of 65 years. Population estimates for 2005 show the age group of 65 years and older accounting for 16.5% of the total population of the 11 counties while statewide, and nationally, this age group only accounts for about 12.5%. As older age groups tend to be more intensive users of health care services, this **concentration of older residents within the region implies growing health service needs.**

Significant Access Issues and Significant Disparities between Income Groups

There are significant access and health issues within the region, particularly among lower income groups. Decades of population-based research has established income as a primary determinant of health; **as economic stressors on families within the region intensify, health status is increasingly threatened.** There are several indicators (rising poverty rate, rising rates of uninsured, and an increase in the percentage of people reporting fair or poor health status) as well as universal key informant reports of the worsening socio-economic situation impacting the health status of the region. **The majority of births (50.2%) and a large proportion of children (37.3%) in the region are now covered by Medicaid.** These **findings highlight the importance of safety net and public services** including free clinics, county health programs and other low cost or no cost services.

General Health Status of the Region Comparable to the State, better in a few specific areas

The general health status of residents of the 11 county Munson Healthcare region, is on average, as good or better than that of all residents statewide. For several key indicators, the 11 county region is doing better than the state: **the age-adjusted, standardized total mortality rate (an indicator of overall risk of dying of any cause for all ages) is significantly lower than rates for the State and U.S.** Ambulatory Care Sensitive Hospitalizations (theoretically preventable if timely and appropriate ambulatory care were provided) are lower within the region than for the State, which is suggestive of better overall management of health conditions, and perhaps a healthier population. In addition, **for a variety of maternal and child health indicators, the 11 county region is doing better than the State;** the infant mortality rate, which is considered one of the most sensitive indicators of the overall well-being of a society, is lower than the rate for all of Michigan. Indicators for early prenatal care, low birth weight, prematurity, breastfeeding and immunizations have improved over time and for the most recent period reviewed, are all better than State averages. Cancer is another noteworthy area. While the incidence of cancer appears slightly higher in the 11 counties than statewide, the cancer mortality rate, or risk of dying from cancer, is slightly lower. **There have been significant improvements made at all levels – regional, State and national - in the cancer mortality rate since the 1990's**, which is likely attributable to improvements in treatment, and access to early detection and treatment.

Chronic Disease and Related Risk Factors are Affecting Large Proportions of the Population

A review of indicators related to chronic disease and related risk factors reveals that these health issues are affecting significant proportions of the population. **Most notably, the proportion of adults in the 11 county region who are obese has increased rapidly from about 16.7% in 1995 to almost 28% in 2005. In addition, 78% of adults report inadequate fruit and vegetable consumption, 22% report no leisure-time physical activity, and 22% are current smokers.** Regional chronic disease rates parallel this high prevalence of risk factors. **An estimated 13% of all adults have diabetes (up from 5% in 1995), 32% have hypertension, and approximately 8% of adults have been told they have angina or coronary heart disease.**

Introduction

Since the early 1990's, Munson has been a significant contributor to regional efforts to assess the health status and health needs of community members within its service area. Assessment is important for identifying emerging health needs and priorities as well as evaluating the impact of current and previous programs and initiatives. In 1995 under the leadership of the North Central Council of the Michigan Hospital Association, a multi-agency committee commissioned a household survey to provide a comprehensive profile of the heath status of Northern Michigan residents. A professional survey team was contracted to conduct and provide analysis of a telephone survey of more than 6,000 adults in 21 counties of Northern Lower Michigan. The survey was repeated in 2000 across the same counties. Comparisons of findings for both periods were made to State and national averages, and results were used by a wide range of community agencies and organizations to identify priorities for program and resource development.

Regional collaborating organizations had set the goal of conducting an assessment every five years; however, there has not been one conducted since 2000 due to a lack of funding to carry out a survey on the same scale as in 1995 and 2000. However, many of the indicators tracked in 1995 and 2000 are available through other reliable data collection efforts that have taken place subsequently. In 2008, as an alternative to collecting new data by implementing a survey or other primary data collection method, already available sources of data were compiled and used for secondary analysis. Input and assistance in interpretation was provided by a number of community partners, including representatives from local county health departments and Munson staff. In addition to this full report, a PowerPoint presentation and summary chart of indicators were developed. Findings were presented to the Munson Healthcare Community Health Committee (a committee of the Hospital Board of Directors), and further presentations are planned to a number of community groups. The assessment will be available to regional health and human service organizations to assist with planning and program development efforts.

Methodology

A wide variety of publicly available data sources were reviewed to identify existing data for key community health indicators. Whenever possible, data from the individual county level was combined to yield indicators for the complete 11 county Munson Healthcare service area. When county-specific data was not available, or combinable, data for other county groupings approximating the 11 county region was used instead, particularly for trend analysis using historical data. Examples include the 1995 and 2000 Community Health Assessment which covered 21 counties across northern lower Michigan, and the 205 Michigan Household Health Insurance Survey. Indicators for the 11 county area were then compared to State and national averages, as well as to results from the 1995 and 2000 regional Community Health Assessments to explore trends. The following data sources were used in the compilations and secondary analyses presented in this assessment:

Data Source	Population Included	Notes/ Sample Size	Contact/Reference
U.S. Census Estimates	All residents	Census estimates	www.census.gov OR http://www.mdch.state.mi.us/pha/osr/index.asp
U.S. Census Bureau, Small Area Income and Poverty Estimates	All residents	Census estimates	http://www.census.gov/cgi-bin/saipe/saipe.cgi http://www.mdch.state.mi.us/pha/osr/index.asp

Data Source	Population Included	Notes/ Sample Size	Contact/Reference
Kid's Count Data	Children (under age 18 years)	Varies by indicator	http://www.kidscount.org/cgi-bin/cliks.cgi
Michigan Household Health Insurance Survey, 2005	Households age 0-64, sub-sample of 20 counties in northern lower Michigan	Telephone survey, n=1,311 households; data collected on 3,292 individuals	http://www.michigan.gov/mdch/0,1607,7-132-2943_37434-151433--,00.html
Behavioral Risk Factor Surveillance Survey, (BRFS), special data run for 11 county area, 2005	All adults (age 18+) living in the 11 counties	Annual telephone survey, n=511 for 2005; N= 442 for 2004/2006 combined data	Provided by Ann Rafferty, PhD, Chronic Disease Epidemiology Division, Michigan Department of Community Health
North Central Council of the Michigan Hospital Association, (NCCMHA) "Community Indicators for the North Central Council Report", compilation of 2006 BRFS data	All adults (age 18+) living in 21 counties of northern lower Michigan	Annual telephone survey, n=420 for 2006;	Prepared by Public Sector Consultants, provided by Emily Henning, NCCMHA ehenning@voyager.net
Behavioral Risk Factor Surveillance Survey, (BRFS), results for Michigan, 1995-2005	All adults (age 18+) living in Michigan	Annual telephone survey, 1995: n= 2,523; 2000:n=2,522 2005:n=12,000	http://www.michigan.gov/mdch/0,1607,7-132-2945_5104_5279_39424---,00.html
Behavioral Risk Factor Surveillance Survey, (BRFS), results for the U.S., 1995-2005	All adults (age 18+) living in the U.S.	Annual telephone survey, n= all 50 states and U.S. territories	www.cdc.gov/brfss (results used are national medians per CDC technical guidelines)
North Central Council of the Michigan Hospital Association, Community Health Assessment 1995, 2000	Adults living in the 21 county NCCMHA region of upper lower Michigan	Telephone survey conducted in 1995 and 2000; n=6,000	Selected findings at: www.healthupnorth.org Tabulated results are available at the Grand Traverse County Health Department, contact Dr. Mike Collins at didjdoctor@sbcglobal.net
Michigan Inpatient Database	All Michigan residents	Registry of all hospitalizations by county of	Michigan Department of Community Health data compilations http://www.michigan.gov/mdch/0,1607,7-132-2944_5324---,00.html

Data Source	Population Included	Notes/ Sample Size	Contact/Reference
	admitted to a Michigan hospital	residence	
Michigan Resident Cancer Incidence Files, special data run for the 11 counties	All new cases of invasive cancer reported to MDCH	Registry of all newly diagnosed cases of cancer processed by MDCH	Provided by Georgia Spivak, PhD, Michigan Department of Community Health, Vital Records and Health Data Development Section, Cancer Statistics
Michigan Resident Death Files	All deaths among Michigan residents	Registry of all deaths processed by MDCH	MDCH, Vital Records Division, county specific data found at: http://www.mdch.state.mi.us/pha/osr/index.asp?Id=4; data compilation prepared by Elizabeth Kushman, MPH
Michigan Resident Birth Files, data run for 11 counties	All births among Michigan residents	Registry of all births processed by MDCH	MDCH, Vital Records Division, data compilation prepared by Elizabeth Kushman, MPH; some county-specific data found at: http://www.mdch.state.mi.us/pha/osr/chi/IndexVer2.asp
Healthy Futures Program Data Compilation	Pregnant women and infants residing in 7 of the 11 counties	Database of health measure for Healthy Futures program participants	Healthy Futures Program, Betsy Hardy, RN, Coordinator, bhardy@mhc.net
Northern Michigan Diabetes Initiative Community Survey, 2007	All adults (age 18+) living in the 11 counties	Telephone survey, n=1,001	Northern Michigan Diabetes Initiative Survey results, data compilation prepared by Elizabeth Kushman, MPH. Results available through Diane Butler at dbutler@mhc.net

In addition to quantitative analysis of secondary data, a series of "key informant" interviews and group discussions were held in order to seek input from community based health providers who encounter community health issues first hand on a daily basis. Thirteen different entities were contacted, representing a variety of community and school based providers and organizations serving the public. Eight of the thirteen participated in either a phone interview or in person group discussion. Input was gathered using the following questions as a discussion guide:

1. Are there any trends or changes in the kinds of health issues or the nature of health issues you are seeing in the people you serve? (i.e., more of this, less of that, etc. than in past years)

2. Since 2005, have there been any new health or health-related issues that you are seeing among the people you serve that you have never or rarely seen before?

3. How would you compare the demand or need for services in the past few years compared to five or ten years ago? Have you seen any trends or change in the demographics of those in need of your services (age, gender, ethnicity, education level, residency, etc.)

4. Is there anything else you would like to add that you feel would be important to mention in an assessment of community health, especially anything that might not be captured by or reflected in standard indicators and data that is routinely collected?

Notes were recorded from each discussion and summarized into a report from each group. Group reports were then analyzed to identify common themes. Results are reported below in the section on Findings.

All preliminary findings from both the quantitative and qualitative analyses were compiled and presented to an advisory group for review and collaborative interpretation. The advisory group included representatives from county health departments and Munson staff. Key findings and interpretations were identified, as well as recommendations for presentation and formatting.

Data Limitations: The quality and accuracy of each indicator presented in this report varies with the specific data source used. Data derived from telephone survey sources (BRFS, NMDI survey, Michigan Household Health Insurance Survey) are estimates based on random samples; the bigger the sample used, the better the estimate. All survey data presented in this assessment have been weighted for sampling error and age-adjusted in accordance with general survey research standards to yield the highest quality estimates possible for the given population. Wherever possible 95% confidence intervals are presented to provide an indication on the quality of the estimate. As with all survey estimates, the data is subject to limitations due to the existence of households without telephones, and the nature of self-reporting. Respondents may tend to underreport health risks or conditions. In general, data derived from registry-based sources (Michigan Resident Death File, Michigan Resident Cancer Incidence File, and the Michigan Inpatient Database) offers greater precision as they are based on complete counts rather than random samples.

Summary Table of Community Health Assessment Indicators

Community Health Indicators for the 11 County* Munson Healthcare Region and the State of Michigan, 2005 (unless otherwise noted)

INDICATOR	11 COUNTY REGION	MICHIGAN	NOTES
Total Population	303,652	10,120,860	U.S. Census Estimates
% of Total Population Age 65+	16.5%	12.4%	U.S. Census Bureau Small Area Income and Poverty Estimates
Percentage of People in Poverty	11.1%	13.1%	U.S. Census Bureau Small Area Income and Poverty Estimates
Percentage of Children in Poverty (2004)	15.9%	17.3%	Kid's Count Data compilation of U.S. Census Bureau Small Area Income and Poverty Estimates
Percentage of Adults Reporting Fair or Poor Physical Health Status	15.8%	15.2%	BRFS 2005
Total Age-Adjusted Mortality Rate (2006), standardized to the 2000 U.S. Population	751.9 per 100,000	812.8 per 100,000	MDCH, MI Resident Death File, 2006
Percentage of Adults age 18-64 without Health Care Coverage	22.9%	14.5%	BRFS 2005
Percentage of Adults who could not get health care in past 12 months due to cost	14.0%	12.7%	BRFS 2005
Percentage of Adults with no Dental Visit in Past Year (2004/2006)	30.0%	25.4%	BRFS 2004 and 2006 combined
Percentage of Ambulatory Care Sensitive Hospitalizations	15.8%	19.8%	Michigan Inpatient Database, MDCH data compilation, 2005
Infant Mortality Rate (2003-2006 4 yr average)	6.61 per 1,000	7.85 per 1,000	MDCH Vital Records Division, Matched Infant Death Files, 2003-2006
Percentage of Births to Teen Mothers	2.5%	3.1%	MDCH Vital Records Division, Resident Birth Files 2005
Percentage of Births with First Trimester Prenatal Care	86.5%	83.3%	MDCH Vital Records Division, Resident Birth Files 2005
Percentage of Births with Adequate Prenatal Care	83.4%	Not Available	MDCH Vital Records Division, Resident Birth Files 2005
Percentage of Births covered by Medicaid	50.2%	36.7%	MDCH Vital Records Division, Resident Birth Files 2005
Percentage of births with	20.1%	13.7%	MDCH Vital Records

INDICATOR	11 COUNTY REGION	MICHIGAN	NOTES
maternal smoking			Division, Resident Birth Files 2005
Percentage of Births with NICU admission	8.2%	5.9%	MDCH Vital Records Division, Resident Birth Files 2005
Percentage of Births with Low Birth Weight (<2500 grams)	6.10%	8.36%	MDCH Vital Records Division, Resident Birth Files 2005
Percentage of Births Premature (<37 weeks)	9.0%	10.7%	MDCH Vital Records Division, Resident Birth Files 2005
Percentage of 2 year olds (19-35 months) fully immunized	82% (7 county Healthy Futures participants)	78%	Healthy Futures Program Data compilation 2006
Percentage of new mothers breastfeeding at 2 months	70% (7 county Healthy Futures participants)	46%	Healthy Futures Program Data compilation 2006
Childhood Asthma Hospitalization Rate	14.0 per 100,000	19.9 per 100,000	MI Inpatient Database, MDCH compilation 2006
Percentage of Adults who are Obese	27.8%	26.5%	BRFS 2005
Percentage of Adults who are Current Smokers	22.3%	21.9%	BRFS 2005
Percentage of Adults Reporting Binge drinking in past month	16.3%	16.7%	BRFS 2005
Percentage of Adults with No Leisure time Physical Activity	21.9%	22.6%	BRFS 2005
Percentage of Adults with Inadequate Fruit and Vegetable Consumption	78.4%	77.2%	BRFS 2005
Percentage of Adults age 50+ who have had colonoscopy or sigmoidoscopy in past 5 years	49.9% (screened in past 5 years)	69.3% (ever screened)	BRFS 2004 and 2006 combined
Percentage of Women age 40+ with mammogram and Clinical breast exam in past year	62.9%	57.2%	BRFS 2004 and 2006 combined
Average total number of new cancer cases per year (’00-’04 average)	1,811	49,702 (2004)	MDCH, MI Resident Cancer Incident Files
Total Cancer Incidence Rate (’02-’04), age-adjusted and standardized to the 2000 U.S. population	508.6 per 100,000	480.6 per 100,000 (2004)	MDCH, MI Resident Cancer Incident Files
Total Cancer Mortality Rate (’02-’04), age-adjusted and	179.8 per 100,000	189.9 per 100,000 (2004)	MDCH, MI Resident Death Files

INDICATOR	11 COUNTY REGION	MICHIGAN	NOTES
standardized to the 2000 U.S. population			
Percentage of Adults who have been told they have diabetes	13.4% (2007)	9.0% (2006)	County Data from 2007 Northern Michigan Diabetes Initiative Survey; State data from BRFS
Percentage of Adults who have ever been told they have hypertension	31.7%	27.8%	BRFS 2005
Percentage of Adults who have ever been told they have high cholesterol	43.3%	38.9%	BRFS 2005
Percentage of Adults with Current Asthma	9.9%	9.0%	BRFS 2005

* 11 counties included: Antrim, Benzie, Crawford, Grand Traverse, Kalkaska, Leelanau, Manistee, Missaukee, Otsego, Roscommon, and Wexford

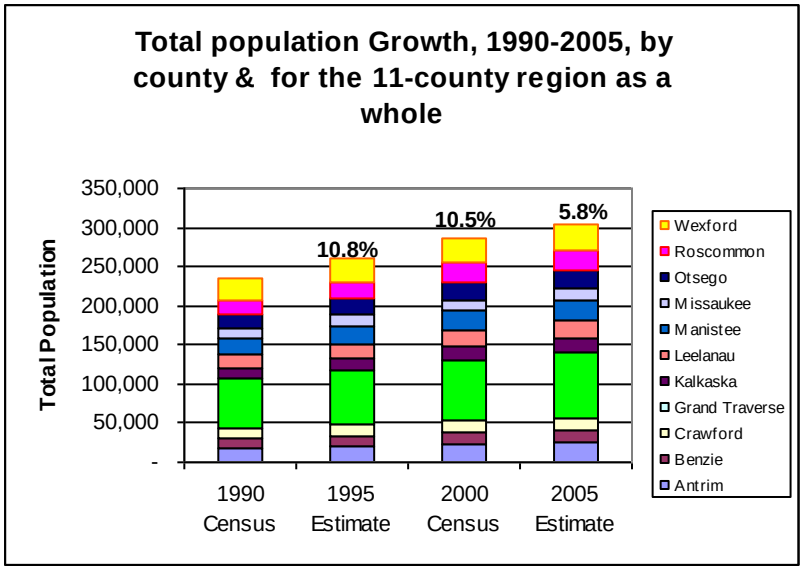
Data compiled by Elizabeth Kushman, MPH

Findings

Detailed results, tables and charts by topic area are presented below. Measures for the 11 county area are compared to measures for the State and U.S. for the most recent year available, in most cases 2005 or 2006. For a few indicators, data for the specific 11 counties was not accessible. In this case, data for the larger regional grouping of 21 Northern Lower Michigan counties (which include the 11 counties) that was used for the previous 1995 and 2000 Community Health Assessments was used instead. When available, analyses of trend over time are presented as well.

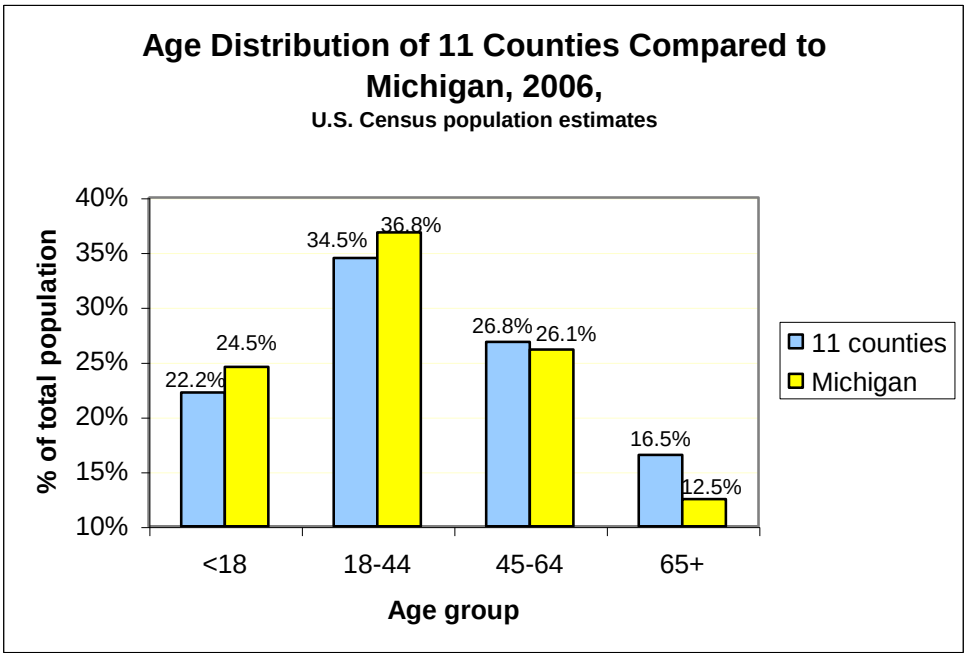
Demographics: Total Population Growth

The total population living in the 11 counties was estimated to be 303,652 in 2005. The population in the region had rapid growth from 1990 to 1995, and from 1995 to 2000, growing by almost 11% during each 5 year period, outpacing growth within the State as a whole. From 2000 to 2005, this growth slowed to about 6%, which is still more than three times higher than the growth projected for the State as a whole for the same period (1.8%). The following chart shows total population growth by county and for the 11-county region as a whole. Each of the 11 counties has growth rate estimates for 2000 to 2005 which are higher than the State average. Out of the 11 counties, Manistee county had the lowest rate at 2.8%. Benzie county (the second fastest growing county in the State) had the highest at 10.3%, and Grand Traverse (the third fastest growing county in the State) at 8.1%. The percentages shown on the chart below are total growth rates for all 11 counties combined for the previous 5-year period.

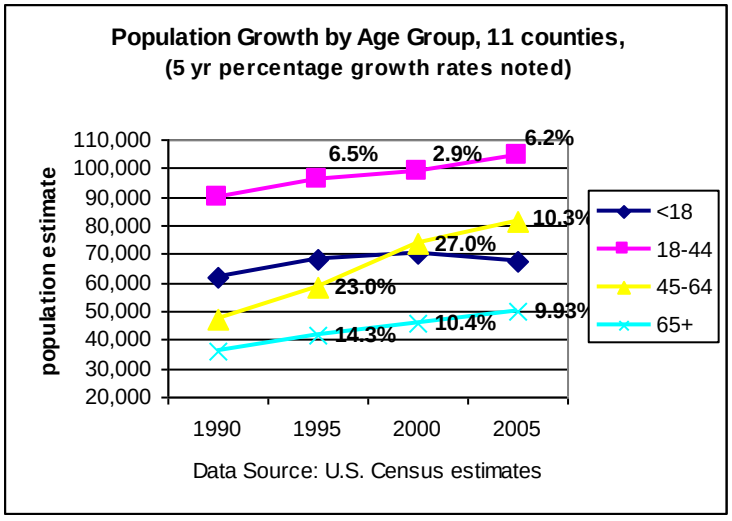


Demographics: Age Distribution & Growth by Age Group

The age structure of the 11 county population is skewed toward older age groups compared to the State.

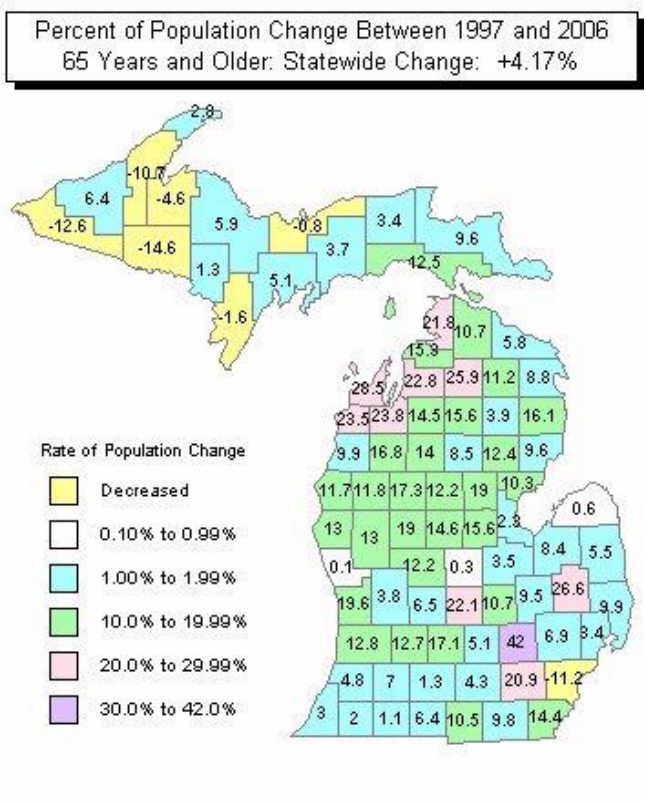


An analysis of growth by age group reveals that the robust growth within the region is fueled predominantly by people over the age of 44, while the population of children (under the age of 18) is actually declining. The graph below shows total growth by age groups, which differ substantially:



The rapid growth in population age 45 to 64 from 1990 to 1995 and from 1995 to 2000 probably reflects both the aging of the "baby boomer" population and retirees moving into the area.

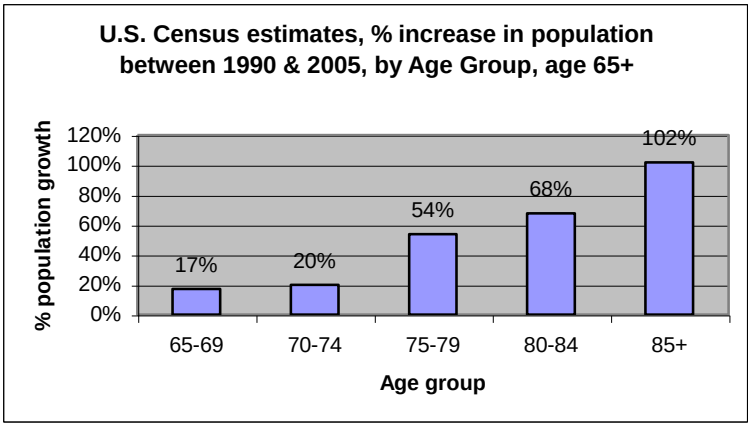
Growth in the population age 65 years and older is significant to an exploration of community health issues because risk for most chronic diseases rises with age, and older residents tend to have more health care needs. For this age group, our region is a center of growth within the State. Among the top ten counties in the State with the most growth for age 65 and older, five are in our area: Antrim, Benzie, Grand Traverse, Leelanau and Otsego (Source: U.S. Census population estimates):



By 2005, the proportion of the total (all age) population within the 11 counties which was 65 years or older was close to 17%. This is about one third higher than the proportion for the State and the U.S. as a whole, which has been steady at about 12%.

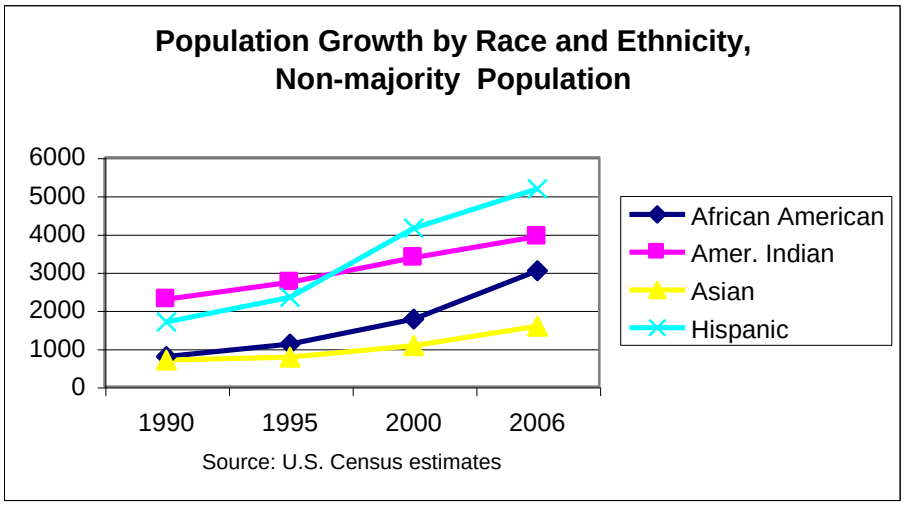
Percentage of total Population age 65+	**1990**	**2005**
11 Counties	15.4%	16.5%
Michigan	11.9%	12.4%
U.S.	12.6%	12.4%

Within the age 65 and older age group, people age 75 and older remain a relatively small sub-group, but are growing very rapidly. As the chart below shows, the population age 85 and older had more than 100% growth, doubling between 1990 and 2005.

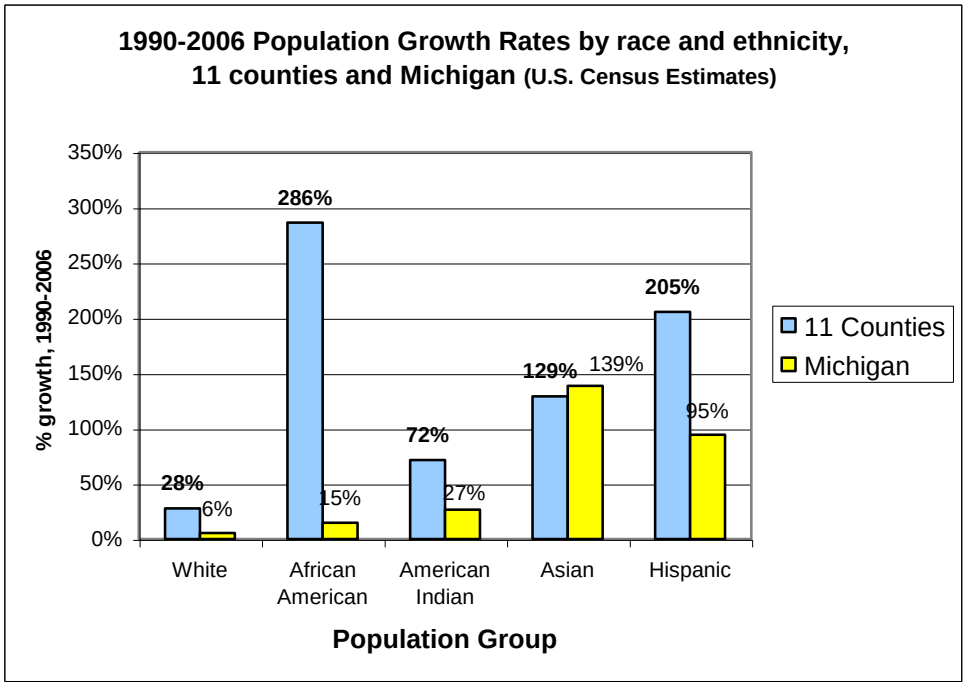


Demographics: Racial and Ethnic Diversity

There is relatively low racial or ethnic diversity within the 11 county population, with about 95% of the population being Non-Hispanic,White according to 2006 estimates. However, population growth within non-majority groups has been significant, with the total number of African American, American Indian, Hispanic and Asian people combined increasing from about 5,500 in 1990 to an estimated 13,725 in 2006. In the late 1990's Hispanics surpassed American Indians to become the largest non-majority group in the area.

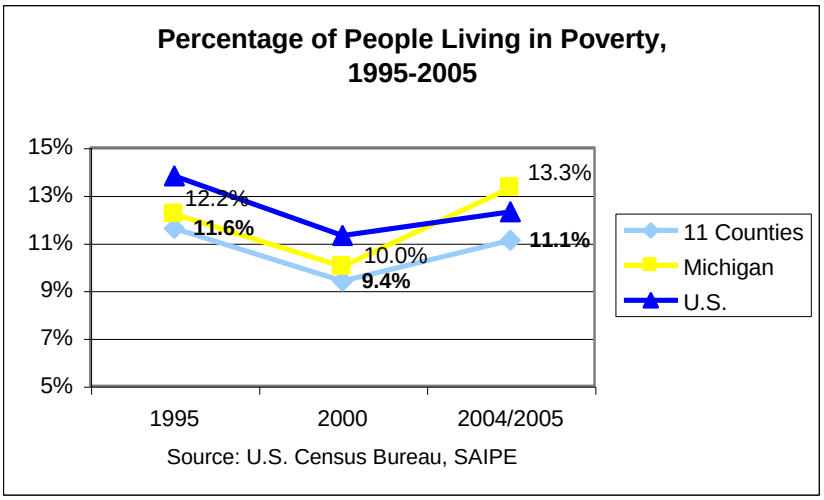


Population growth rates for the period of 1990-2006 show that growth within the African American, American Indian, and Hispanic populations within the 11 county area was significantly stronger than within the State as a whole.



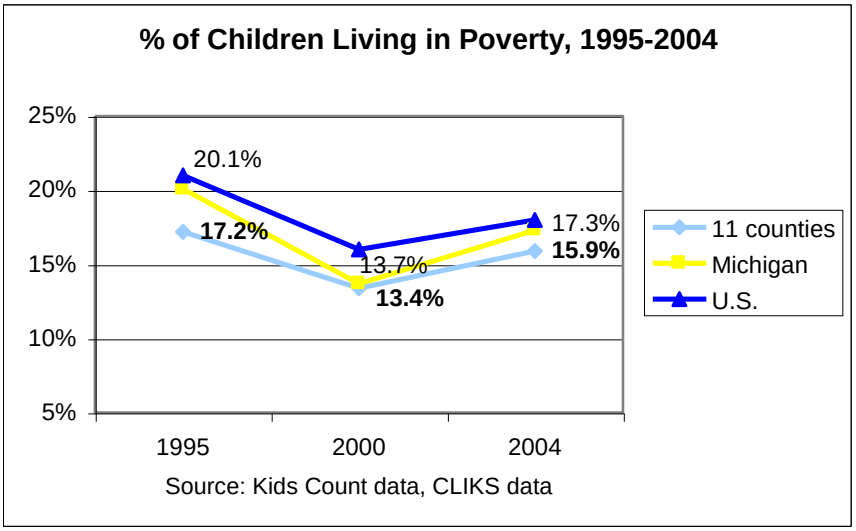
Demographics: Income & Poverty

Income is one of the most robust and consistent determinants of health status in the U.S., with those living in poverty being at much higher risk for poor health. Between 1995 and 2000, progress was made in reducing the percentage of people living in poverty at the local, State and national level. Between 2000 and 2005, this trend was reversed. Within the 11 counties, in 2006 an estimated 11.1% of the total population had incomes below the federal poverty rate, which was about $9,800 for a single person, and $20,000 for a family of four.



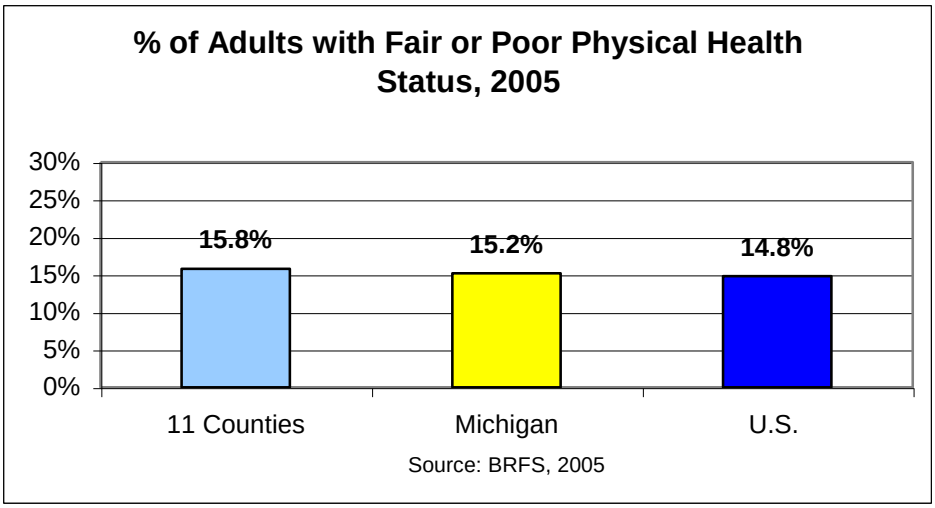
Although used widely as a key indicator, the federal poverty level only captures a portion of the total population living in economic stress. There is a much larger group working at low wage jobs who do not fall below the poverty line, but still do not earn enough to cover the estimated $29,000 per year minimum needed for cost of living in our region for a family of four (Northwest Michigan Human Services).

Poverty disproportionately affects children in the U.S. Between 1995 and 2000, the total number of children increased by 4%, but the number living in poverty decreased by 23%; substantial progress had been made. However, from 2000 to 2004, this trend was reversed, with the total population of children decreasing by 4%, and the number in poverty increasing by 15%.

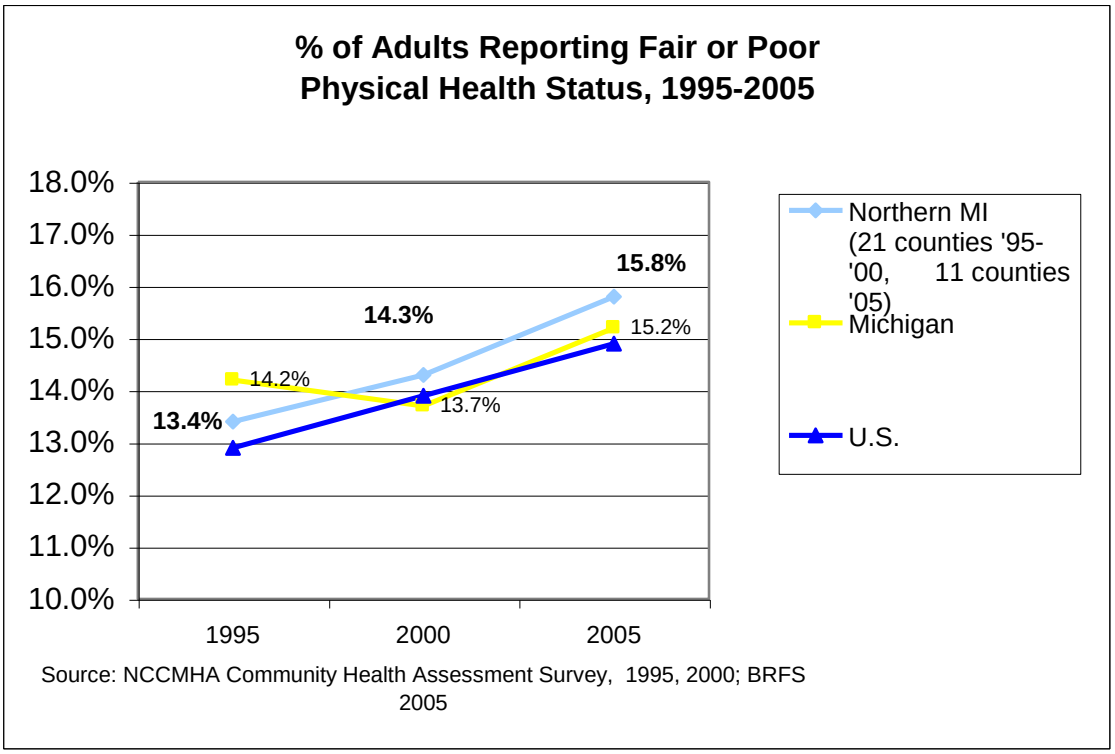


General Health Status: Adults Reporting Fair or Poor Physical Health

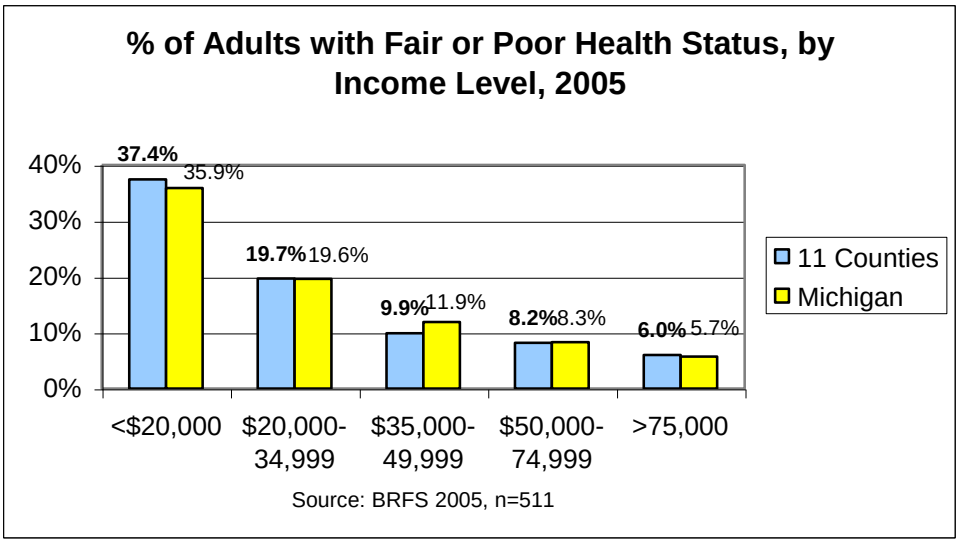
Self-reported health status is frequently used as a broad overall indicator of community health. The 11 counties are very similar to Michigan and to the U.S. in the percentage of people who perceive their health as fair or poor, which was about 16% in 2005.



The percentage of people at all income levels reporting fair or poor health status seems to be increasing over time:

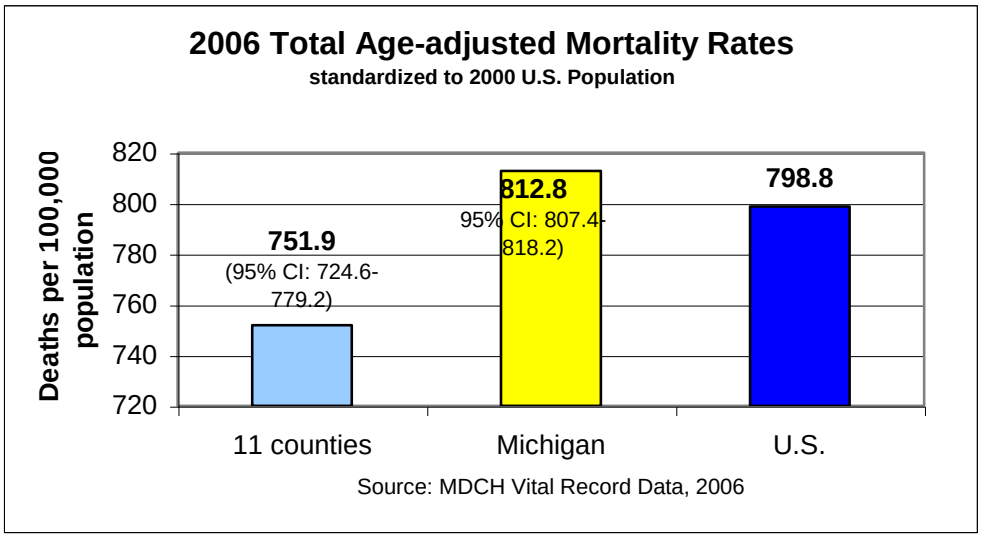


While the overall percentage of people reporting fair or poor health status is increasing, but still relatively moderate, an analysis by income level reveals that both for Michigan and the 11 counties, fair or poor health status is highly correlated with income levels. More than one third of people with annual incomes below $20,000 reported fair or poor health, and almost one in five with incomes $20,000 to $35,000 reported fair or poor health:



General Health Status: Mortality Rates

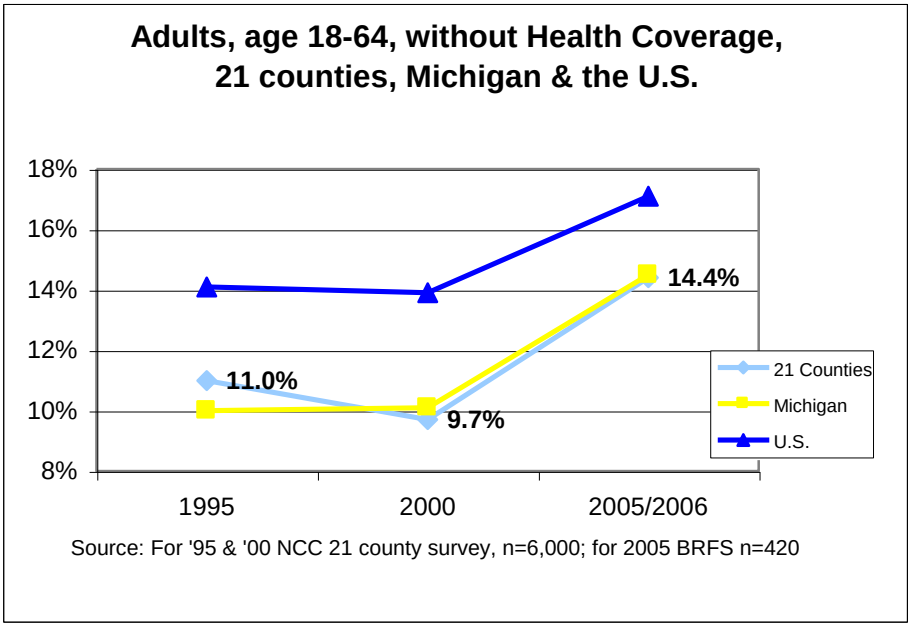
Standardized mortality rates are a measure of overall risk of dying in a given geographical area, and is a general indicator of overall health. Because mortality increases sharply with age, communities with a higher concentration of older people have higher crude mortality rates. Using standardized rates allows for comparisons with other geographical areas adjusting for differences in the age structure of the population. The rates below are standardized to the 2000 U.S. population. In other words, standardized rates reflect what the local rates would be if the 11 counties and Michigan had the same age composition as the total U.S. population in 2000. The graph below shows that the mortality rate for all causes and all ages in the 11 county area is lower compared to the State and the U.S. Analysis of 95% confidence intervals for each rate reveals that the rate for the 11 counties is statistically significantly lower than the rate for the State and the U.S.



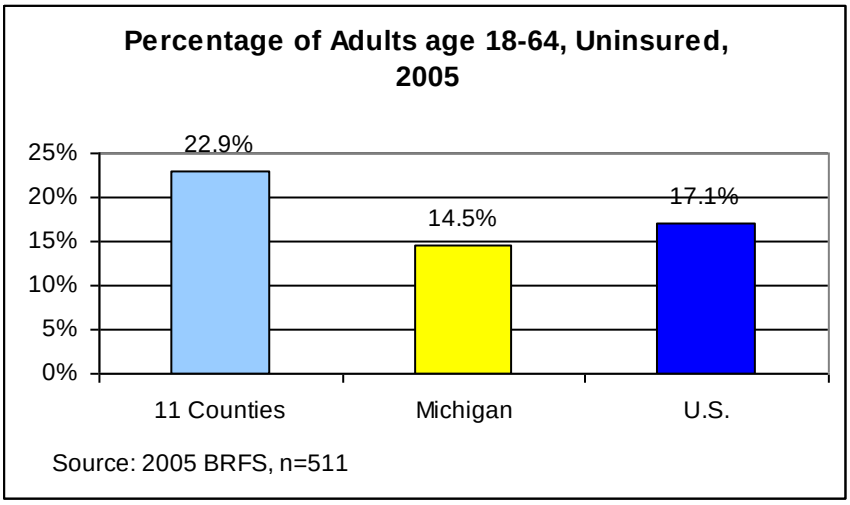
The lower total standardized mortality rate in the 11 counties could be due to many different factors including a healthier population, a higher standard of living, better access to health care and effective treatments, or a safer environment, among many others.

Access to Care: Insurance Coverage

The percentage of adults without health insurance coverage improved slightly between 1995 and 2000, then worsened between 2000 and 2005 on the local, statewide and national level. The percentage of adults age 18-64 years (age 65+ would be covered by Medicare) with no health coverage was estimated to be 14.4% in the 21 counties (2006 BRFS). The graph below shows that rates of uninsured adults in Northern Michigan are similar to rates for the State, but slightly lower than for the U.S.

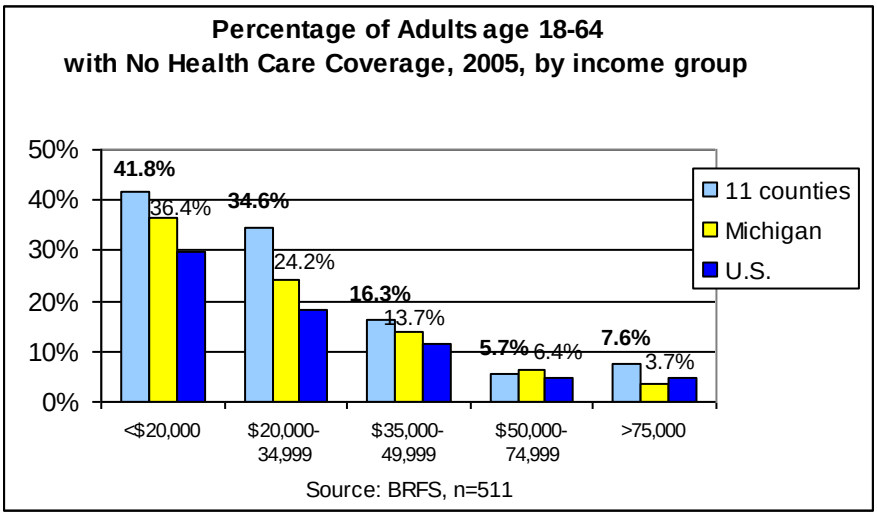


Data from the previous year (2005 BRFS) analyzed for the smaller subset of 11 counties estimate the percentage of adults age 18-64 who are uninsured to be much higher (23%, with the 95% confidence interval being about 18% to 29%):

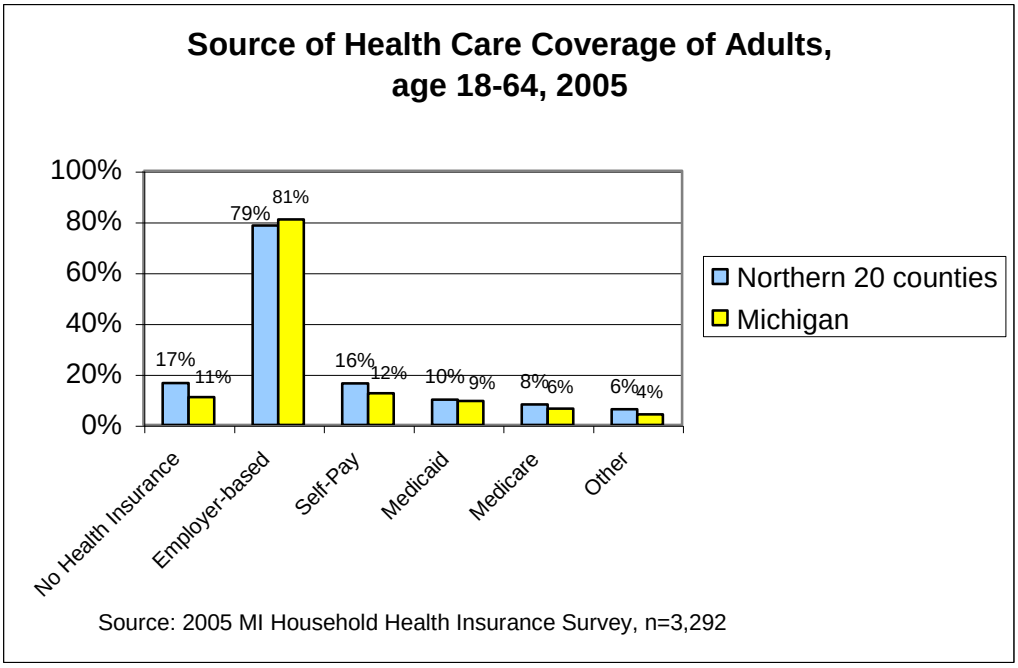


As for many key measures of community health, the percentage of uninsured adults age 18-64 varies greatly by income level. People with the lowest income levels (and therefore the least

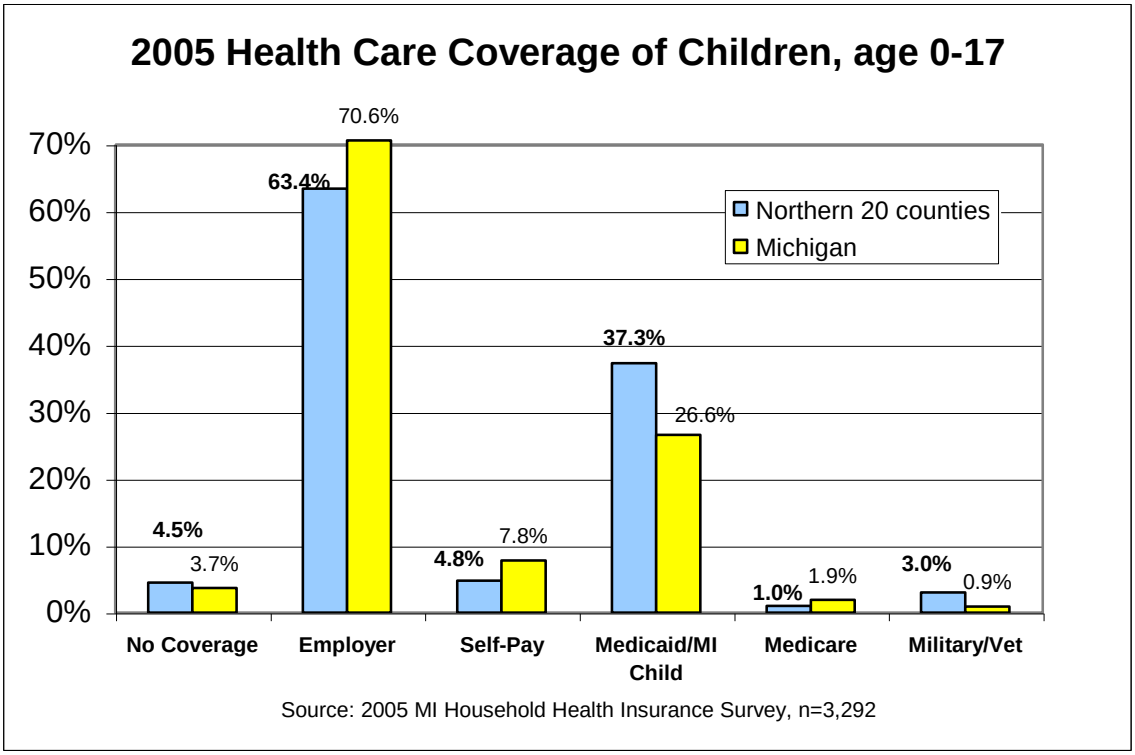
able to cover medical expenses out of pocket), are the most likely to lack health insurance coverage. Nearly 42% of people with annual incomes less than $20,000 have health coverage, while only 5%-8% of people with annual incomes over $50,000 lack coverage.



Among adult with health coverage, employer plans are the leading source of coverage, followed by self-paid plans:

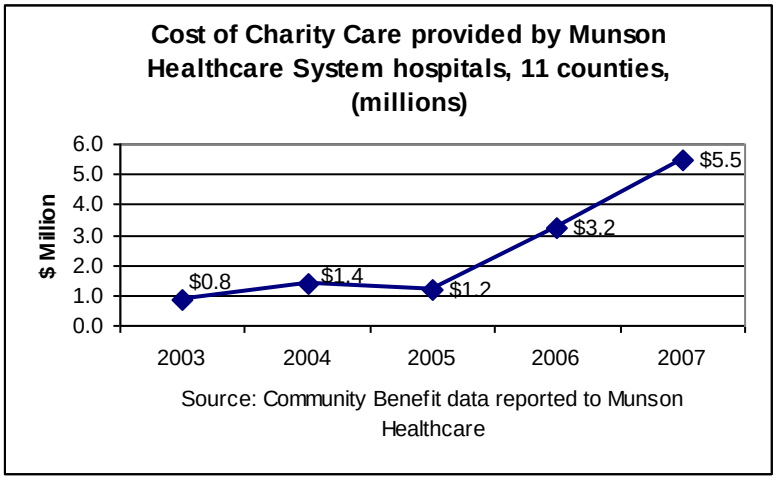


Health coverage of children is much higher, with only 4.5% of children estimated to have no health care coverage. This has largely been achieved by extending Medicaid eligibility. While Medicaid covers only approximately 10% of adults, over 37% of children are covered by Medicaid. The chart below shows the source of health care coverage among children age 0-17 years:



Access to Care: Charity Care

With the percentage of adults without health insurance coverage increasing sharply since 2000, one would anticipate a corresponding increase in the amount of charity care and other "safety net" services such as those provided by Health Departments and community organizations. Indeed safety net service providers in the 11 county area have reported observations of increased demand and greater need for services. As of May 2008, most report being at capacity with waiting lists (see the section on "Emerging Community Health Trends Reported by Key Informants" for more detail). An analysis of the amount of charity care provided by Munson Healthcare System hospitals shows a sharp increase in the cost of charity care provided:



Several factors are probable explanations for this sharp increase:

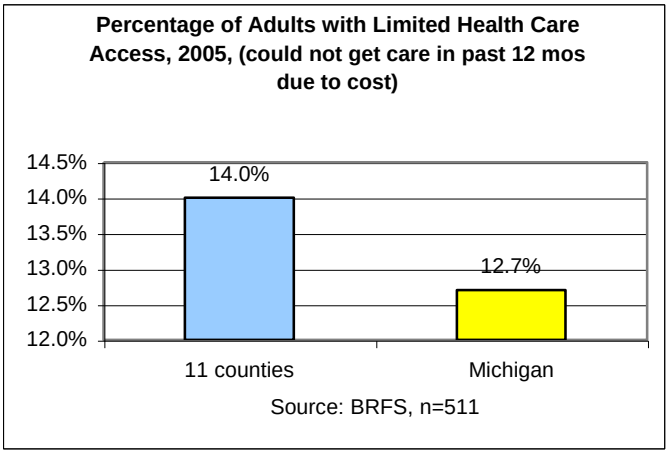
- Increased numbers of people in need (increased percentage of people in poverty and without health insurance)

- Change in the Charity Care policy at Munson Medical Center extending the income limit from 100% to 200% of the federal poverty level for people without health coverage to receive free hospital services

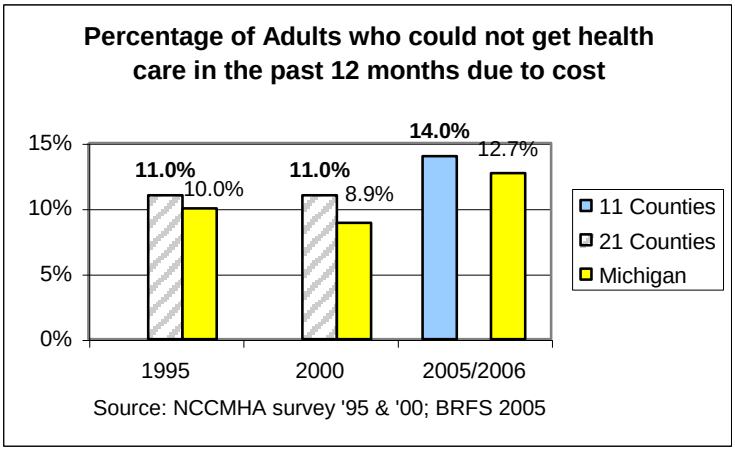
- Addition of Otsego Memorial Hospital to the Munson Healthcare System Affiliation in 2007

Access to Care: Medical Care

Despite the existence of safety net services and assistance programs, many people still cannot access needed medical care. In addition to lack of coverage, high deductibles, co-pays and exclusions imposed by insurance plans are probable cost-related contributors which limit people's access to care. In 2005, an estimated 14% of adults reported not being able to get medical care at some point during the year due to cost, which is similar to the percentage statewide:

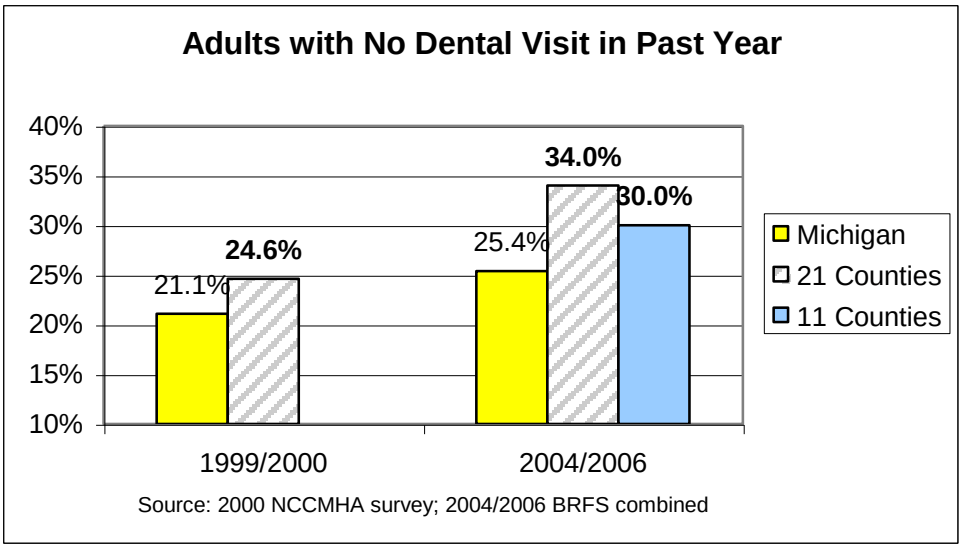


Paralleling the poverty rate, and percentage of adults without health care coverage, the percentage of adults with limited health care access appears to be increasing. The chart below compares the trend over time for Northern Michigan to the State. (Data for the 11 counties is only available for 2005; for 1995 and 2000 the 21 county data from the NCC surveys are presented as an approximation for the 11 counties. National data is not available)

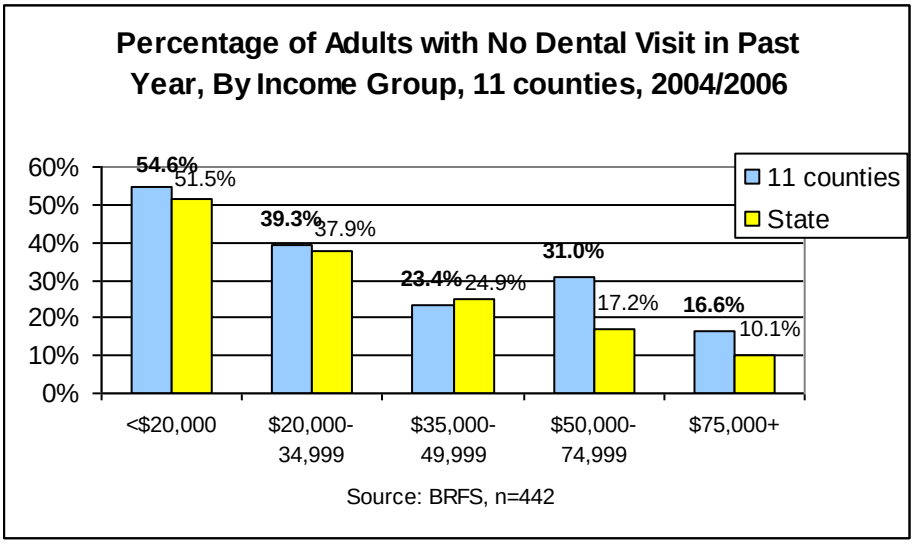


Access to Care: Dental Care

Good oral health contributes to good physical health. Regular dental visits are associated with earlier detection and prevention of gum disease which has been shown to increase the risk of heart disease and premature birth. Current recommendations are for adults to have a dental visit at least every 6 months. The most recent data available for Northern Michigan suggest that about one third (30%-34%) of adults did not have any dental care in the past year. Analysis of rates over time suggests that the percentage of adults going with out dental care is increasing over time both locally and across the State. (Data were not available for 2005; due to small sample size, data for 2004 and 2006 were combined to produce an estimate for the 11 counties. For trend analysis, data from the 2000 NCC 21 county survey was used. Data for the State for both time periods is from the BRFS (1999 and 2006).

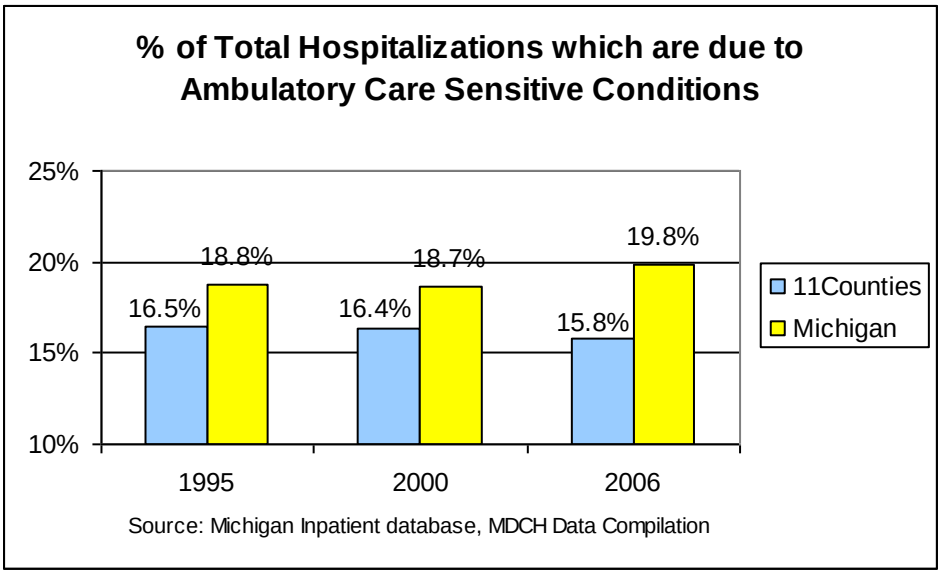


While overall about one third of adults reported no dental care in the past year, an analysis by income group shows that among people earning less than $20,000 a year, 55% - more than half- went without dental care:

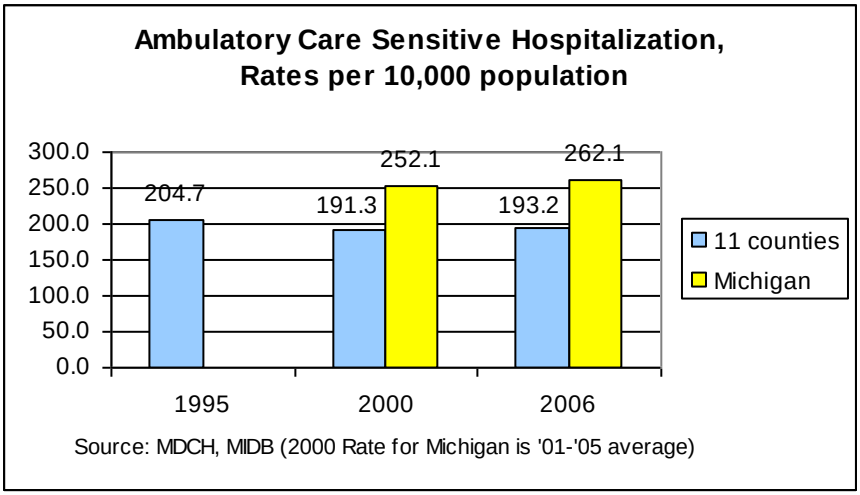


Access to Care: Ambulatory Care Sensitive Hospitalizations

Ambulatory care sensitive hospitalizations are hospitalizations that theoretically could have been prevented. It includes conditions where timely and appropriate ambulatory care might have prevented the onset of an illness, controlled or prevented an acute episode or managed a chronic disease or condition well enough to have prevented the need for hospital care. Examples include hospitalizations related to dehydration, nutritional deficiencies, asthma, vaccine preventable diseases, and diabetes complications. Overall, about 16% of all hospitalizations in the 11 county region would be categorized as "ambulatory care sensitive" compared to about 19% for the State as a whole. The percentage for both the region and the State has been fairly stable since 1995:

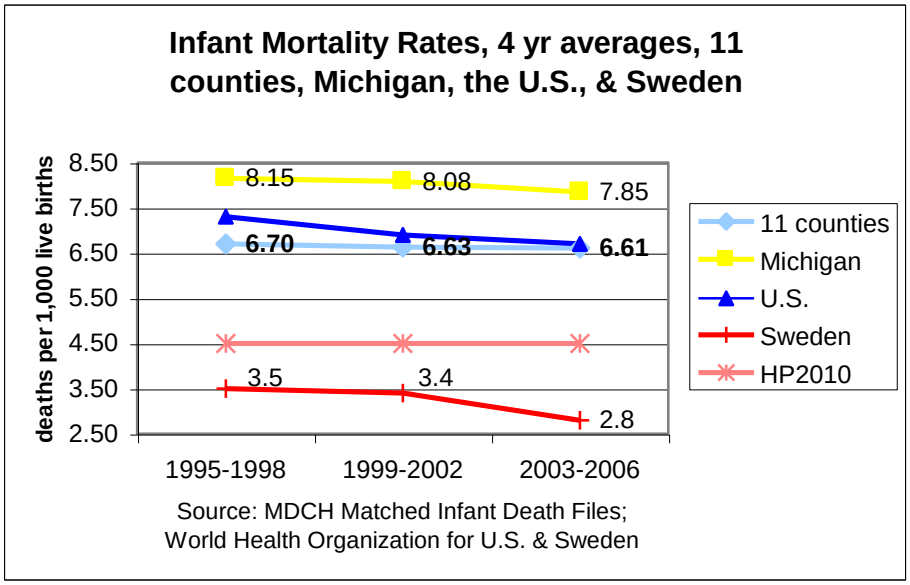


This means that with better ambulatory care and engagement of patients in their health, theoretically one out of every six hospitalizations in our region could be prevented. The chart below compares the rate of ACSH per 10,000 population for the 11 county region to that for the State. The population of the 11 counties has a lower rate of ACSH than the population of the State as a whole, suggesting better overall management of health conditions, and perhaps a healthier population than the Statewide average.



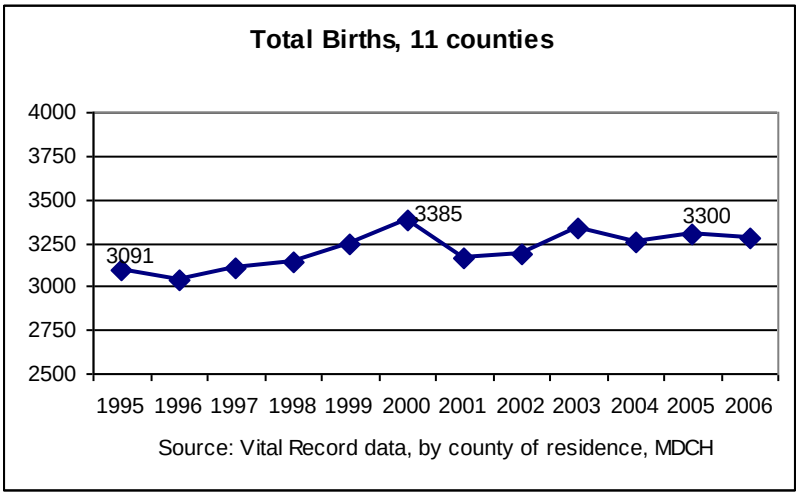
Maternal and Child Health Indicators: Infant Mortality

Infant Mortality is sensitive indicator of a community's overall health. Infant mortality occurs most frequently in communities with the highest levels of social and economic stress, and lowest levels of resources and supports. The three year average infant mortality rate in the 11 counties for 2003-2006 was 6.61 infant deaths per 1,000 live births, which is slightly lower than the rate for the period of 1995-1998 (MDCH resident Birth Files). It has remained lower than the rate for the State as a whole. The chart below compares the rate over time for the 11 counties, the State, and the U.S.. In addition, the Healthy People 2010 target (a set of national health goals set by the U.S. Centers for Disease Control and Prevention), as well as the rate achieved by Sweden, are presented to highlight what is achievable in modern industrialized countries.

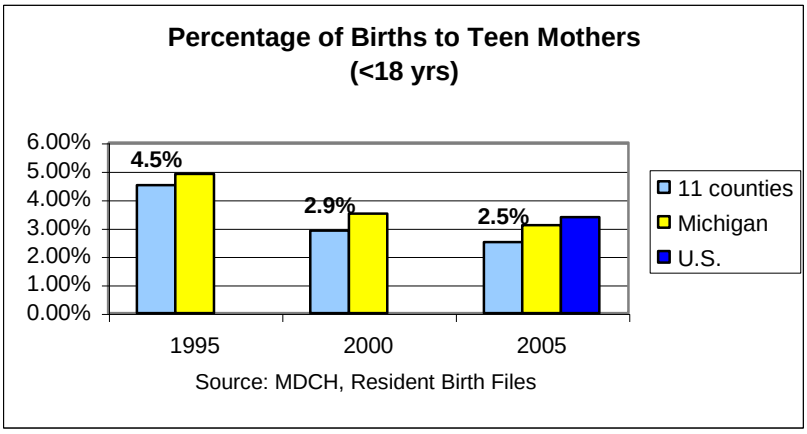


Maternal and Child Health Indicators: Birth Characteristics and Outcomes

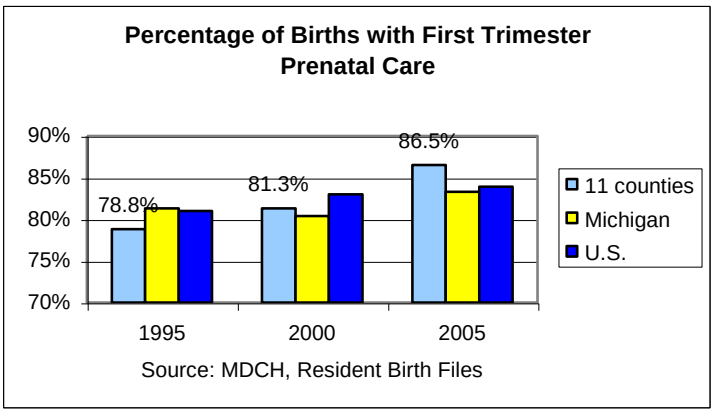
The number of births in the 11 county area is stable, at about 3,300 per year.

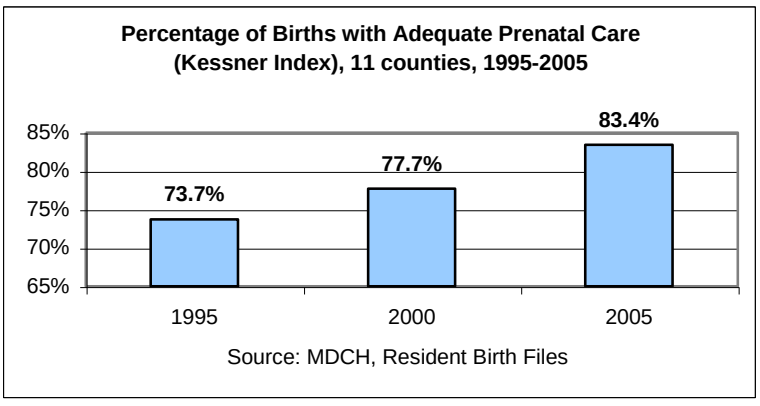


While the overall number of births has not changed much, there have been some notable changes in a few key birth characteristics and outcomes. For example, the percentage of births to teen mothers (younger than 18 years) has continued to decline in the region as a whole, as well as across the State and the U.S. In 2005, only 2.5% of all births, or about 83 births were to teen mothers, which is lower than the rate for the State and the U.S. While the rate remains low in the region as a whole, in some counties the rate is among the highest in the State.

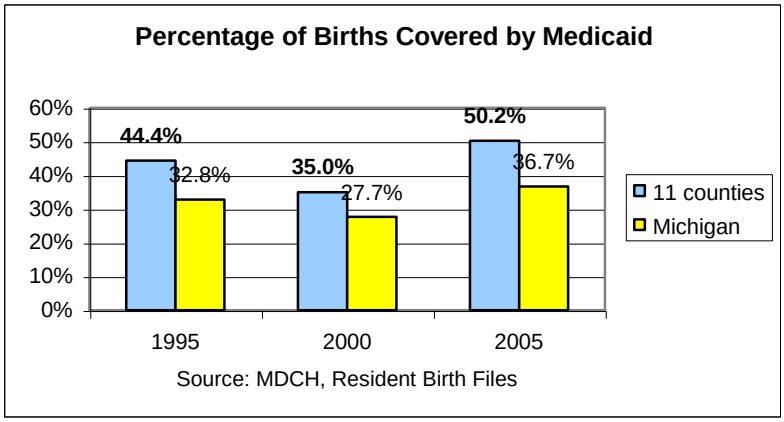


Considerable progress has been made in providing early (first trimester) and adequate prenatal care to pregnant women. Both the percentage of births with early prenatal care and adequate prenatal care have increased steadily since 1995 to surpass the State rate of first trimester care:

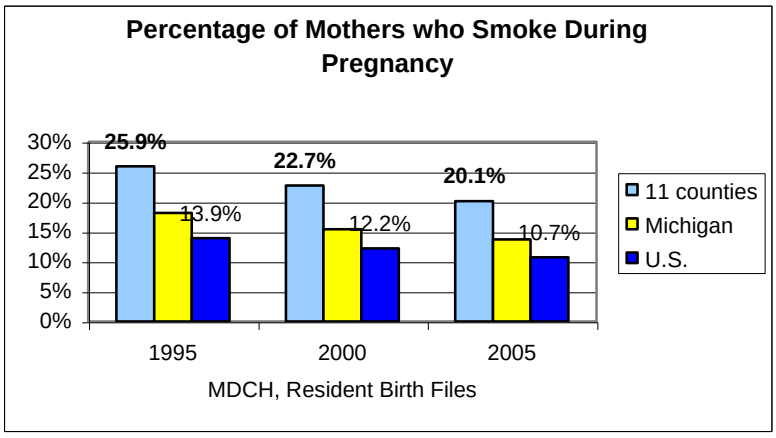




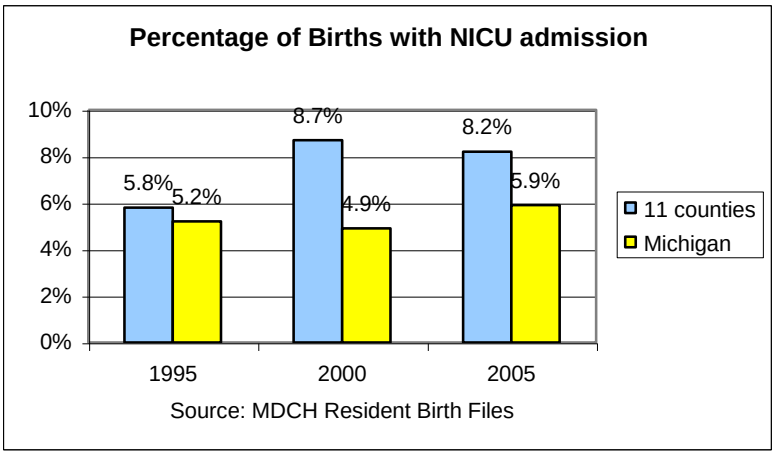
The percentage of births in the area that are covered by Medicaid has risen to account for more than half of all births. In 2005, 50.2% of births in the 11 county region were covered by Medicaid, compared to 36.7% statewide.



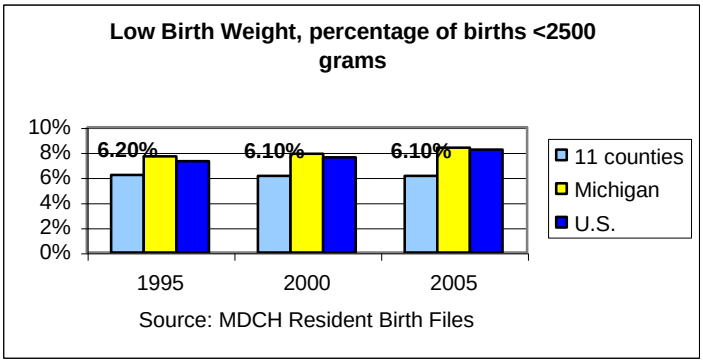
Smoking during pregnancy is a preventable risk factor associated with low birth weight, prematurity and Sudden Infant Death Syndrome, among other poor outcomes. While progress has been made since 1995 in reducing the percentage of births with prenatal smoking exposure, smoking during pregnancy within the 11 county region remains significantly higher than for the State and the U.S. In 2005, 20% of births were to mothers who smoked during pregnancy, which is almost twice the rate than for all women statewide. The chart below shows the progress that has been made over time as well as the persisting gap between local, State and national rates:



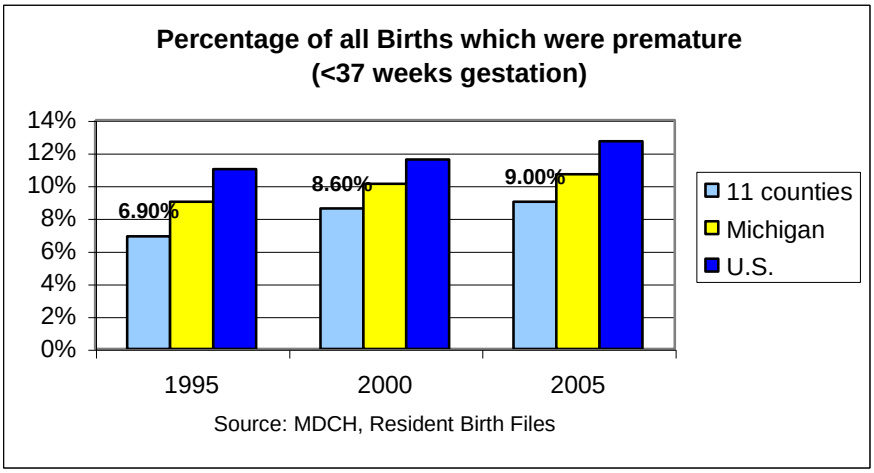
The percentage of births with admission to neonatal intensive care has risen slightly since 1995 to about 8% of all births, which is higher than the percentage for the State.



The percentage of infants born with a low birth weight has remained very stable at about 6%, which is lower than the rate for the State and the U.S., which are both about 8%.

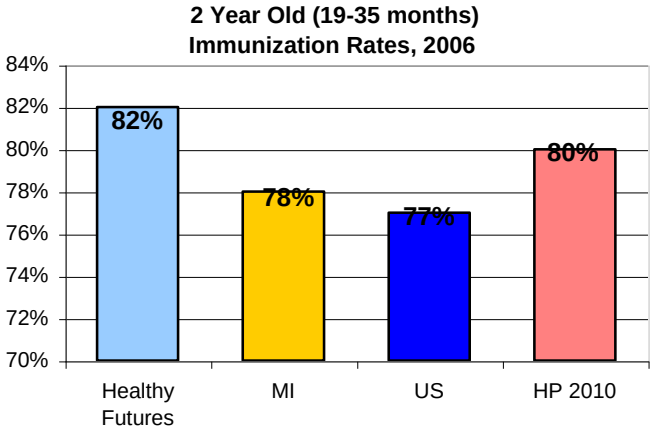


Prematurity as well as low birth weight is a leading risk factor for infant death and other negative outcomes. The percentage of births which are premature in the 11 county region was 9% in 2005, which is lower than the percentage for the State and the U.S.. Analysis of trend over time reveals that the percentage has been slowly increasing, paralleling the rise across the State and the U.S. Rising prematurity despite improvements in major risk factors such as maternal smoking, late or inadequate prenatal care, and is the subject of much national discussion and study at the present. The chart below shows the rising prematurity rates across all geographical groupings:



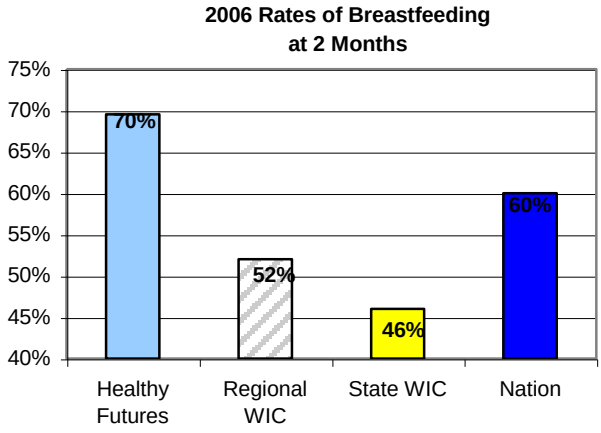
Maternal and Child Health Indicators: Childhood Immunization & Breastfeeding

The Immunization rate for children age 19 to 35 months in 2006 was 81.9% (Kid's Count Data) for the 11 county region as a whole. The State rate was 78.4% and the U.S. national rate was 77%. Among the 11 counties, the rate ranged from a low of 75.0% to a high of 85.4%. The Healthy Futures program which operates within 7 of the 11 counties has achieved high immunizations rates among program participants, as shown on the graph below:



Source: Healthy Futures Program

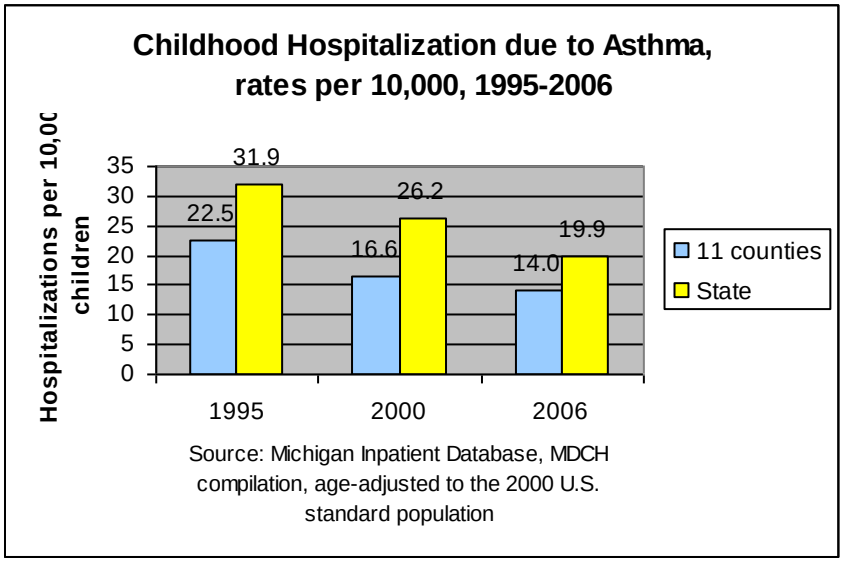
Promotion of breastfeeding has been incorporated as a goal of many community health programs. There is a solid research base establishing the long term health benefits to both the mother and infant, which include increased immunity, healthier body weight and lower rates of leukemia for infants, and lower rates of breast cancer for mothers. Breastfeeding education and support have been a component of many regional programs including the Healthy Futures program, Health Department services, hospital maternity department and community educational services. Data available through the Healthy Futures and WIC programs show that within the region, rates of breastfeeding at 2 months (52%-70%) are higher than for the State (46%):



Source: Healthy Futures Program

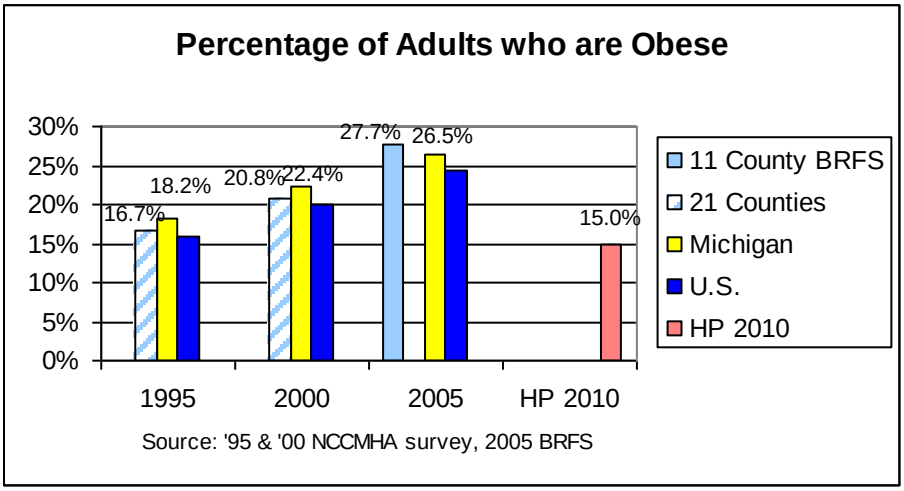
Maternal and Child Health Indicators: Childhood Asthma Hospitalization Rates

Childhood asthma has increased in recent decades across the State and the U.S. The most recent childhood asthma estimates available suggest that almost 6,400 children under the age of 18 years in the 11 county area currently have asthma. (2002 statewide BRFS survey). The rate of childhood hospitalization due to asthma in a community is reflective of several factors related to general child health: access to care, effectiveness of self-management and family education, severity of illness, and air quality issues. As these factors improve, hospitalizations should decrease. Within the 11 counties, in 2006, the rate of asthma hospitalization for children (14.0 per 10,000 children, 95% CI 11.1–17.0) was significantly lower than the rate for all children in the State (19.9 per 10,000, 95% CI 19.4-20.5). In addition, both for the 11 counties and the State, there has been a statistically significant decrease in the hospitalization rate since 1995:



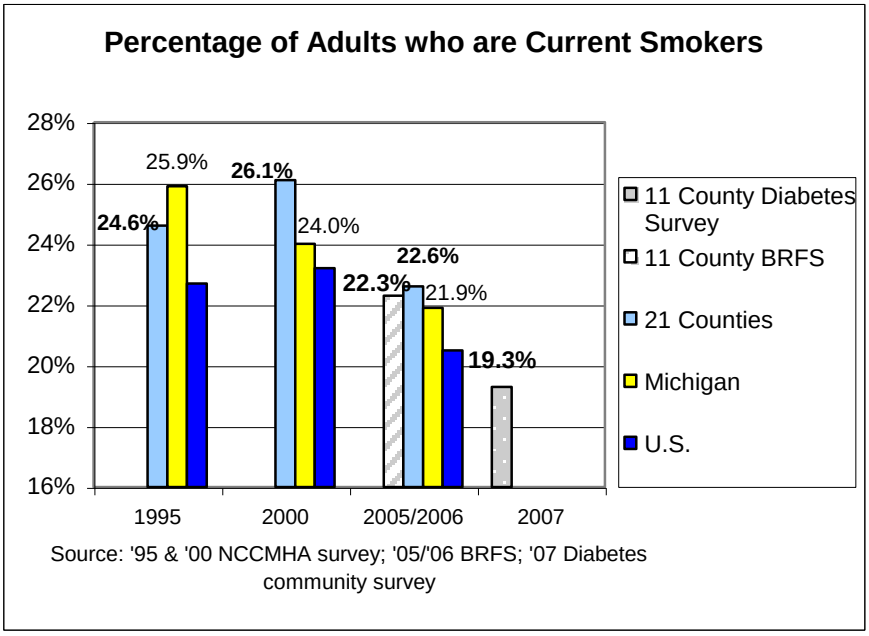
Behavioral Risk Factors: Overweight and Obesity

Being overweight or obese is associated with many illnesses and diseases and is one of the leading contributors to premature death. Overweight is defined as a Body Mass Index (weight in kilograms divided by height in meters squared) of 25.0 to 29.9, and obese is defined as 30.0 or higher. In 2005, 36.1% of adults in the 11 counties were estimated to be overweight, and another 27.8% obese, for a grand total of 63.8% of adults having an unhealthy weight (BRFS 2005, n=506). The chart below shows two different data sources for the local estimates of adult obesity over time: BRFS data for the 11 counties (n=506) and data from the 1995 and 2000 NCCMHA 21 county survey. All sources for local State and national estimates show a steady climb. Rates for the region are similar to the State, but higher than for the U.S. The Healthy People 2010 goal for obesity is no more than 15% of adults.



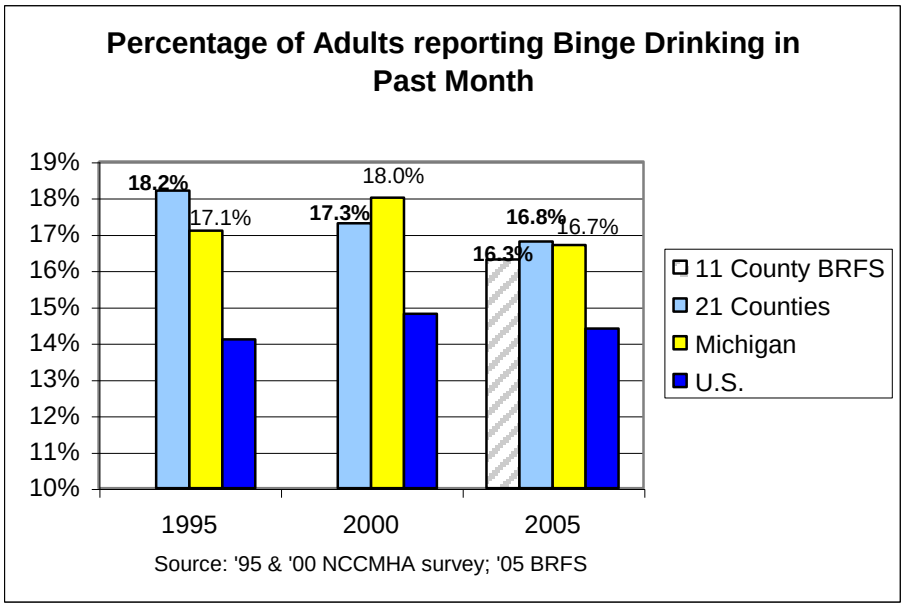
Behavioral Risk Factors: Smoking

Smoking is another leading cause of preventable death and illness. While some progress has been made at reducing smoking prevalence within the region since 1995, still about one in five adults in both the 11 counties and 21 counties currently smoke.



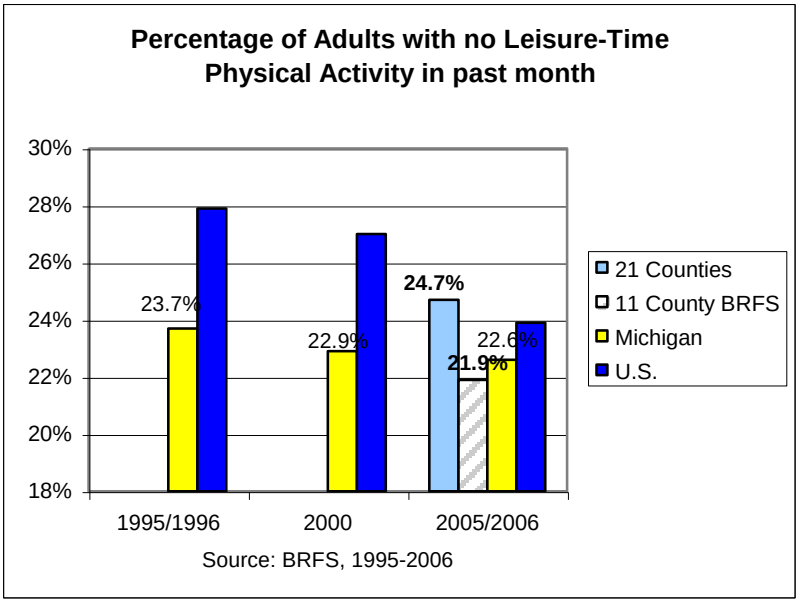
Behavioral Risk Factors: Binge Drinking

Alcohol consumption is tracked as a community health indicator because of its link to serious health conditions such as liver disease, hypertension and some types of cancer, as well as its role in accidents, and injuries cause by violence. Rates of binge drinking, defined as having four or more drinks on a single occasion for women, and five or more for men, for both the 11 counties and the 21 counties have remained very similar to overall rates for the State, 17%-18% (21 county NCC Survey 1995 and 2000, BRFS 2005). However, both the local and the State rates are somewhat higher than the U.S. which was 14.4% in 2005 (BRFSS 2005).



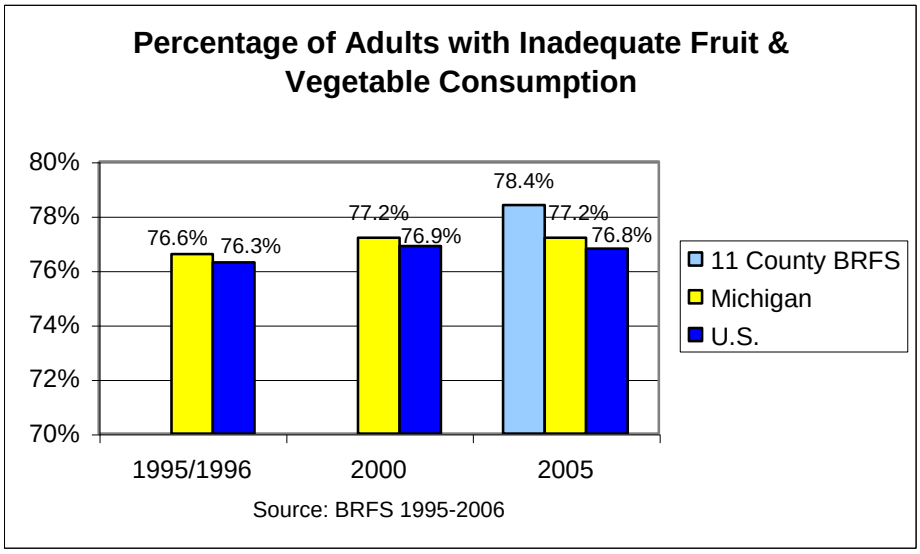
Behavioral Risk Factors: Physical Activity

Regular physical activity is important for controlling weight and keeping muscles and bones healthy, and is also associated with better mental health, among many other benefits. A sedentary lifestyle is a risk factor for chronic illnesses and conditions. The percentage of adults reporting no leisure time physical activity in the past month was estimated to be 22% in 2005 for the 11 counties, and 25% for 2006 for the larger 21 county area, which is similar to the State and the U.S. Local data for previous years was not available to explore trend over time.



Behavioral Risk Factors: Fruit and Vegetable Consumption

Consumption of at least five servings of fruits and vegetables is recommended to reduce the risk of cancer and other chronic diseases. The proportion of adults who meet this recommendation is low; a majority of adults locally, at the state level and nationally have inadequate fruit and vegetable consumption. In 2005, 78.4% of adults in the 11 counties reported inadequate fruit and vegetable consumption, which was similar to State and national estimates.



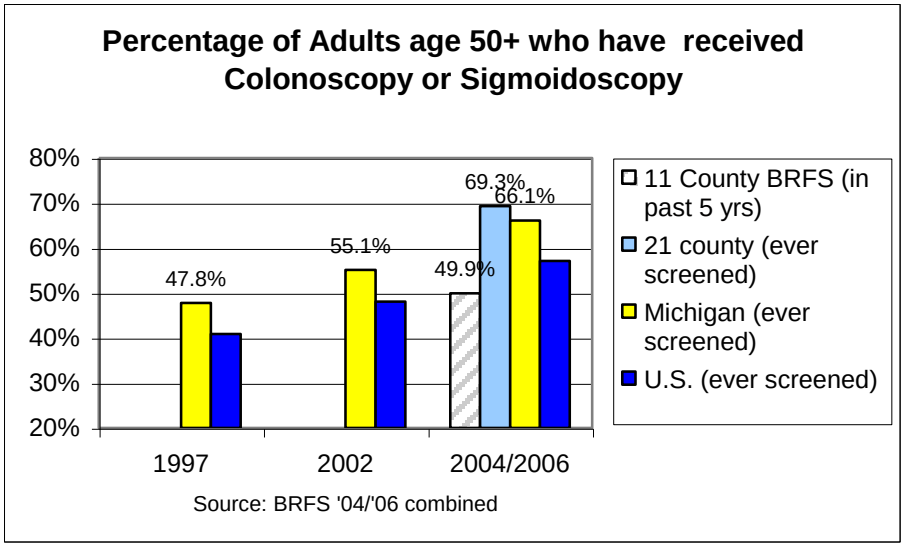
Chronic Disease and Conditions: Heart Disease

Coronary Heart Disease (CHD) is a leading cause of death in the U.S., Michigan and in the region. While data for the 11 county Munson Healthcare area was not available, data for the 21 counties in Northern Michigan for 2006 suggest a somewhat elevated level of 8.0% in 2006 compared to the State estimate of 5.1%, and U.S. estimate of 4.5% of adults who report ever being told they have angina or coronary heart disease (2006 BRFS) Data on CHD prevalence is not available before 2005, so trend analysis is not possible. A review of hospitalization data provides some suggestion that the incidence of heart disease may be stable. Between 2002 and 2007, the percentage of total hospitalizations that were due to Heart Failure (ICD 9 codes 428.0-428.4, 428.9 and 398.1) remained very steady at about 8%.

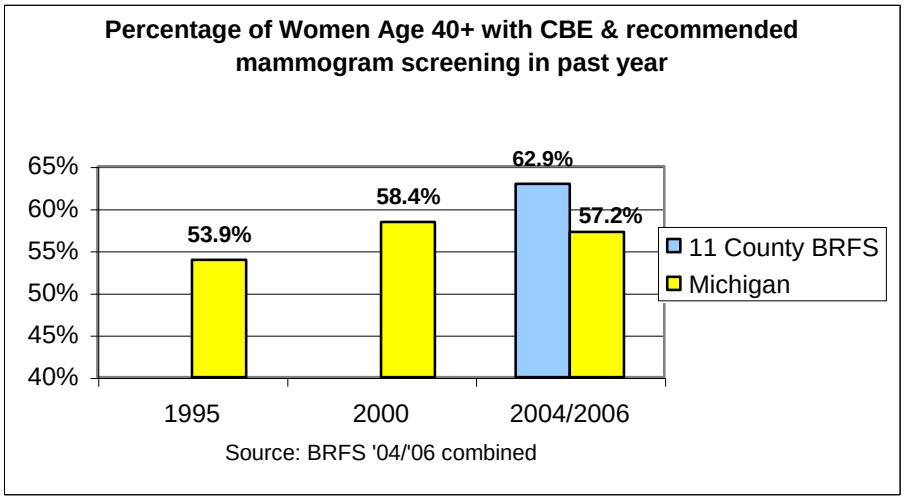
Chronic Disease and Conditions: Cancer

Cancer is the second leading cause of death in the U.S.. Early detection and timely access to treatment of cancer are key strategies for reducing mortality.

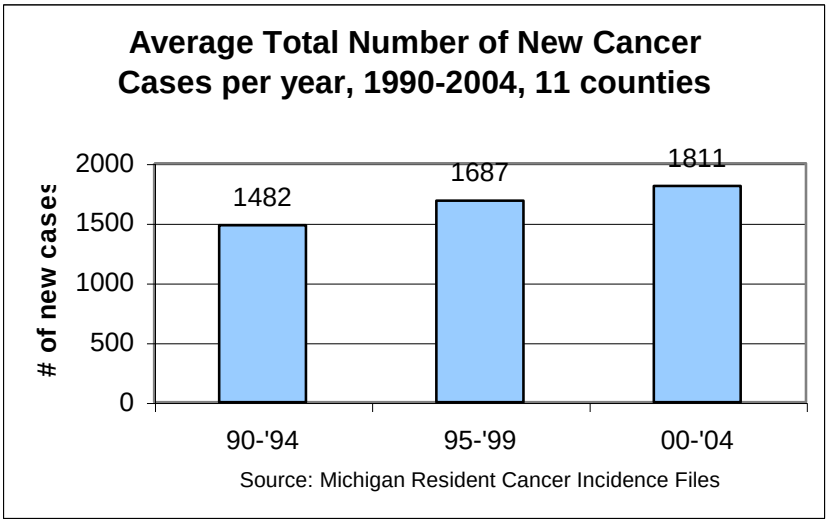
Colon Cancer Screening: Current recommendations are for adults over the age of 50 years at average risk to have colonoscopy every ten years or sigmoidoscopy screening every 5 years. (Adults at a higher risk due to family or personal medical history should be screened more frequently). For the 21 Northern Michigan counties, in 2006 69.3% of age 50 years and older reported having ever been screened (2006 BRFS NCC compilation, n=420). For the 11 counties, about 50% of adults reported having been screened within the past five years, (2004 and 2006 BRFS; data from two years were combined due to small sample size, n=262). While trend data is not available for the local estimates, colon cancer screening rates statewide and nationally appear to be increasing.



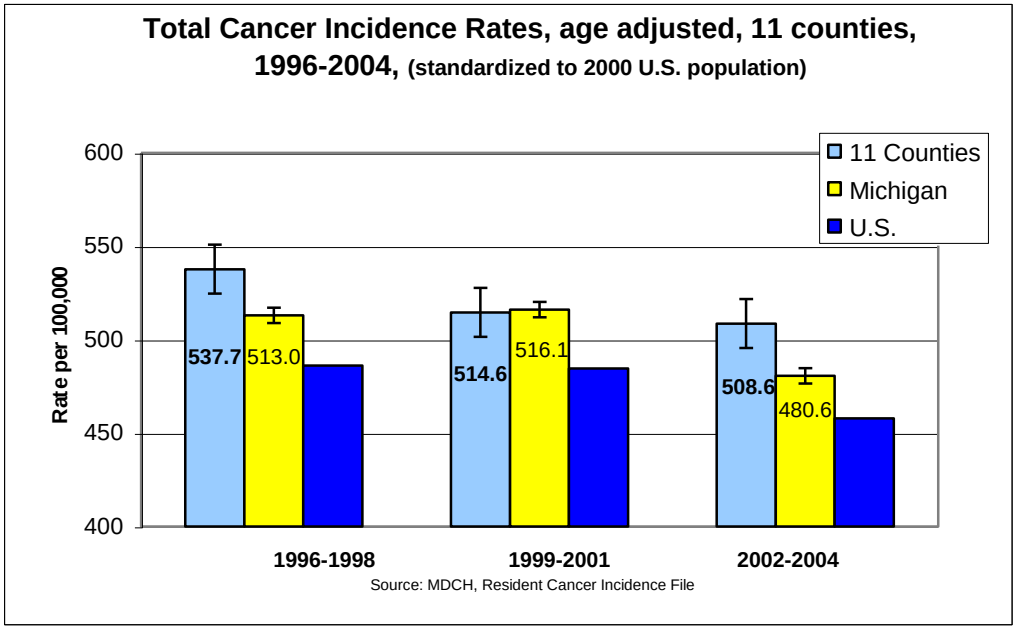
Breast Cancer Screening: Recommendations for Breast cancer screening have changed over time. At present, the State uses the guideline of all women age 40 years and older to have both a mammogram and clinical breast exam yearly as a standard indicator to track breast cancer screening. The estimate for the local 11 counties of about 63% of women receiving this standard of care (BRFS 2004 and 2006 combined) is higher than the percentage statewide of 57% (2006 BRFS). Local data on mammogram screening for earlier years (reported by the 1995 and 2000 NCC 21 county surveys) used a different indicator – mammogram within the past year among women age 50 years and older – are not comparable to the most recent data which starts at age 40 years.



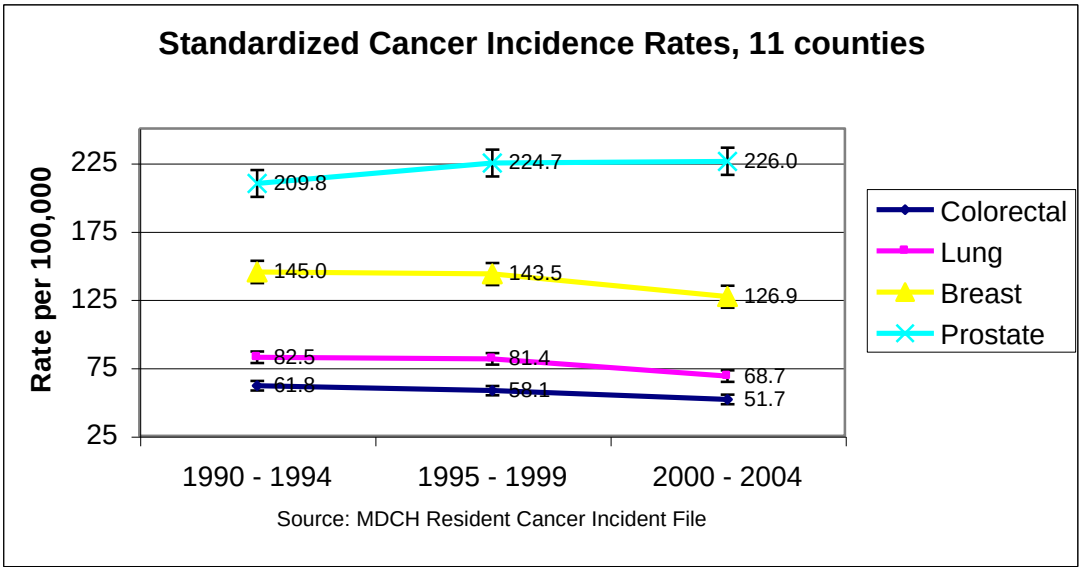
Cancer Incidence: While the incidence rate, a measure of risk of getting cancer, is decreasing (see below), the crude number of new cases diagnosed is increasing due to the aging population and a growing concentration of older residents in the 11 counties.



Cancer incidence rates can reflect both increased risk and occurrence of cancer, as well as increased screening resulting in finding more cases. Overall, total incidence of cancer has decreased slightly over time, but rates remain higher within the 11 counties compared to the State and U.S. The risk of being diagnosed with cancer rises sharply with age. The rates presented on the graph below are standardized to the 2000 U.S. population in order to adjust for differences between comparative groups in the age structure of their population. The I-bars on the chart show the upper and lower bounds of the 95% confidence intervals; non-overlapping confidence intervals represent statistically significant differences in rates.



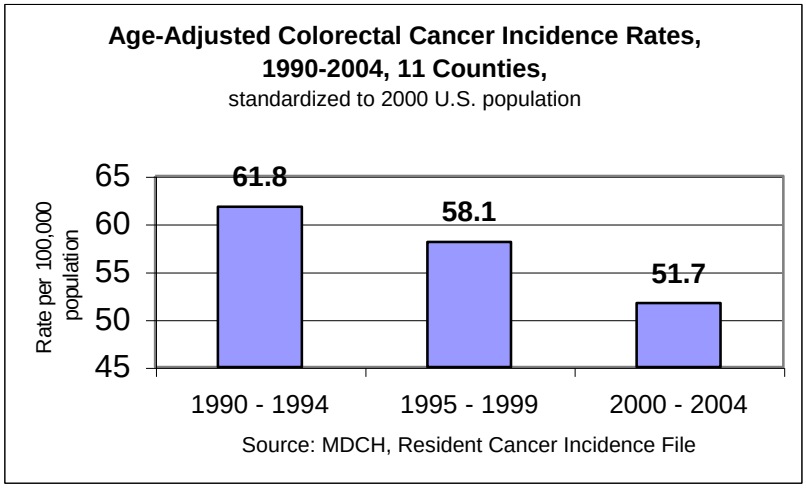
Cancer Incidence by major types of cancer: As the chart below shows, there has been a decrease in the incidence of colorectal, lung, and breast cancers, while the rate of prostate cancer has increased slightly. More detail is provided on each type of cancer below.



Colorectal Cancer Incidence: The incidence of colorectal cancer has decreased by about 16% since the 1990's, dropping from about 62 new cases per 100,000 residents per year, to about 52 new cases.

Colorectal Cancer Incidence Rates, 1990-2004,
11 County Munson Healthcare Region

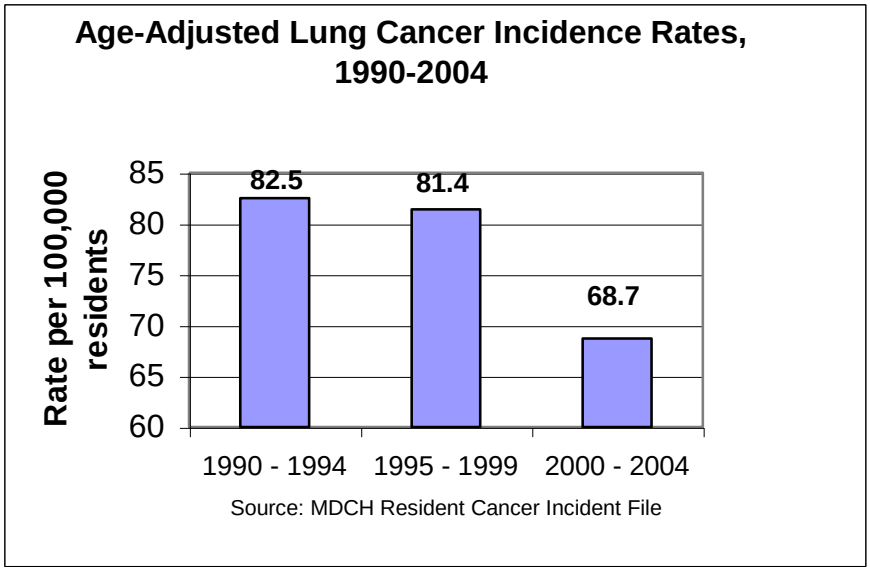
Years of Diagnosis	Rate per 100,000	95% CI	Number of Cases
1990 - 1994	61.8	3.8	849
1995 - 1999	58.1	3.5	920
2000 - 2004	51.7	3.1	942



Lung Cancer Incidence: Cancer of the lung and bronchus is highly correlated with smoking. Data since 1990 suggest that the incidence of lung cancer is beginning to decrease, which could be attributable to declining smoking rates in past years. Cancer of the lung and bronchus, one of the most "preventable" types of cancer, remains more common than colorectal cancer:

Cancer of the Lung and Brochus Incidence Rates, 1990-2004,
11 County Munson Healthcare Region

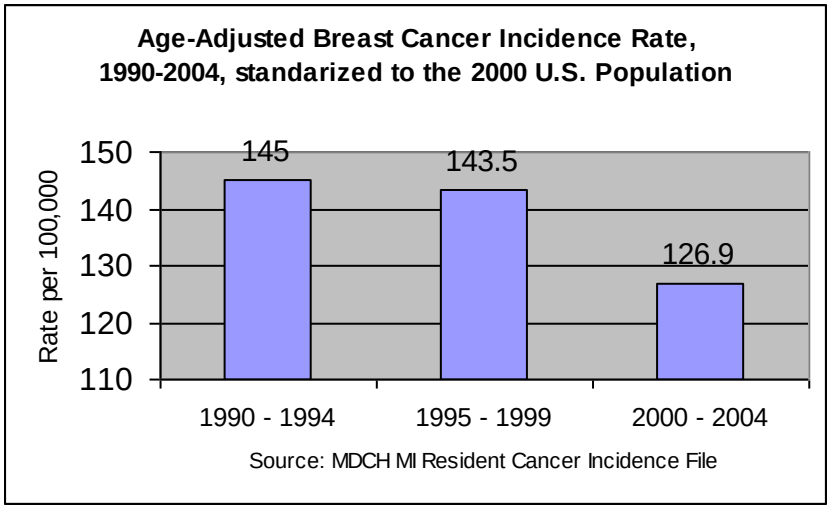
Years of Diagnosis	Rate per 100,000	95% CI	Number of New Cases
1990 - 1994	82.5	4.6	1172
1995 - 1999	81.4	4.3	1306
2000 - 2004	68.7	3.7	1266



Breast Cancer Incidence: While incidence rates of breast cancer have decreased since the 1990's, breast cancer remains among the most commonly diagnosed types of all cancers.

Breast Cancer Incidence Rates, (Females) 1990-2004,
11 County Munson Healthcare Region

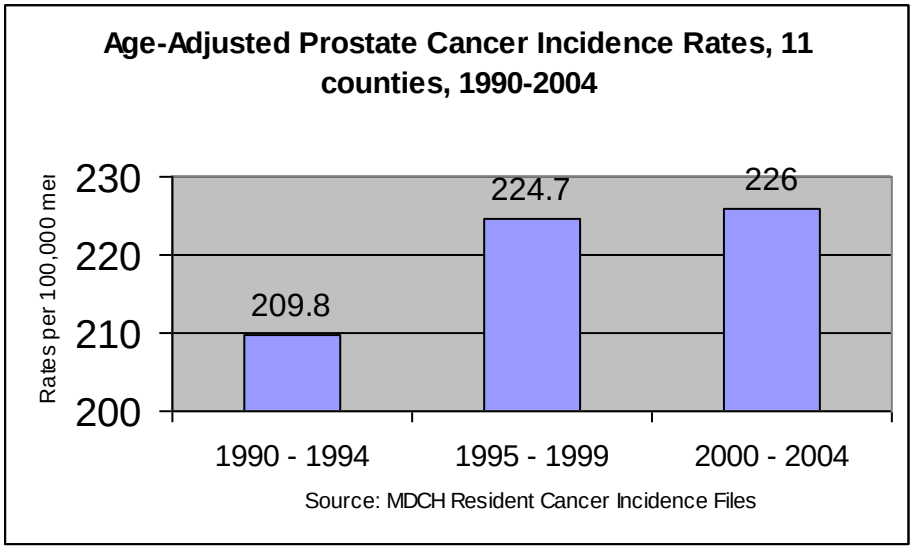
Years of Diagnosis	Rate per 100,000	95% CI	Number of New Cases
1990 - 1994	145.0	8.8	1036
1995 - 1999	143.5	8.3	1142
2000 - 2004	126.9	7.2	1168



Prostate Cancer Incidence: Since the 1990's there has been a slight increase in the prostate cancer incidence rate, but the increase is statistically weak. Increasing incidence could be attributable to a variety of factors including actual increased risk or increased detection, or both. Because the confidence intervals of the rates overlap, the rise in rates should be interpreted with caution. Like breast cancer, prostate cancer is one of the most common types of cancer; for the period of 2000-2004, for every case of new breast cancer diagnosed, there were approximately 1.8 new cases of prostate cancer.

Prostate Cancer Incidence Rates, (Males) 1990-2004,
11 County Munson Healthcare Region

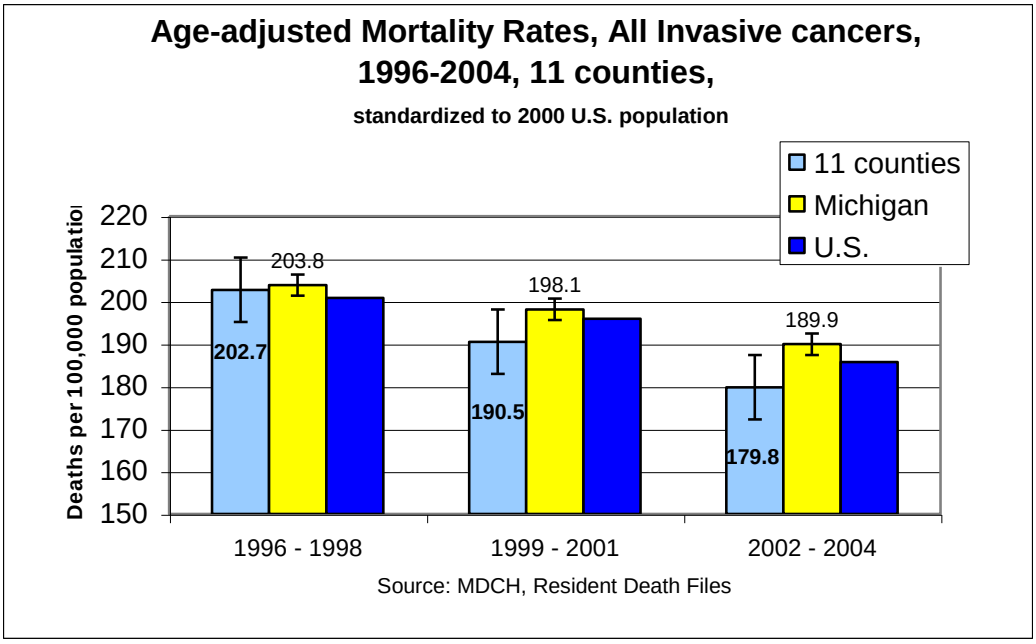
Years of Diagnosis	Rate per 100,000	95% CI	Number of New Cases
1990 - 1994	209.8	10.1	1330
1995 - 1999	224.7	10.1	1654
2000 - 2004	226.0	9.4	1946



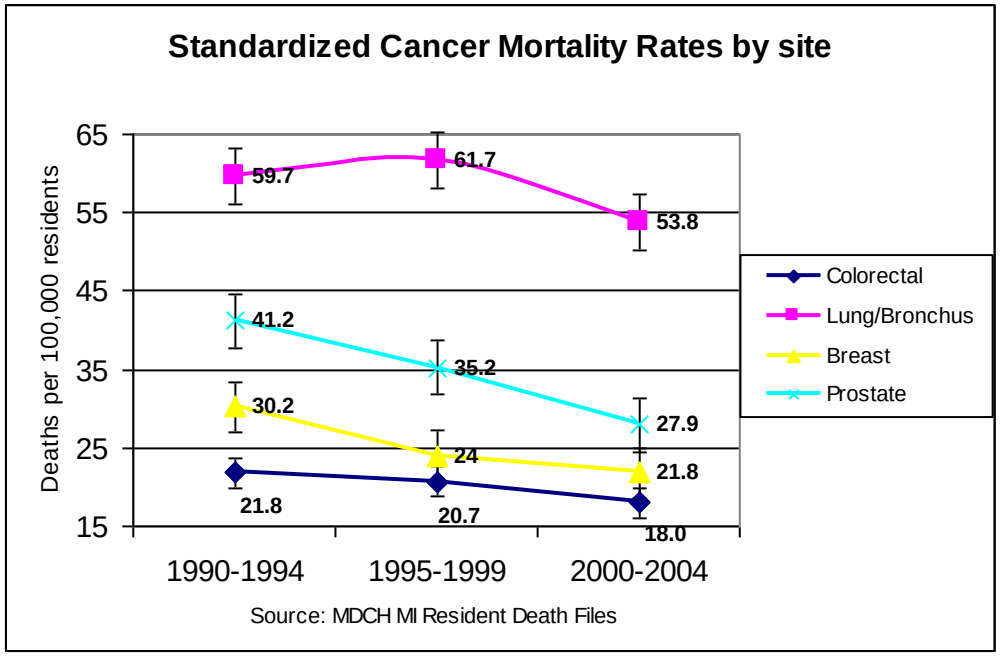
Cancer Mortality: Standardized cancer mortality rates quantify the risk of dying from cancer during a given time period. These rates reflect many factors - most notably, access to early detection and timely, effective treatment which can greatly prolong life or prevent death. The chart below shows that total cancer mortality (for all types combined) has declined within the 11 county region as well as for the State and the U.S. For the most recent period of 2002-2004, the rate for the 11 counties is slightly lower than the rate for the State. The 95% confidence intervals for the 11 counties (172.6 – 187.0) and for the State (187.4-192.4) do not overlap, signifying that this difference in rates, although small, is statistically significant.

Age Adjusted Mortality Rates for All Invasive Cancers, 1996-2004
11 County Munson Healthcare Region

Period	11 counties rate per 100,000	CI	Michigan Rate per 100,000	CI	U.S. Rate per 100,000
1996 - 1998	202.7	8.2	(1998) 203.8	2.6	200.8
1999 - 2001	190.5	7.6	(2001) 198.1	2.5	195.9
2002 - 2004	179.8	7.2	(2004) 189.9	2.5	185.7



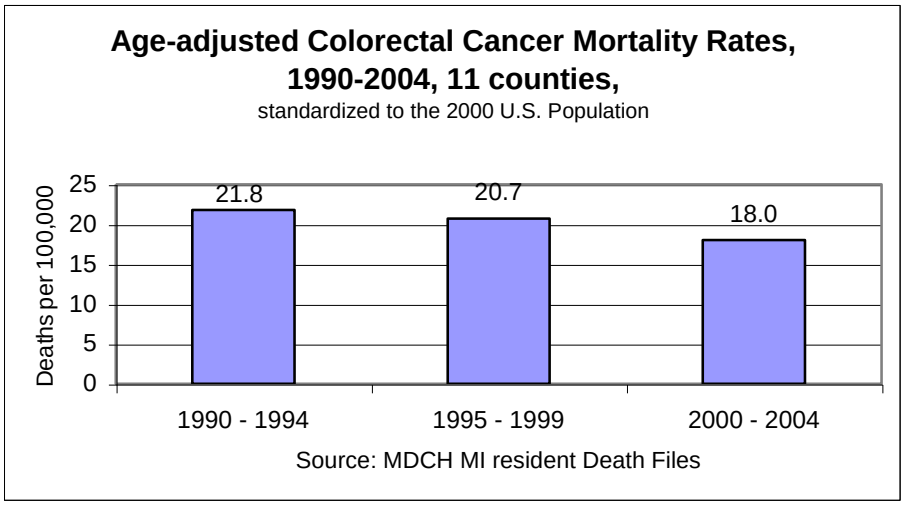
An analysis of mortality by cancer type shows a clear drop in both the breast and prostate cancer mortality rate, but only a slight decrease in the colorectal and lung cancer mortality rate. The chart below shows the declining rates by cancer type, as well as the amount of mortality that each type of cancer accounts for. Of the four types included in this analysis, prostate and breast cancer are the most commonly diagnosed, but the highest mortality is seen for lung cancer.



Colorectal cancer mortality: Since the 1990's, the colorectal cancer mortality rate as dropped from about 22 deaths per 100,000 (95% CI: 19.6 – 24.0) to 18 deaths per 100,000 (95% CI: 16.3 –19.7). Because the 95% confidence intervals overlap slightly, this decline should be interpreted as statistically weak.

Age Adjusted Colorectal Cancer Mortality Rates, 1996-2004
11 County Munson Healthcare Region

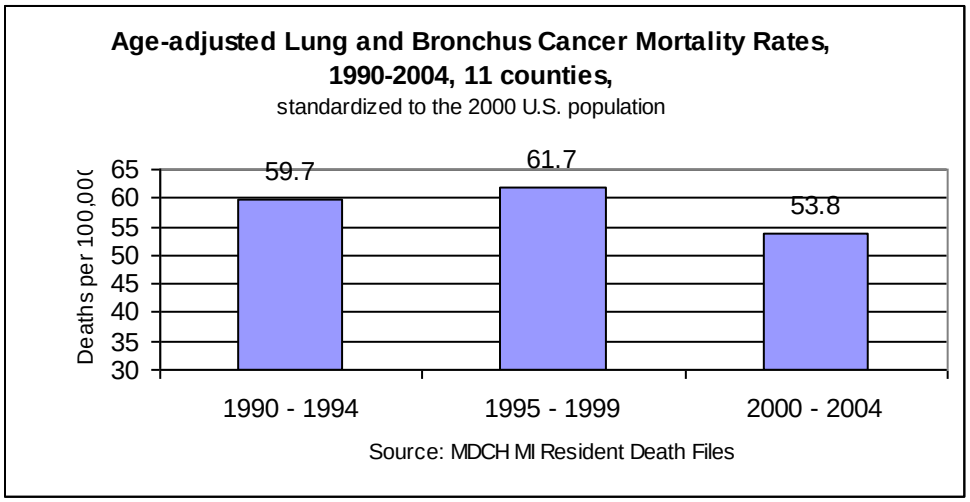
Years of Death	Rate per 100,000	95% CI	Number
1990 - 1994	21.8	2.2	294
1995 - 1999	20.7	1.9	327
2000 - 2004	18.0	1.7	328



Lung Cancer Mortality: Since the 1990's, the lung cancer mortality rate has dropped from about 60 deaths per 100,000 (95% CI: 55.8-63.6) to 54 deaths per 100,000 (95% CI: 50.6-57.0). Because the 95% confidence intervals overlap, this decline should be interpreted as statistically weak.

Age Adjusted Lung Cancer Mortality Rates, 1996-2004
11 County Munson Healthcare Region

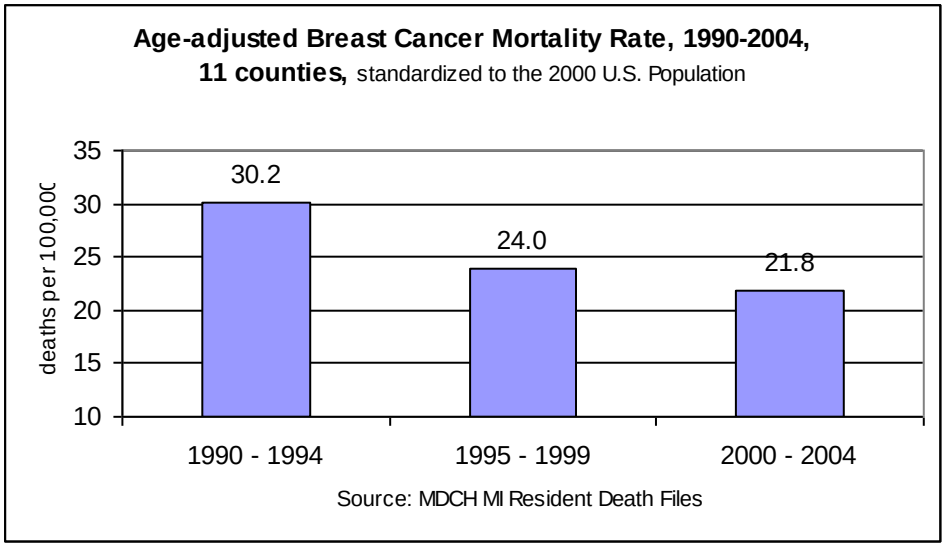
Years of Death	Rate per 100,000	95% CI	Number
1990 - 1994	59.7	3.9	846
1995 - 1999	61.7	3.7	994
2000 - 2004	53.8	3.2	991



Breast Cancer Mortality: There has been a clear improvement in the breast cancer mortality rate. Education campaigns, increased public awareness and access to screening, earlier detection and improvements in treatments are all possible contributors to this improvement. For the period of 1990-1994, the rate was 30.2 per 100,000 (95% CI: 26.4-34.0), then dropped for 2000-2004 to 21.8 per 100,000 (95% CI: 19.0 –24.6).

Age Adjusted Breast Cancer Mortality Rates (Females), 1996-2004
11 County Munson Healthcare Region

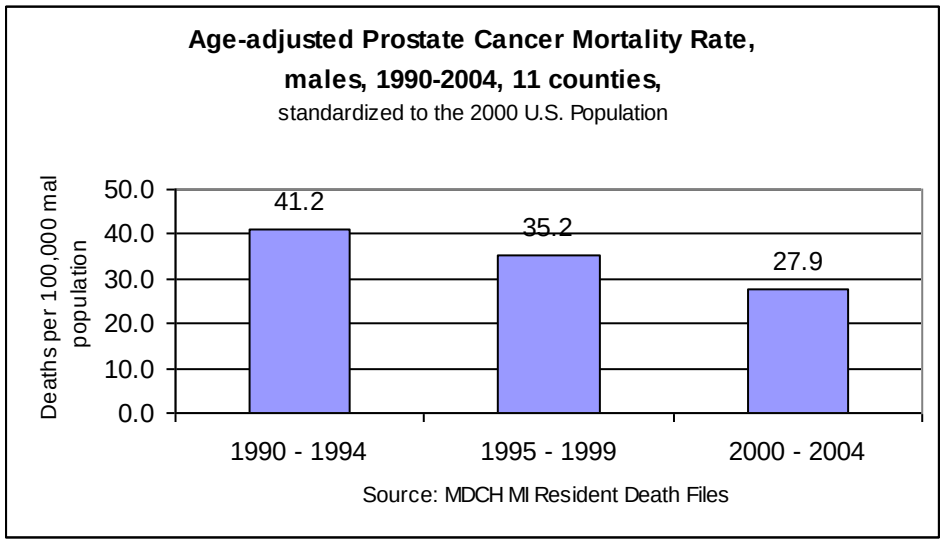
Years of Death	Rate per 100,000	95% CI	Number
1990 - 1994	30.2	3.8	223
1995 - 1999	24.0	3.2	203
2000 - 2004	21.8	2.8	212



Prostate Cancer Mortality: While the incidence of prostate cancer has been stable to rising, the mortality rate has dropped, signifying that while the risk of being diagnosed with prostate cancer has not changed significantly, the risk of dying from it has. As for breast cancer, earlier detection and access to effective life prolonging or life saving treatment is a probable explanation for this improvement. For the period of 1990-1994 the prostate cancer mortality rate was 41.2 per 100,000 (95% CI: 37.1 – 45.3), then by 2000-2004 had dropped significantly to 27.9 per 100,000 (95% CI: 25.0-30.8).

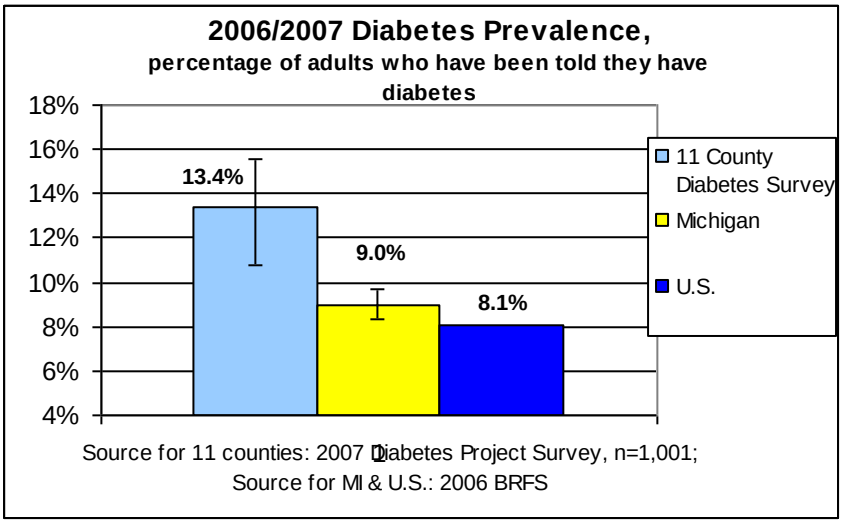
Age Adjusted Prostate Cancer Mortality Rates (Males), 1996-2004
11 County Munson Healthcare Region

Years of Death	Rate per 100,000	95% CI	Number
1990 - 1994	41.2	4.1	217
1995 - 1999	35.2	3.1	205
2000 - 2004	27.9	2.9	206

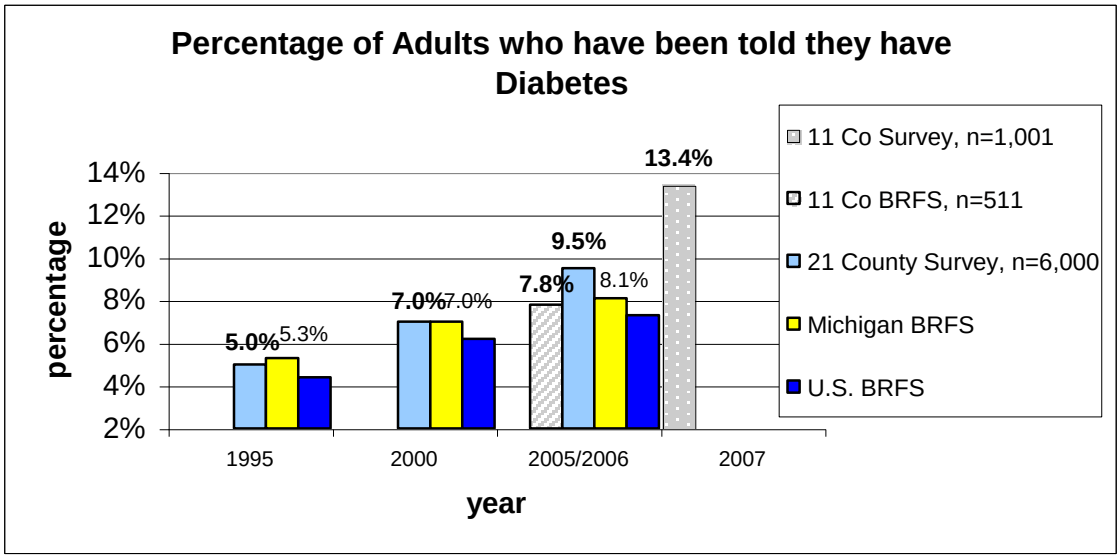


Chronic Disease and Conditions: Diabetes

Diabetes is the sixth leading cause of death in the U.S. and Michigan, and is a primary or secondary diagnoses for 20% of all hospitalizations (Michigan Inpatient Database, MDCH compilation) among residents of the 11 county Munson Healthcare region. A survey conducted by the Northern Michigan Diabetes Initiative (NMDI) in 2007 for the 11 counties revealed that the prevalence of diabetes in the region appears to be higher than the overall rate for both the State and the U.S. The NMDI survey resulted in a local adult diabetes prevalence estimate of 13.4% (95% CI: 11.2% - 15.9%), which is statistically higher than the 2006 prevalence estimate for the State of 9.0% (95% CI: 8.3%-9.7%).

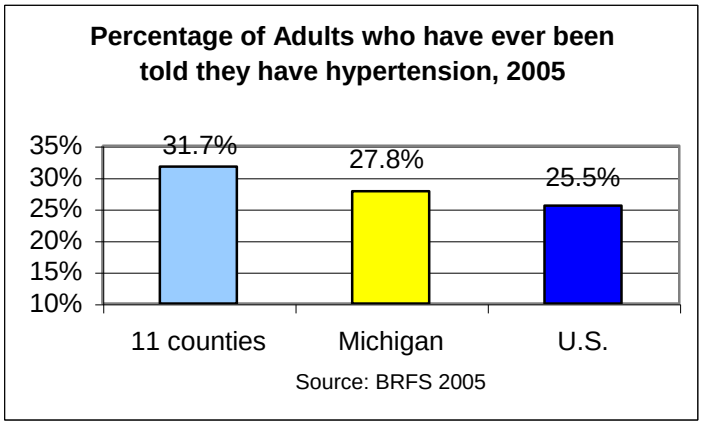


The chart below depicts trend over time in the diabetes prevalence estimate. Several different available data sources are shown to represent the local population, including the 2007 NMDI survey, and 2005 BRFS data for the 11 counties, and the 21 county survey conducted by the North Central Council of the Michigan Hospital Association in 1995 and 2000. At all three population levels – local, State and national, diabetes prevalence is rising.

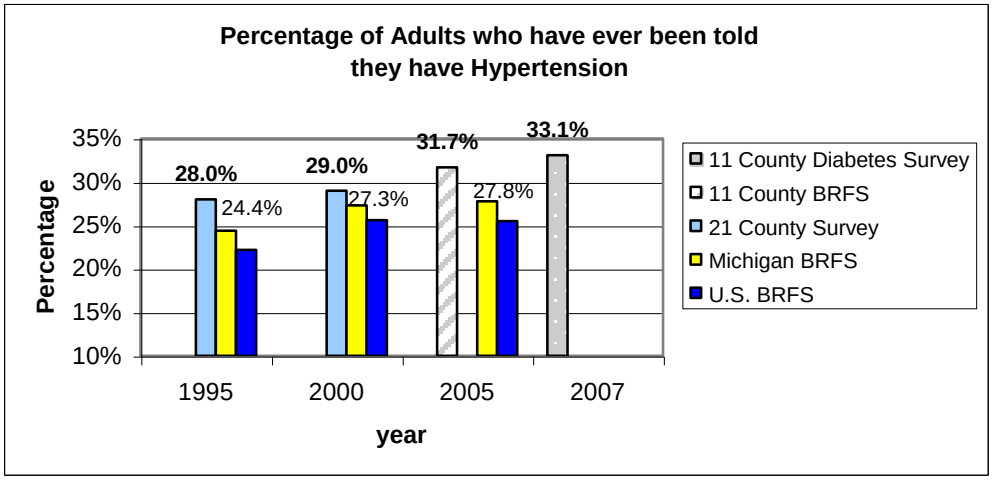


Chronic Disease and Conditions: Hypertension

Hypertension is associated with cardiovascular disease, stroke and renal disease. The percentage of adults with hypertension within the 11 counties in 2005 was estimated to be 31.7% (95% CI: 27.3%-36.5%), which is similar to the state estimate of 27.8% (95% CI: 26.9%-28.8%), but higher than the national median of 25.5%.



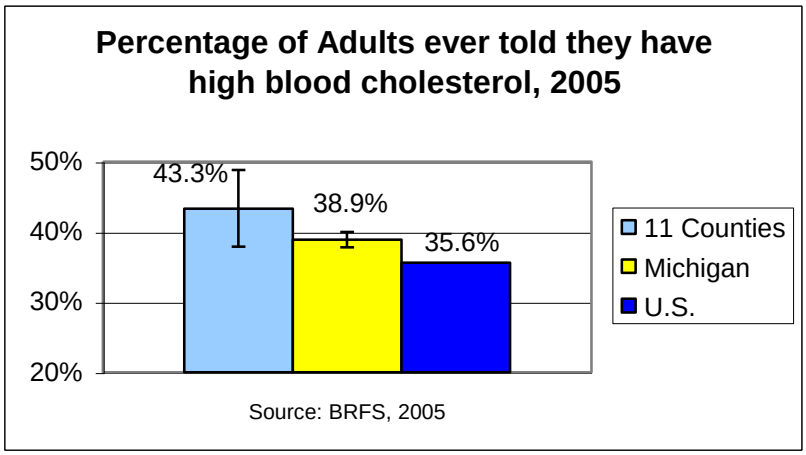
Comparing the 2005 estimates to data collected in the region for previous years (21 county NCCMHA survey), there appears to be a slight increase in the percentage of adults ever told they have hypertension. However, this increase is statistically weak when confidence intervals are taken into consideration for the 2005 estimate.



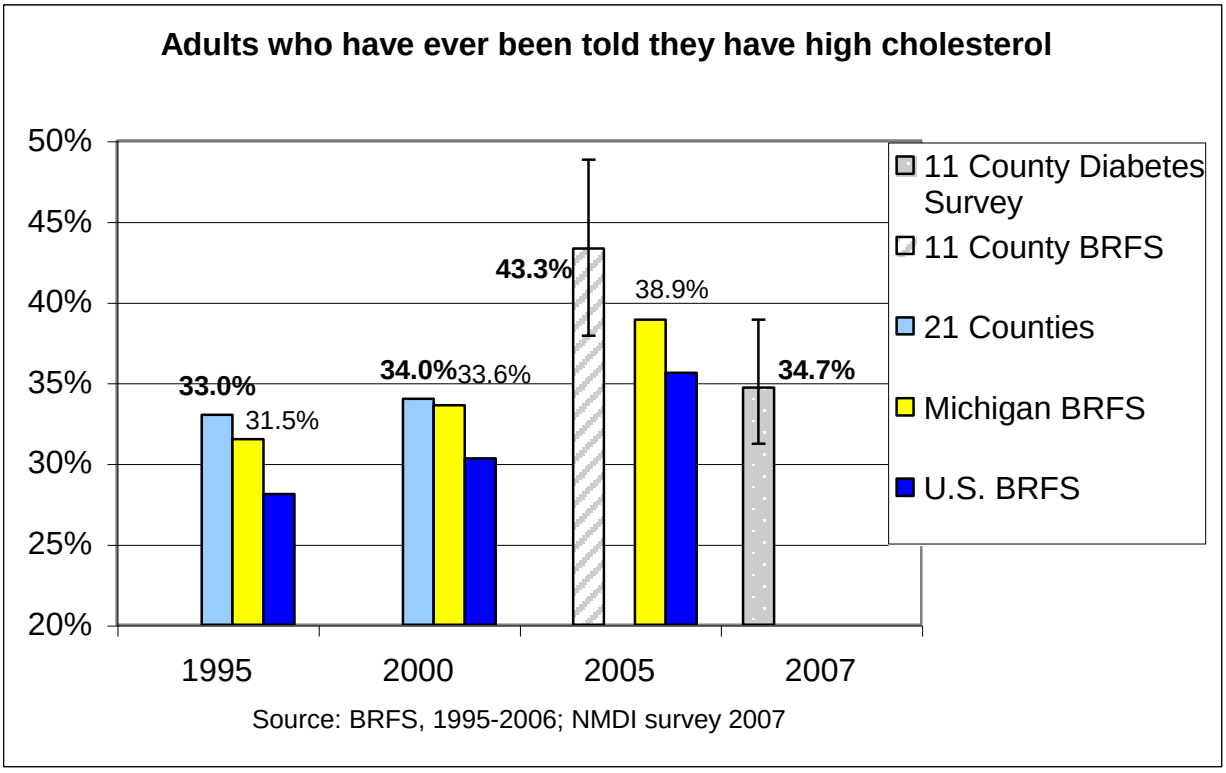
Chronic Disease and Conditions: High Cholesterol

High blood cholesterol is a major risk factor for coronary heart disease. In 2005, an estimated 43.3% of adults have ever been told they have high blood cholesterol (95% CI: 37.9%-48.8%),

which is similar to the estimate for the State of 38.9% (95% CI: 37.8-40.0%), but higher than the national median of 35.6%.

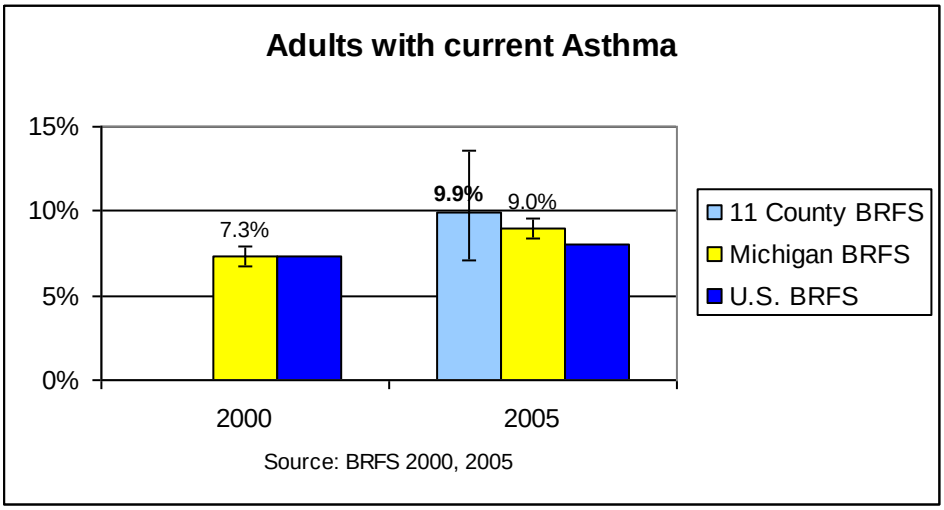


Comparing available data for local estimates from previous years (the 21 county NCCMHA survey) to the 2005 estimate, it appears that the prevalence of high blood cholesterol has increased since 1995 (33%) and 2000 (34%) to about 43% (95% CI: 37.9%-48.8%). A similar increase can be seen in both the State and the U.S. prevalence estimates as well.



Chronic Disease and Conditions: Asthma

Asthma is a chronic condition that is best managed through patient education, appropriate medication and ambulatory care to prevent acute episodes and more intensive medical services. Allergies, family history and tobacco exposure are among the potential risk factors for developing asthma. The estimate for the percentage of adults in the 11 counties who currently have asthma was 9.9% in 2005 (95% CI: 7.1%-13.6%), which is similar to the estimate for the State and the U.S. Local data for previous years was not available to explore trend in current asthma prevalence. The proportion of adults statewide reporting current asthma had a small but not statistically significant increase since 2000 from 7.3% (95% CI: 6.2%-8.4%) to 9.0% (95% CI: 8.4%-9.6%).



Emerging Community Health Trends Reported by Key Informants

A series of interviews and group discussions were held with representatives from community based health organizations and others who have first hand knowledge and exposure to health issues in the constituent communities. A total of 13 people representing 10 organizations participated in the discussions. The purpose of the discussions was to identify any significant trends or emergent issues which are not reflected in the compiled data due to lag time in reporting or availability of data. Common themes that were reported are presented below.

Observed Trends in the Nature of Health Issues Encountered by Providers:

- Increase in pre-diabetes (lower clinical threshold instituted in recent years) and obesity, prominence of chronic disease and auto-immune disease;
- Basic needs (food, transportation, housing) affecting health status;
- Increased complications and medical problems compounded by social and basic needs issues, people presenting at more severe stages than in the past due to delayed care;
- Less family support (parents occupied with economic challenges), kids “on their own”
- Socio-economic issues taking priority over health;
- Within the Migrant population, fewer people eligible for Medicaid resulting in restricted access to services and decreasing reimbursement for care providers
- Hassle and confusion over insurance issues for staff and patients
- Increased stressors all around

- Seeing more complicated cases in Maternal and Infant Health Programs
- Schools trying to meet basic needs, make up for what parents aren't able to provide
- Increased depression, anxiety, mental health issues rising
- Where people get their health info has evolved – key role of the internet, media, t.v., talk shows, people seeking their own diagnoses to avoid the cost of seeing a provider

Emergent Health and Disease Issues:

- MRSA cases
- Pertussis cases
- Fears about immunizations, many questions from parents and some choosing to not immunize;
- Increased cases of drug addicted newborns, 2002-2004 average of 2 cases per year, increased to an average of 11 cases per year for 2005-2007.
- Internet socializing as a risk factor for STI's
- Autism
- This year's housing crisis and the extent to which it is impacting families
- Delaying preventive care and rationing of medication and health care services due to cost (co-pays, deductibles or no coverage)
- Using library services to diagnose problems and research alternatives to expensive prescriptions
- Serious dental conditions – oral health which is so compromised it affects overall health – example of women choosing dentures over longer term dental treatment due to concern about terminating coverage
- Childhood type 2 diabetes

Increased Need and Changing Demographics of those in Need:

- Increased demand and caseloads for the Women Infants and Children (WIC) program
- Social needs becoming as prominent as medical needs
- Diabetes at younger ages
- Increase in the number of college educated people who are in need of public services. Seeing need among educational levels and socio-economic levels rarely seen before
- Split families where a parent has left area to find work – more family disruption
- Seeing more people who are focused on just day to day survival
- Increasing numbers of non-English speaking people, literacy and health literacy issues
- Within the Migrant community, more men coming without families due to increasingly difficult border and travel issues
- Ever increasing need for oral health care
- Caregiver issues – stress of baby boomers caring for elderly parents and children at same time

Community Strengths:

- Very high immunization rates
- Safety net services have increased in recent years – county health plans and community clinics

- Good support system in place for Maternal and Child Health issues (examples: the Healthy Futures program, Maternal and Infant Health Program, early childhood workgroup)
- Good inter-agency and community collaboration

Conclusions

Several major themes and conclusions emerge from the above Community Health Assessment findings. Major conclusions are presented below along with implications for community program planning.

Population Growth and Aging

The 11 county region continues to be a center of significant growth within the State. The population in the region has had rapid growth since from 1990, far outpacing growth within the State as a whole. This growth has been most concentrated within the "baby boomer" generation, and the group over the age of 65 years. Older age groups tend to be more intensive users of health care services. The concentration of older residents within the region has implications for health service needs, as well as caregiver needs and issues. The needs of the aging population and their caregivers will likely remain significant community concerns.

Significant Access Issues and Significant Disparities between Income Groups

There are significant access and health issues within the region, particularly among lower income groups. Decades of population-based research has established income as a primary determinant of health; as economic stressors on families within the region intensify, health status is increasingly threatened**.** The rising poverty rate, rates of uninsured, reliance on Medicaid for health coverage for infants and children, and the increase in the percentage of people reporting fair or poor health status highlight the need to protect and strengthen safety net and public services. Free clinics, county health programs and other low cost or no cost services, which extend access to a significant and growing proportion of the population, are critical, particularly in light of a worsening economic situation.

General Health Status of the Region Comparable to the State, better in a few specific areas

In general, the health status of the population living in the 11 county Munson Healthcare region, is, on average, as good or better than that of all residents statewide. For several key indicators, the 11 county region is doing better than the state: a lower mortality rate, and lower Ambulatory Care Sensitive Hospitalization rate is suggestive of better overall management of health conditions, and perhaps a healthier population. In addition, for a variety of maternal and child health indicators, the 11 county region has improved over time, and is doing better than the State; **(**infant mortality rate, early prenatal care, low birth weight, prematurity, breastfeeding and immunizations). Program investments in outreach and education, including programs such as Healthy Futures, Women, Infants and Children (WIC) and the Maternal and Infant Health Program (MIHP) are likely contributors to these successes. Cancer is another noteworthy area. There have been significant improvements made at all levels – regional, State and national - in the cancer mortality rate since the 1990's, which is likely attributable to improvements in detection and treatment. While the incidence of cancer appears slightly higher in the 11 counties than statewide, the cancer mortality rate, or risk of dying from cancer, is slightly lower.

Chronic Disease and Related Risk Factors are Affecting Large Proportions of the Population

A review of indicators related to chronic disease and related risk factors reveals that these health issues are affecting significant proportions of the population. Most notably, the rapid increase in the prevalence of obesity, and slow progress or stagnation in the rates of smoking and high blood cholesterol highlight the need for focus on healthy lifestyles. Regional chronic disease rates for diabetes, heart disease and hypertension parallel the high prevalence of risk factors. With age as an additional leading risk factor, and the aging nature of the 11 county region, chronic disease prevention and management emerge as key community needs.

Acknowledgements

The following partners made significant contributions to the 2008 Community Health Assessment Project:

Overall coordination, research, analysis, compilation of indicators, and writing was provided by Elizabeth Kushman, Munson Healthcare Community Health Department.

Michigan Department of Community Health provided special data compilations for the 11 county region and technical assistance with analysis and interpretation.

Lori Corteville, Statistician Specialist, Diabetes and Other Chronic Disease
Michael Beebe, Senior Analyst, Vital Records and Health Data Development Section
Glenn Radford, Senior Statistician, Division for Vital Records & Health Statistics
Georgia Spivak, Statistician Specialist, Michigan Cancer Surveillance Program
Betsy Wasilevich, Asthma Epidemiologist, Division of Genomics, Perinatal Health, and Chronic Disease Epidemiology
Ann Rafferty, Chronic Disease Epidemiology Division

The following community partners provided input as Key Informants and/or assistance with data interpretation and suggestions for presentation:

District Health Department #10:
Linda Van Gills, Health Officer
James Wilson, D.O., Medical Director

Grand Traverse County Health Department:
Michael Collins, MD, Medical Director
Deanna Kelly, Personal Health Administrator
Kit Mikovich, Personal Health Manager

Benzie-Leelanau County Health Department
Jenifer Murray, Director of Personal Health Services

TBAISD Youth Health and Wellness Center
Lisa Peacock, Coordinator

Northwest Michigan Health Services
Ann Avery, Clinical Services Director

Traverse Health Clinic and Coalition
Arlene Brennan, Executive Director
Flora Biancalana, MD, Medical Director

Munson Family Practice Center
Roger Gerstle, MD, Residency Program Director