Health and Well-being of Rural Minnesotans: A Minnesota Rural Health Status Report

A Joint Project of the Minnesota Office of Rural Health & Primary Care and the Minnesota Center for Health Statistics

MINNESOTA MDH DEPARTMENT OF HEALTH

office of Rural Health & Primary Care MINNESOTA DEPARTMENT OF HEALTH

CENTER FOR HEALTH StatisticS MINNESOTA DEPARTMENT OF HEALTH

Table of Contents

Introduction

Historically, the central focus of rural health policy has been on ensuring the accessibility of health care services in rural areas. Within the last decade, however, research has found that other "determinants of health," including socioeconomic factors and personal behaviors, are also important in evaluating the health status and well-being of selected populations. The Centers for Disease Control (CDC) issued a report entitled, *Health, United States 2001,* which set a precedent for documenting the disparities in health among urban and rural communities. The CDC's report showed that rural areas, with their distinctly different demographic, social and economic characteristics, present a unique set of challenges that future disease prevention and health promotion programs will need to address.

Health and Well-being of Rural Minnesotans: A Minnesota Rural Health Status Report is a joint effort by the Office of Rural Health & Primary Care and the Minnesota Center for Health Statistics to assess and compare the health of rural and urban communities in Minnesota. The report presents some standard indicators of health status, such as behavioral risks, disease and injury prevalence, birth outcomes and causes of mortality among rural and urban Minnesotans. Since each data source has different time frames for updating and publicly releasing information, time periods in this report vary by data set. This report identifies specific health measures indicating differences between urban and rural Minnesotans. To gain a full picture of the health status of rural and urban communities, all the health measures should be considered.

Numerous definitions of rural exist and are based on a variety of criteria from population density to geographic area. For consistency and clarity in this report, rural is defined as "Greater Minnesota" and includes all counties outside the seven-county metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington counties).

This report paints a health status landscape, which will foster a greater public understanding of the importance of addressing rural issues in developing health promotion and disease prevention initiatives. Rural health providers and local public health professionals may find the information in the report useful as they develop effective community health promotion programs. Overall, the report is intended to raise awareness about the unique health care challenges that come with living in Minnesota's rural communities.

Behavioral Health

Smoking, lack of exercise, and never wearing seatbelts all place an individual's health at risk. The prevalence of these and other behaviors are often used to determine the health status of a population and can be used to identify patterns contributing to rural-urban differences. Most behaviors are modifiable, often making them the focus for health promotion and disease prevention strategies. Measuring behavior prevalence can help with the planning of population-specific programs and reveal a need for additional health care services.

This section focuses on some standard behavioral risks often associated with chronic disease and sometimes death, also referred to as the "actual causes of death." Data in this section comes from Behavioral Risk Factor Surveillance System (BRFSS), a state-based, nationwide survey, which collects information on health behaviors from a random sample of adult residents (18 years and older). The Minnesota Department of Health has been collecting BRFSS data since 1984 and receives an average annual response rate of over 80 percent, the highest in the nation. In 2002, the BRFSS data set for Minnesota contained 4,494 cases. High response rates with sufficient amounts of data provide reliable regional comparisons of differences in health behaviors between Greater Minnesota and the seven-county metropolitan area.

Some of these risk indicators are presented along with national and state statistics for comparison. The BRFSS data presented here are not age-adjusted to account for the geographic difference in age distribution between the metro and nonmetro regions. Therefore, the BRFSS data should be considered in combination with other indicators when comparing the overall health and well-being of rural and urban communities.

In This Section:
Tobacco use
Alcohol use
Overweight/Obesity
Tooth Loss
Seat Belt use

Source:
The Behavioral Risk Factor Surveillance System (BRFSS)

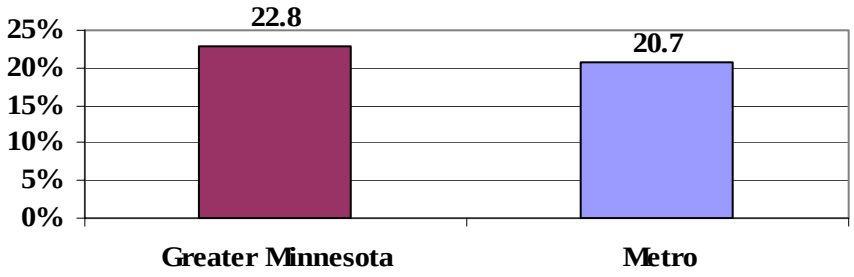
To Learn More About the Data:
Centers for Disease Control
http://www.cdc.gov/brfss

Tobacco use

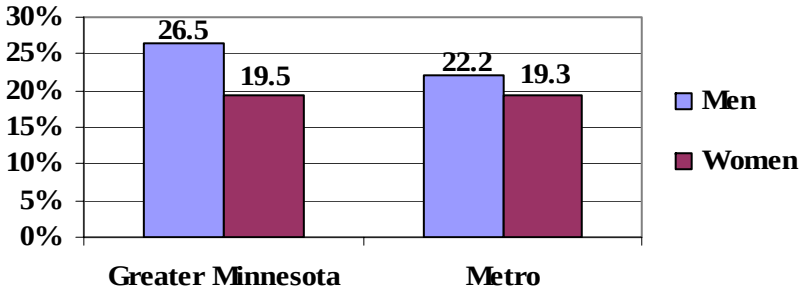
Greater Minnesota Residents Slightly More Likely to Smoke

- In 2002, 22.5 percent of the nation's adult population was smoking and Minnesota ranked 14th lowest in adult smoking prevalence.
- In 2002, nonmetro residents were more likely to smoke compared to Metro residents. See Graph 1.
- Smoking varies more by region for men than for women. Men living in Greater Minnesota were more likely to smoke compared to men living in the Metro area, 26.5 and 22.2 percent respectively. There is very little difference (19.5 to 19.3 percent) in the smoking percentages among females living in Greater Minnesota and the Metro area. See Graph 2.

Graph 1
Smokers by Region - BRFSS 2002



Graph 2
Smokers by Region and Gender - BRFSS 2002

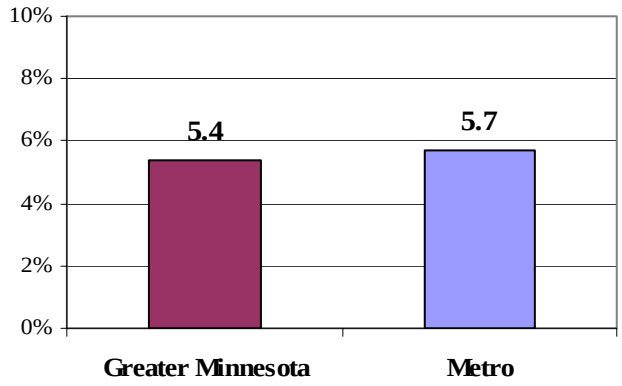


Alcohol use

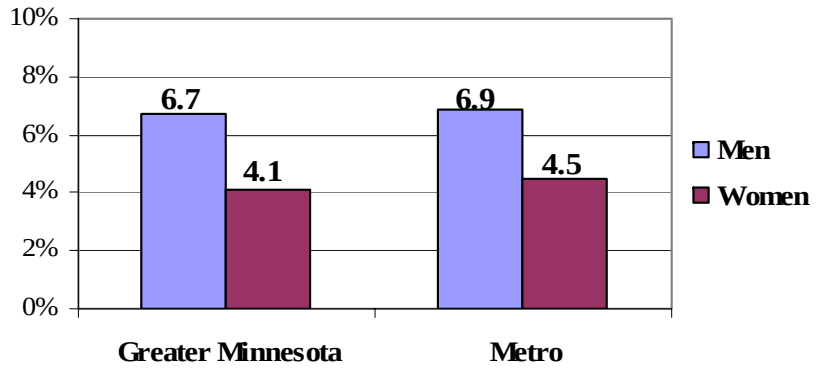
Greater Minnesota Residents not at Greater Risk of Heavy Drinking

- In 2002, 5.4 percent of rural Minnesotans reported heavy drinking (60+ alcoholic drinks for men and 30+ alcoholic drinks for women per month) compared to 5.7 percent of urban residents. See Graph 3.
- Prevalence of heavy drinking is higher among men than women whether they live in Greater Minnesota or the Metro area. See Graph 4.
- In 2001, a majority of deaths involving alcohol (35 percent) in Minnesota were due to injuries from motor vehicle crashes, fires, falls and drowning.

Graph 3
Adults at Risk for Heavy Drinking*
by Region - 2002 BRFSS



Graph 4
Adults at Risk for Heavy Drinking*
by Region and Gender - 2002 BRFSS



* Heavy Drinking = 30+ alcoholic beverages in the last month.

Obesity

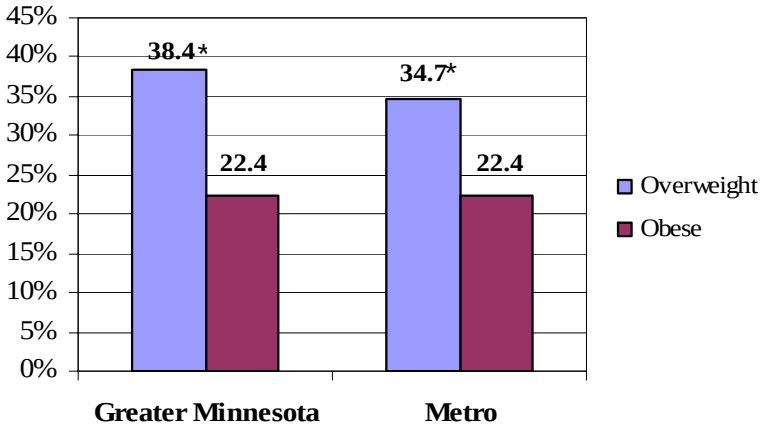
Residents of Greater Minnesota More Likely to be Overweight

- Studies have shown that while regular, physical exercise leads to longer and healthier lives, it has become infrequent among adults. Minnesota's adult obesity rates increased 81 percent between 1991 and 2001, from 10.6 to 19.2 percent.

- Greater Minnesota and Metro residents were equally likely to be *obese* (BMI greater than or equal to 30). However, Greater Minnesota residents were more likely to be *overweight* (BMI greater than or equal to 25) compared to residents in the Metro area. See Graph 5.

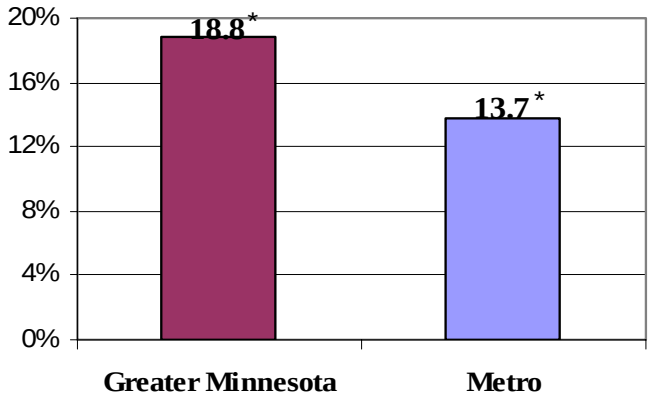
- In Greater Minnesota, 18.8 percent of residents were not participating in leisure time physical activity or exercise outside work, compared to only 13.7 percent of residents in the Metro area. See Graph 6.

Graph 5
Adults Overweight or Obese by Region - BRFSS 2002



* Difference between regions is statistically significant.

Graph 6
Adults Reporting no Leisure-Time Physical Activity or Exercise During the Past Month - BRFSS 2002



* Difference between regions is statistically significant.

Tooth Loss

Tooth Loss Among Adults More Widespread in Greater Minnesota

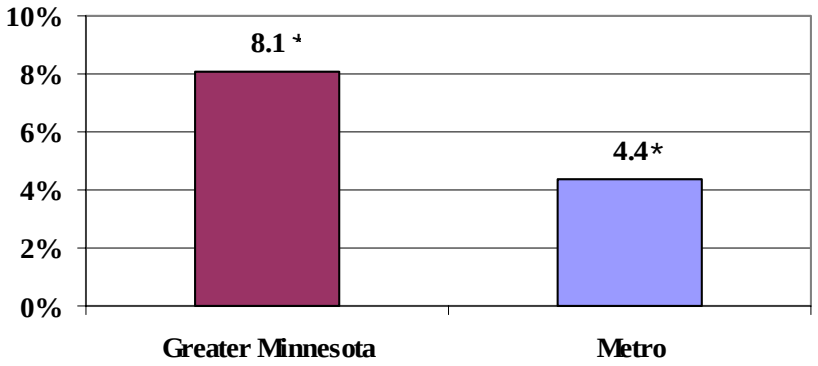
- In 2002, most residents of Greater Minnesota and the Metro area had visited a dentist or dental clinic in the past 12 months (72.8 and 79.2 percent respectively). However, about 8 percent of residents in Greater Minnesota said it had been five or more years since they visited a dentist, compared to 4.4 percent of Metro residents. See Graph 7.

- In 2002, permanent tooth loss of six or more teeth occurred more frequently among residents of Greater Minnesota compared to residents of the Metro area, 15.2 and 9.1 percent respectively.

- Twice as many elderly residents, ages 65 and older, in Greater Minnesota had not visited a dentist or a dental clinic in five or more years, compared to elderly residents of the Metro area (15 percent versus 7.5 percent).

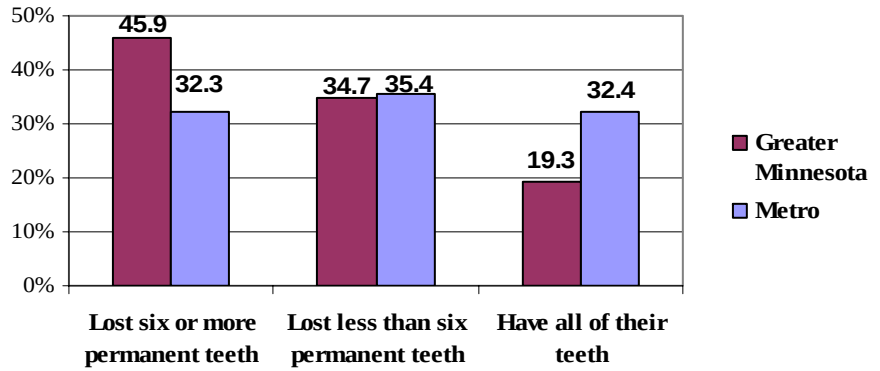
- Forty-six percent of rural residents age 65 and older in Greater Minnesota report having lost six or more of their permanent teeth because of decay or gum disease, compared to only 32.3 percent of urban elderly. See Graph 8.

Graph 7
Adults who had not Seen a Dentist in Five or More Years
By Region - BRFSS 2002



*The difference between regions is statistically significant.

Graph 8
Elderly Adults who Have Tooth Loss due to Decay or Gum Disease*
By Region BRFSS 2002



*Elderly is defined as 65+ years and older.

Seat Belt use

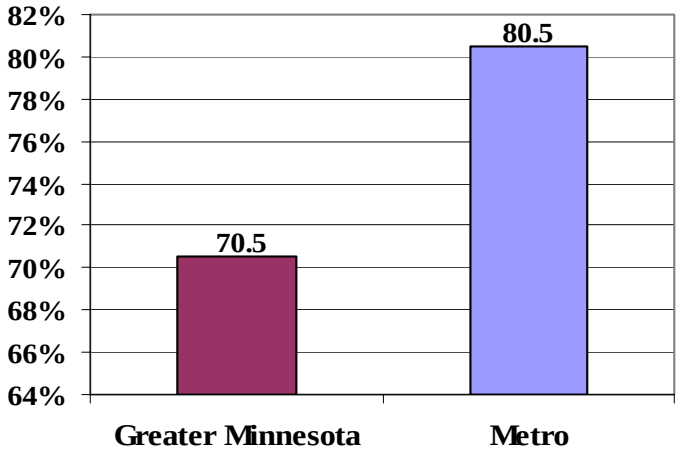
Seat Belt use Less Common in Greater Minnesota

- In overall seatbelt use, Minnesota ranks 28th highest (75.5 percent usage) of all 50 states.

- Greater Minnesota residents are more likely to *not* wear seatbelts compared to Metro residents. The 2002 BRFSS indicates slightly less than 71 percent of residents in Greater Minnesota always wear seatbelts. See Graph 9.

- In 2002, three out of four motor vehicle fatalities occurred in communities of less than 5,000 population. The Metro area, with over half the state's population, accounted for only 28 percent of the fatal crashes.[1]

Graph 9
Adults who Always Wear a Seat Belt
by Region - BRFSS 2002



[1] Minnesota Motor Vehicle Crash Facts, 2002; Minnesota Department of Public Safety

Adolescent Behavioral Health

Engaging in unhealthy, risky behavior is a characteristic frequently associated with adolescence. Today, our leading causes of death, such as cancer, stroke and heart disease can be a consequence of behaviors initiated during adolescence. Addictive behaviors, such as smoking, can lead to chronic health conditions and possibly death. Reducing unhealthy behaviors during youth is a widely accepted public health strategy for preventing chronic diseases in adulthood.

Some examples of early intervention programs focus on alcohol, smoking and obesity. Antismoking and drinking programs targeting youth are most effective in reducing overall tobacco and alcohol use and the chances of premature death related to these behaviors. Physical education programs provide opportunities for adolescents to be active given the low rates of outside physical activity among youth, which are reflected in the growing rates of childhood and adult obesity.

The following section looks at student participation in risky health-related behaviors in both the Metro area and Greater Minnesota. Youth behavior data comes from the Minnesota Student Survey (MSS). Since 1989, the Minnesota Department of Education has used the MSS to obtain information about the activities, opinions and behaviors of students. The MSS is a confidential, voluntary survey for sixth, ninth and 12th grade students in schools throughout Minnesota. State and county agencies and local school districts use it as an assessment tool in planning for the needs of the adolescent population. MSS data may not be representative of the entire adolescent population since it does not capture school-age youth who have dropped out or are chronically absent. Students in alternative settings, such as area learning centers or correctional and residential treatment facilities are surveyed separately and are not included in this report.

In This Section
Tobacco use
Alcohol use
Physical Activity

Source
Minnesota Student Survey (MSS)

To Learn More About the Data
Minnesota Department of Education
http://www.mnschoolhealth.com/index2.html

Tobacco use

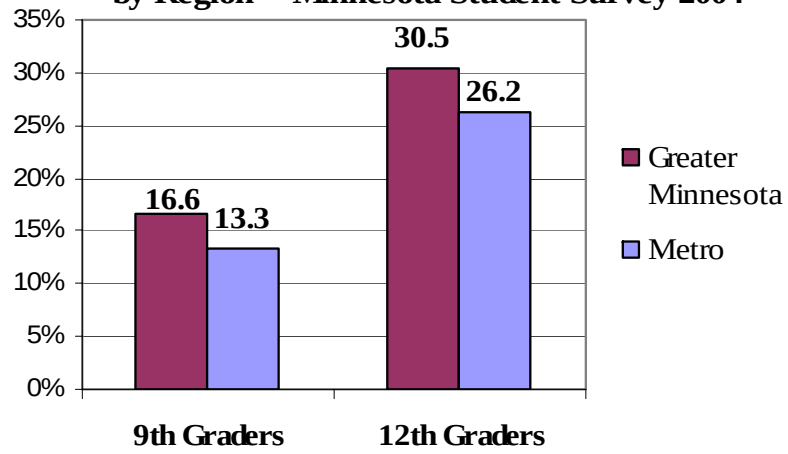
Youth of Greater Minnesota More Likely to use Tobacco

- In 2004, cigarette smoking prevalence among teens in Minnesota was 14.9 percent among ninth graders and 28.4 percent among 12th graders. Cigarette smoking among students has decreased substantially since 1998. A regional breakdown of students who smoke shows higher smoking prevalence among ninth and 12th graders in Greater Minnesota compared to their counterparts living in the Metro area. See Graph 10.

- Overall, 22.5 percent of high school students (ninth and 12th grades combined) in Greater Minnesota smoked compared to 18.6 percent of Metro area students.

- Among adult Minnesotans who use tobacco, nearly 90 percent started smoking before the age of 18.

Graph 10
Students who Smoked in the Last Month*
by Region - Minnesota Student Survey 2004



*Smoking is defined as any cigarette smoking in the previous 30 days.

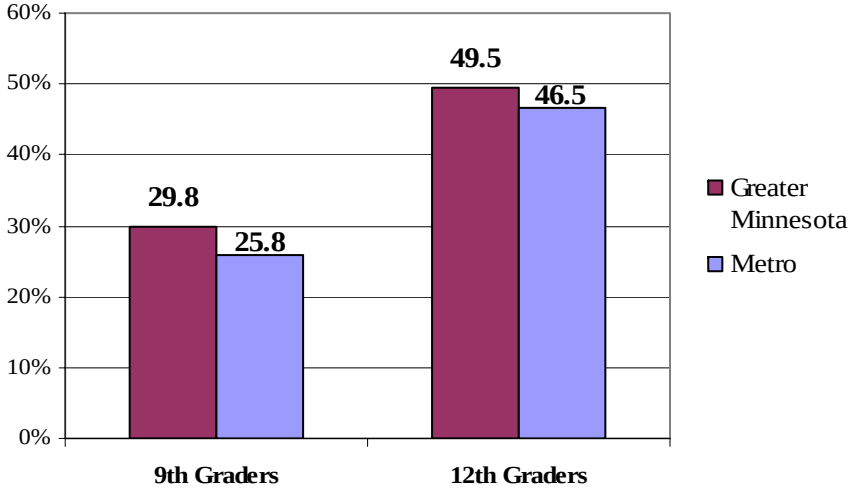
Alcohol use

Underage Students in Greater Minnesota Drink More Often

- In 2004, 29.8 percent of ninth graders and 49.5 percent of 12th graders in Greater Minnesota reported drinking alcoholic beverages in the past month. Alcohol consumption is 4 percentage points higher among ninth graders and 3 percentage points higher among 12th graders living in Greater Minnesota compared to ninth and 12th graders living in the Metro area. See Graph 11.

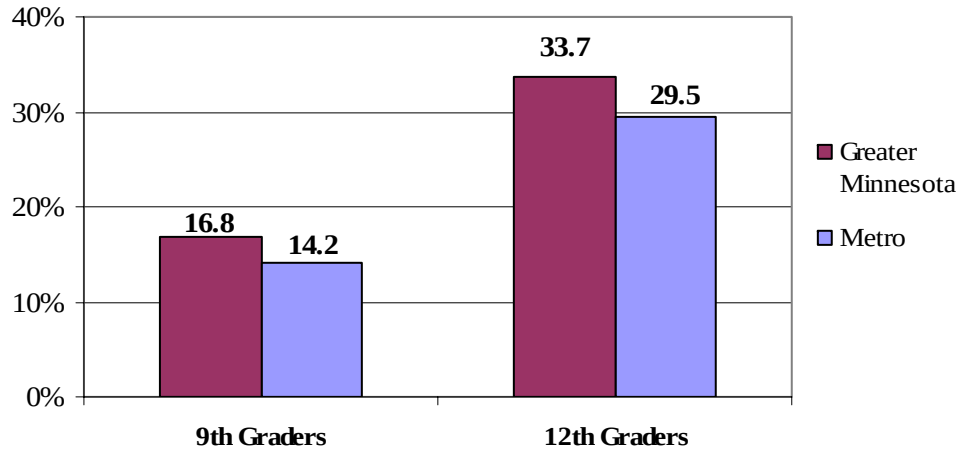
- In Greater Minnesota, high school students are more likely to report binge drinking (defined by the Minnesota Student Survey as consuming five alcoholic beverages or more in a row) compared to Metro area high school students. See Graph 12.

Graph 11
Students Consuming Alcohol in the Last Month*
by Region - Minnesota Student Survey 2004



*Alcohol consumption is defined as drinking on one or more occasions in the last 30 days.

Graph 12
Students Binge Drinking one or More Times in two Weeks*
by Region - Minnesota Student Survey 2004



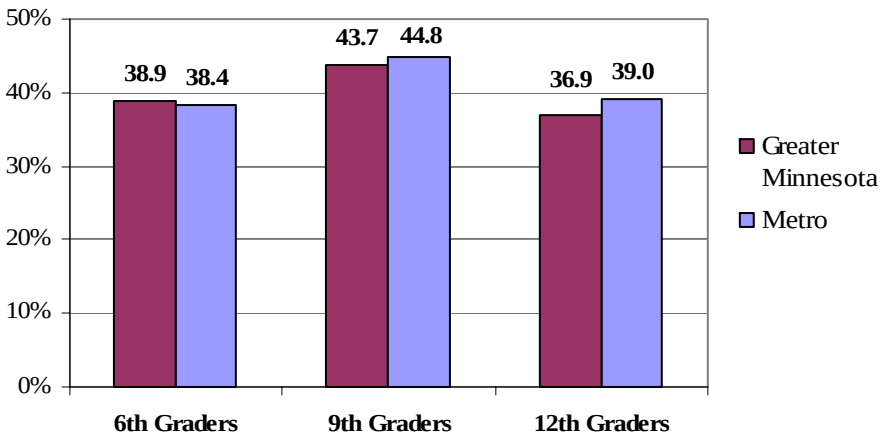
*Binge drinking = five or more drinks in a row.

Physical Activity
Students in Greater Minnesota More Likely to be Physically Active

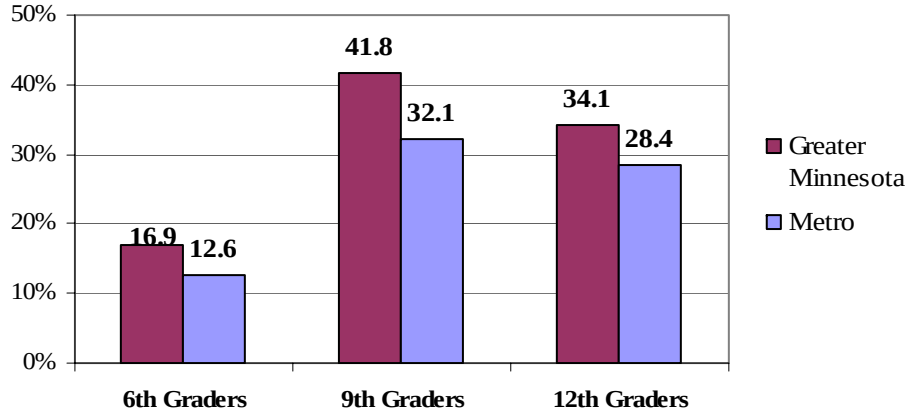
- Lower rates of physical activity are reflected in the growing rates of childhood and adult obesity. The 2004 Minnesota Student Survey indicated students at each grade level spent more time watching television than playing sports on a school team regardless of region. See Graphs 13 and 14.

- In 2004, 74.8 percent of sixth and ninth graders in Greater Minnesota, reported being physically active for 30 minutes or more on three or more days in the past week, compared to 73.8 percent of Metro area students.

Graph 13
Students Watching TV or Videos six or More Hours a Week by Region - Minnesota Student Survey 2004



Graph 14
Students Playing School Team Sports six or More Hours a Week by Region - Minnesota Student Survey 2004



Disease

Tracking the prevalence of chronic illness, such as cancer or diabetes, is another measure for evaluating the health status of rural and urban populations. Monitoring the rates of disease provides a more complete picture of the impact illness has within a community; while measuring the rates of disease by geographic area can help reveal where unmet needs exist. Disease surveillance is important because it monitors the risk, complications and trends of disease, which can improve the planning, implementation and availability of treatment. The collection of disease data can be used to educate the public, promote research, target prevention efforts and develop policy.

The data presented in this section are from three different sources: Minnesota Department of Health's HIV/AIDS Surveillance System, Behavior Risk Factor Surveillance System (BRFSS) and Minnesota Cancer Surveillance System (MCSS). The Infectious Disease Epidemiology, Prevention and Control program collects HIV/AIDS data as required under Minnesota rules governing communicable diseases. The diabetes data are from the BRFSS, which is a state-based, nationwide survey collecting information on those 18 years and older. MCSS is responsible for ongoing surveillance of both cancer incidence and mortality throughout Minnesota.

In This Section

HIV/AIDS
Diabetes
Cancer

Source

Minnesota Department of Health's HIV/AIDS Surveillance System, Diabetes Program and Minnesota Cancer Surveillance Program

To Learn More About the Data

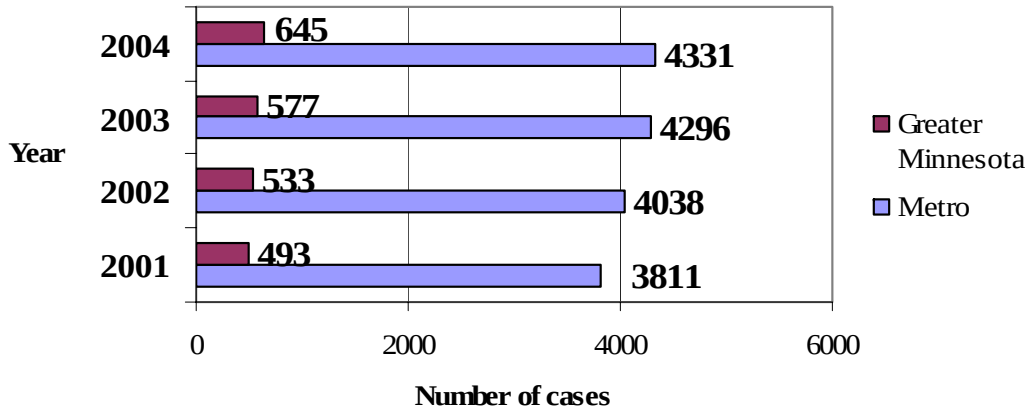
http://www.health.state.mn.us/divs/idepc/diseases/hiv/index.htm
http://www.health.state.mn.us/diabetes/index.html
http://www.health.state.mn.us/hpcd/cdee/mcss/index.html

HIV/AIDS

More People Living with HIV/AIDS in Greater Minnesota

- An increasing number of Minnesotans are living with HIV/AIDS.
- AIDS deaths have declined since the arrival of antiretroviral therapy introduced in 1996. The number of AIDS cases diagnosed has remained stable since 1997.
- The rates of people living with HIV are substantially higher in both Minneapolis and St. Paul.
- Cases outside the Metro area have remained low and stable (currently 13 percent of the prevalence). Between 2001 and 2004, 152 new cases were diagnosed *outside* the Metro area. During this same period, 520 new cases were diagnosed in the Metro area. See Graph 15.

Graph 15
People Living With HIV/AIDS in Minnesota by Region 2001-2004



Diabetes

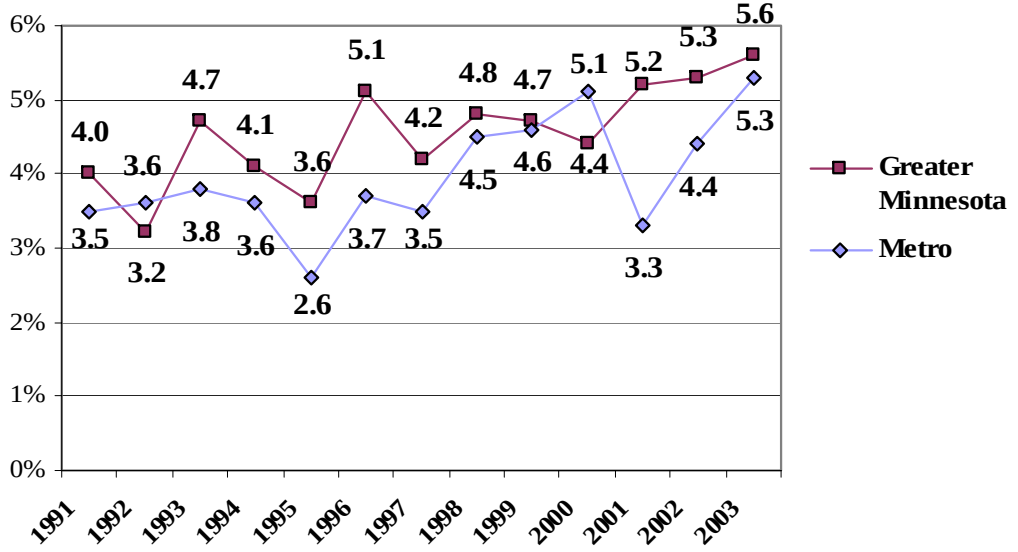
Diabetes Prevalence Similar in Greater Minnesota and Metro Area

- One in 10 Minnesotans either have diabetes or are at high risk of developing it.[2]

- From 1991 to 2003, the average proportion of residents in Greater Minnesota who reported that they had been diagnosed with diabetes was 4.5 percent compared to 4.0 percent of residents in the Metro area. See Graph 16.

- Women in the Metro area report being diagnosed with pregnancy-related diabetes as frequently as women in Greater Minnesota, 1.0 and 0.7 respectively. Pregnancy-related diabetes affects about 4 percent of all pregnant women—about 135,000 cases of pregnancy-related diabetes in the United States each year.

Graph 16
Adults Diagnosed With Diabetes
by Region - BRFSS 1991-2003



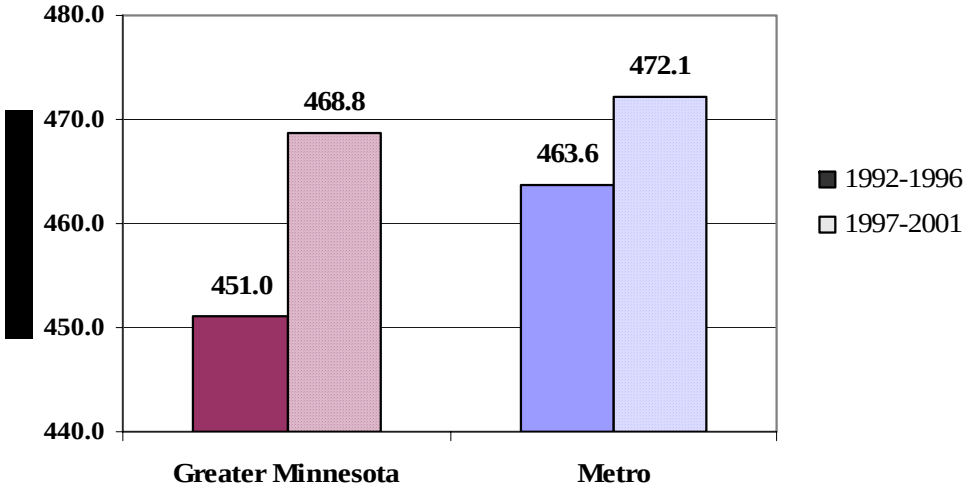
[2] Minnesota Department of Health Fact Sheet, *Diabetes in Minnesota* March 15, 2005.

Cancer

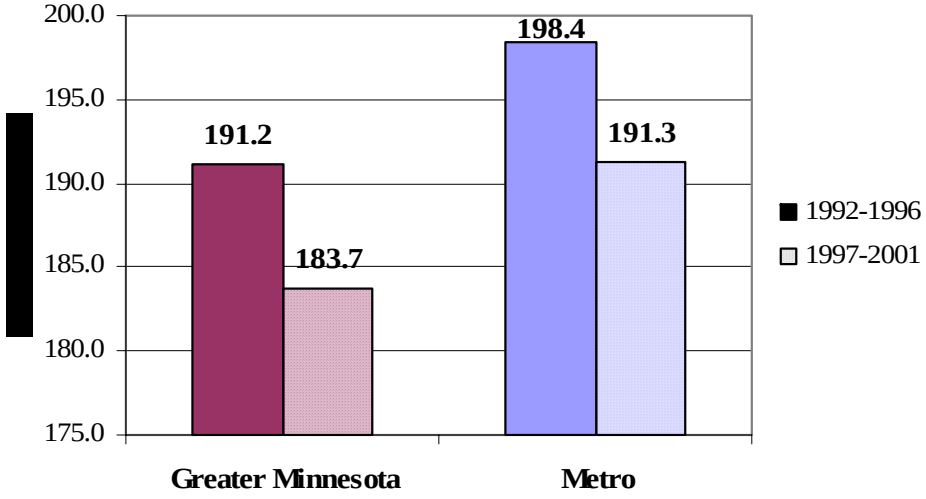
Greater Minnesota Residents at no More Risk of Cancer Than Metro

- Most recent figures indicate slightly lower incidence of cancer in Greater Minnesota compared to the Metro area.
- Compared to rates for 1992-1996, the most recent figures indicate that there has been an increase in cancer incidence (all types combined) both in the Metro area and in Greater Minnesota. See Graph 17.
- Data from 1997-2001 indicate a decrease in cancer mortality (all types combined) for both the Metro area and Greater Minnesota. See Graph 18.

Graph 17
Cancer Incidence (all Types Combined) by Region 1992-1996 and 1997-2001



Graph 18
Cancer Mortality (All Types Combined) by Region 1992-1996 and 1997-2001



Injuries

Injuries are one of the top 10 leading causes of death for all Americans regardless of age, gender, race or economic status. A variety of causes lead to injuries with consequences that can be fatal or non-fatal. Every year in the United States, approximately one in six residents requires medical treatment for an injury and an estimated one in 10 residents visits a hospital emergency room for treatment of a non-fatal injury. [3] Injury also places a toll on communities in terms of the economic consequences that go along with the medical treatment, rehabilitation, lost wages and lost productivity.[4]

Significant progress has been made in the area of injury prevention with public health promoting the passage of protective policy measures. The use of seatbelts, bicycle helmets, gun safety locks, child safety seats are just a few reasons for the dramatic reduction of fatal and non-fatal injury rates among the public. Ongoing research and new public health approaches are important and necessary to the reduction of injury and premature death in rural populations.

A majority of the data in this section is from the Minnesota Department of Health's Injury and Violence Prevention unit. The non-fatal injury data is from the 2003 Universal Billing data set, which represents approximately 93 percent of all hospitals' patient discharge data for injuries in Minnesota. The fatal injury data is from the 2003 Minnesota death certificates. The Minnesota Department of Labor and Industry provides statewide occupational injury data in a report entitled, *Minnesota Workplace Safety Report: Occupational Injuries and Illnesses, 2002*. Since agriculture and mining are considered two of the more dangerous occupations and are found in rural areas, injuries related to these occupations are compared to injury rates in other industries and presented in this section.

In This Section

Source

Minnesota Department of Health Injury and Violence Prevention Program
Minnesota Department of Labor and Industry

To Learn More About the Data

http://www.health.state.mn.us/injury/
www.doli.state.mn.us

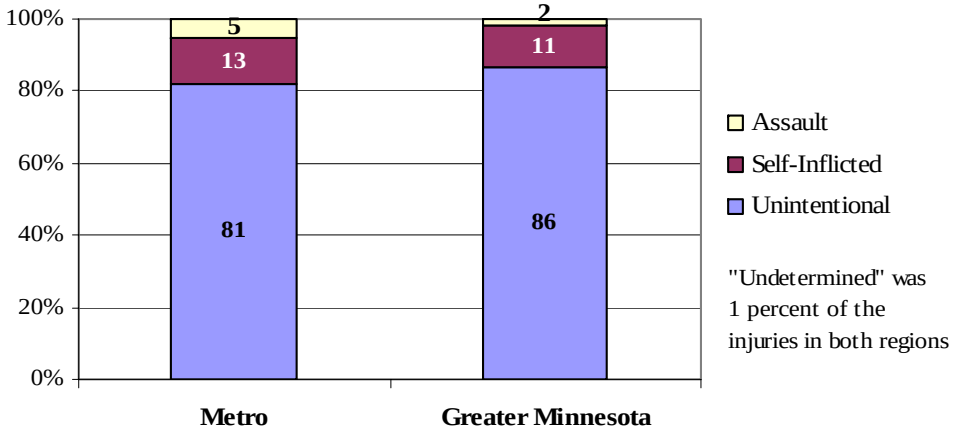
[3] National Center for Injury Prevention and Control. *Injury Fact Book 2001-2002.* Atlanta, GA: Centers for Disease Control and Prevention; 2001.
[4] CDC. *Surveillance Summaries*, Sept. 3, 2004. MMWR 2004:53 (No.SS-7).

Unintentional Injury (Accidents)

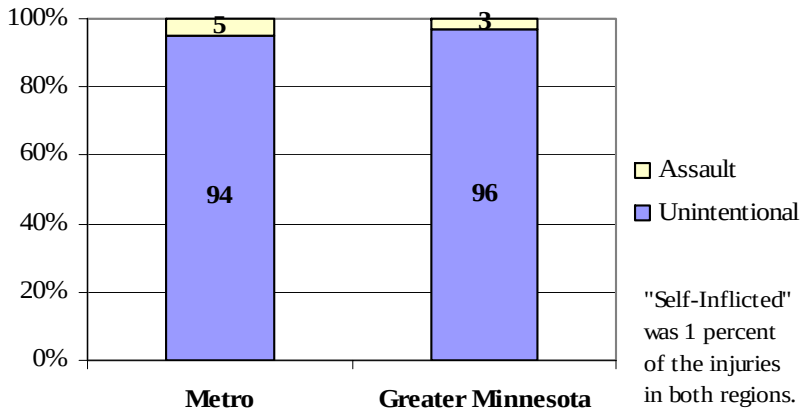
Greater Proportion of Unintentional Injuries Occur in Greater Minnesota

A majority of injuries occurring in Minnesota are non-fatal and unintentional. In 2000, the percentage of nonfatal, unintentional injuries that resulted in hospitalization or were treated in emergency rooms was slightly greater in rural Minnesota compared to the Metro area. See Graphs 19 and 20.

Graph 19
Hospitalized Injuries (Non-Fatal) by Region 2001



Graph 20
Emergency Department-Treated Injuries (Non-Fatal) by Region 2001



Firearms

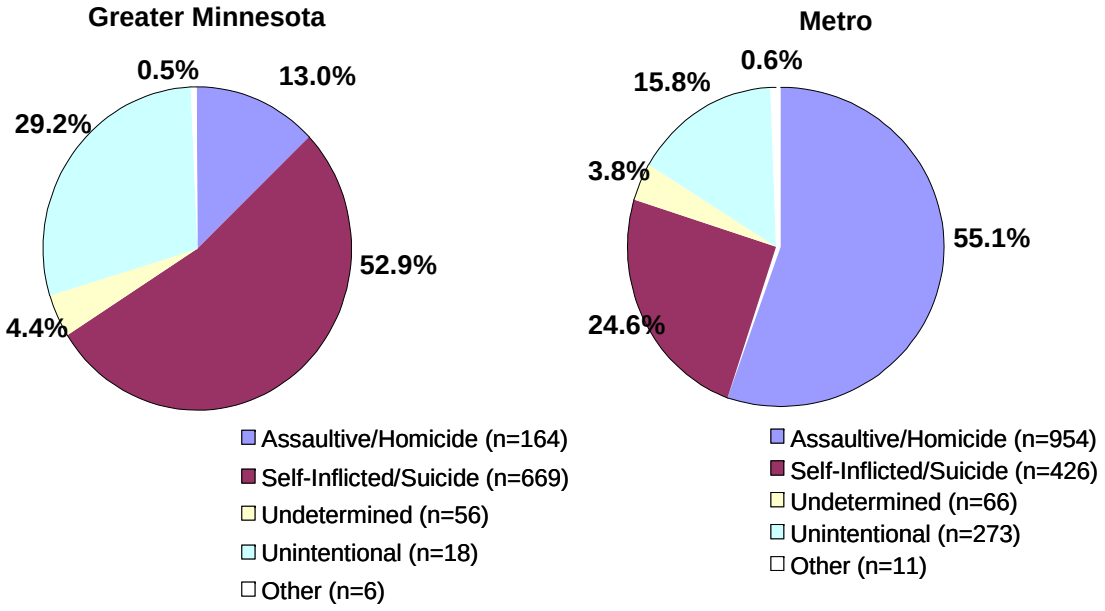
Firearm-Related Injuries Associated With Suicide in Greater Minnesota

- In Greater Minnesota, more than half of firearm injuries are due to suicide (52.9 percent). Unintentional injuries are the second most common firearm injury (29.2 percent) followed by assault/homicide (13 percent). See Graph 20.
- The most frequent cause of firearm injury in the Metro area is assault/homicide (55.1 percent). Suicide is the second most frequent cause of firearm injury (24.6 percent) followed by unintentional injury (15.8 percent). See Graph 20.

Graph 20

Firearm-Related Injury

by Region 1998 - 2001

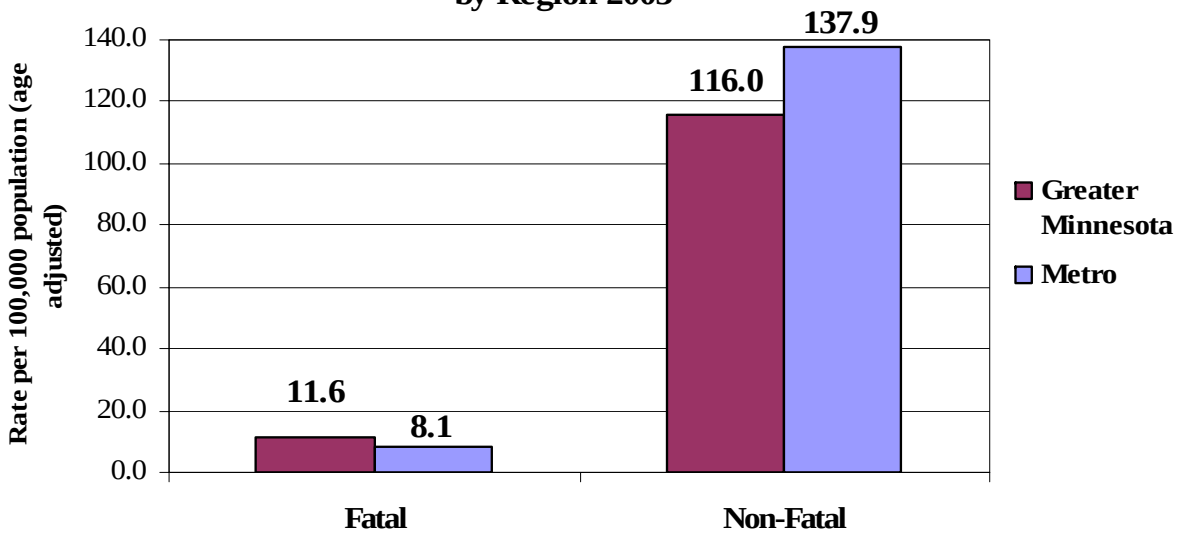


Suicide

Injury From Suicide More Likely to be Fatal in Greater Minnesota

- In 2003, Greater Minnesota had a higher rate (11.6 compared to 8.1) of fatality from suicide. See Graph 21.
- Non-fatal suicide rates are higher in the Metro area compared to Greater Minnesota (137.9 and 116.0 respectively). See Graph 21.

Graph 21
Suicide Injuries (Fatal and Non Fatal)
by Region 2003



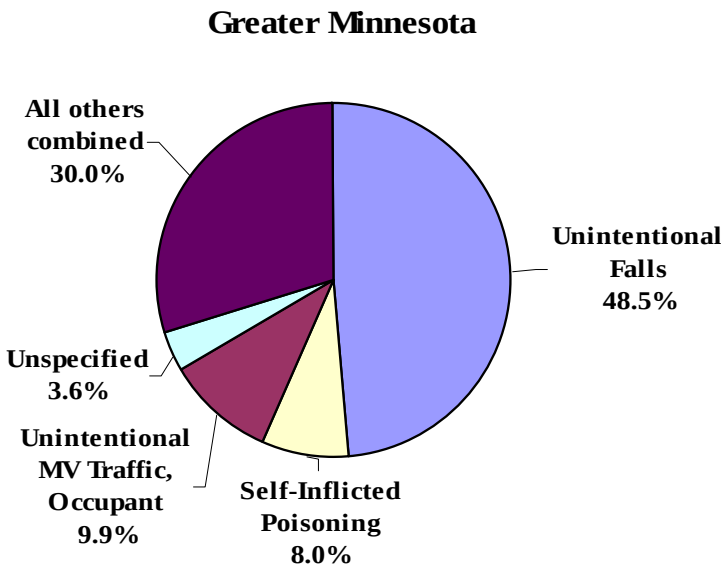
Falls

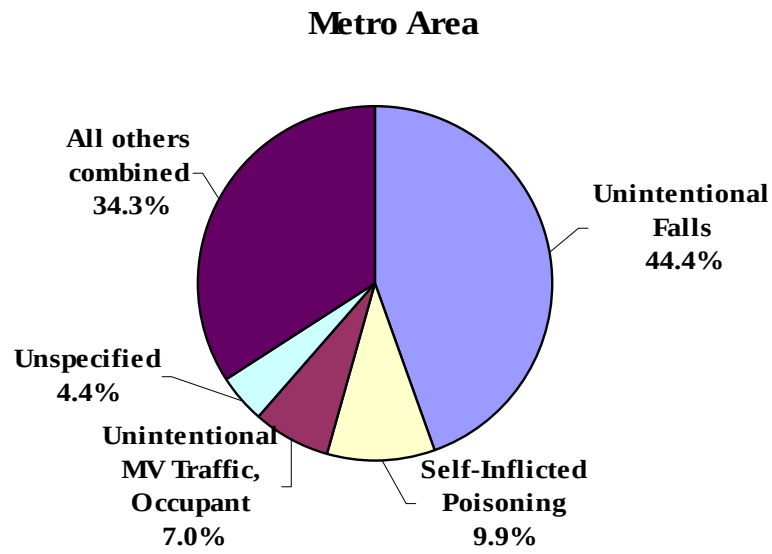
Greater Minnesota Residents More Likely to be Hospitalized From Falling

- In 2001, unintentional falls were the leading cause of non-fatal hospitalized injuries in Minnesota. Almost half (48.5 percent) of non-fatal hospitalized injuries in Greater Minnesota are due to unintentional falls, compared to 44.4 percent in the Metro area. See Graph 22.

- The crude rate of non-fatal injury due to falls is higher among female residents living in Greater Minnesota compared to females in the Metro area (1876.6 and 1839.0 per 100,000 respectively). While a higher crude rate reflects the overrepresentation of the elderly population living in Greater Minnesota, it also indicates the added need for senior health services.

Graph 22
Non-Fatal Hospitalized Injury by Cause and Region 2000





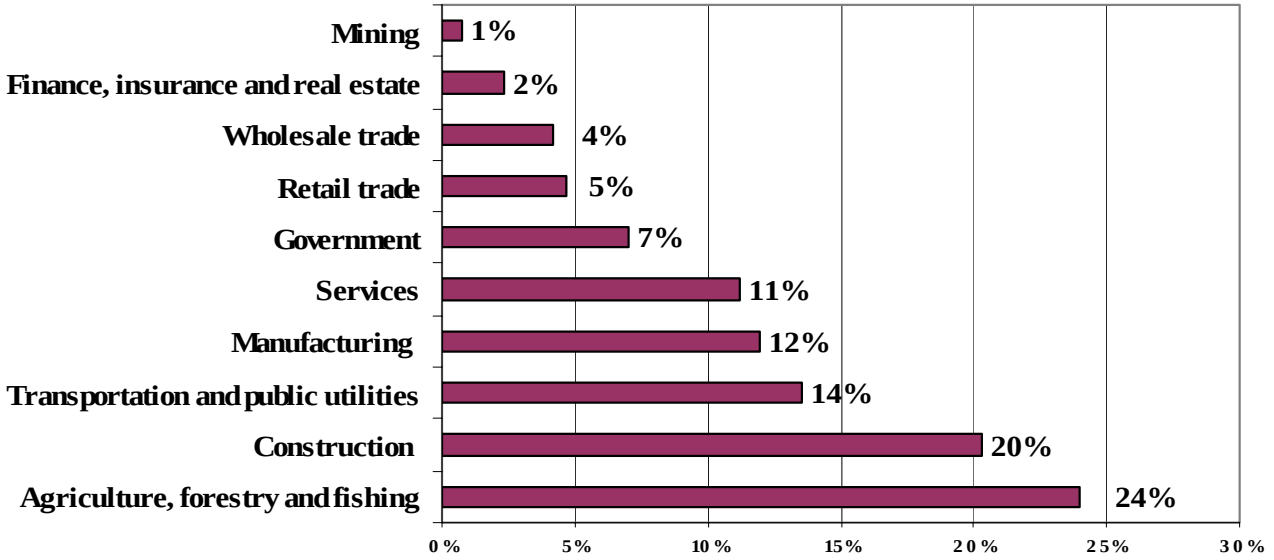
Occupational
Highest Fatalities in Agriculture, Forestry and Fishing Industries

- From 1998 to 2002, the agriculture, forestry and fishing industries in Minnesota accounted for 24 percent of all fatalities (92 of 384 fatalities). See Graph 23.

- Nearly all the fatalities within farming, forestry and fishing occupations were to farmers and farm operators. From 1998 to 2002, farm workers accounted for 16 percent of the fatalities.

- Mining had the lowest number of injury fatalities accounting for only one percent (3 of 384) from 1998 to 2002.

Graph 23
Fatal Work Injuries by Industry, Minnesota 1998-2002



Source: Minnesota Department of Labor and Industry

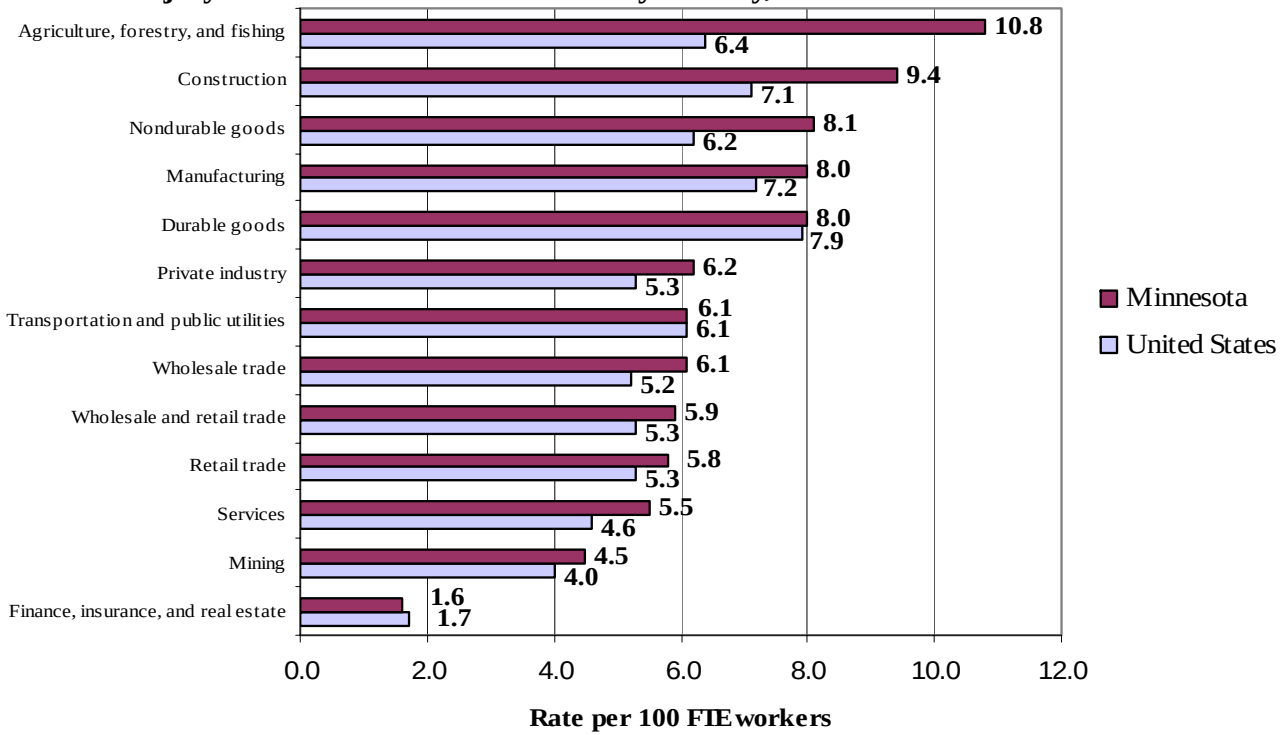
Highest Injury and Illness Rates in Agriculture, Forestry and Fishing

- In 2002, the agriculture, forestry and fishing industries had the highest total injury and illness rates in Minnesota, 10.8 per 100 full-time workers. See Graph 24.

- Minnesota's rates of injury and illness within the agriculture, forestry and fishing industries are higher than the corresponding U.S. rate of 6.4.

Graph 24

Injury and Illness Case Incident Rates by Industry, Minnesota & United States 2002



Source: Minnesota Department of Labor and Industry

Natality/Mortality

The care and nurture of both mother and newborn have proven to be effective public health practices leading to reductions in maternal and infant death. Birth certificates are an essential source of this information. Conditions at birth, such as prematurity and low birth weight, are recorded on birth certificates and used in the evaluation of birth outcomes. Maternal information on birth certificates, such as age, education level, and initiation of prenatal care, can also be measures for determining birth outcome.

Public health concentrates on reducing untimely deaths due to injury or chronic disease, as well as eliminating the disparities that exist among communities. Death certificates contain information often used in calculating rates of mortality within age groups and specific communities. Comparing the rates of mortality and the causes leading to mortality among age groups in rural and urban settings gives the public health community a better understanding of specific health risks. What may be a prevalent cause of death in one age group or region may not be as common in the other. Death records are also analyzed to measure significant disparities in health status among populations. Information from death records is used for health promotion and disease prevention services in specific communities.

Data presented in this section are based on information from vital records filed with the Minnesota Center for Health Statistics (MCHS). Birth and death records have been collected in Minnesota since the early 1900s. In the last 10 years, approximately 65,000 birth certificates and 35,000 death certificates were filed with MCHS each year. Because the vital records system records all births and deaths occurring in the state, it is regarded as the most comprehensive source for analyzing information.

In This Section

Teen Births
Low Birth Weight and Prematurity
Birth by Race/Ethnicity
Prenatal Care
Education Levels of Mothers
Mortality Rates
Leading Causes of Death by age Group
Heart and Stroke Deaths
Unintentional Injury and Suicide Deaths

Source

Minnesota Department of Health - Center for Health Statistics

To Learn More About the Data

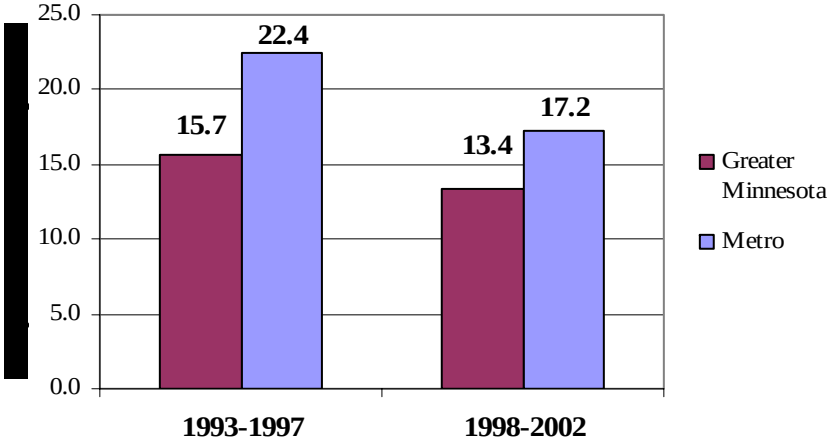
Minnesota Center for Health Statistics:http://www.health.state.mn.us/divs/chs/top_2.htm
National Center for Health Statistics: http://www.cdc.gov/nchs

Teen Births

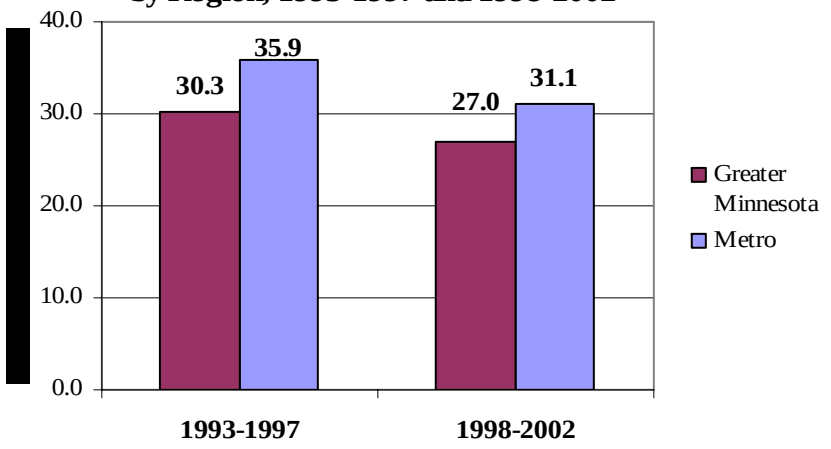
Teen Birth Rates Decrease in Greater Minnesota

- Birth rates for 15- to 17-year-olds have decreased for both the Metro area and Greater Minnesota.
- The 15- to 17-year-old birth rate in Greater Minnesota was lower than the Metro area for both time periods. See Graph 25.
- The birth rates for 15- to 19-year-olds were lower for teenage girls living in Greater Minnesota for both time periods. See Graph 26.

Graph 25
Teen Births, 15-17-Year-Olds
by Region, 1993-1997 and 1998-2002



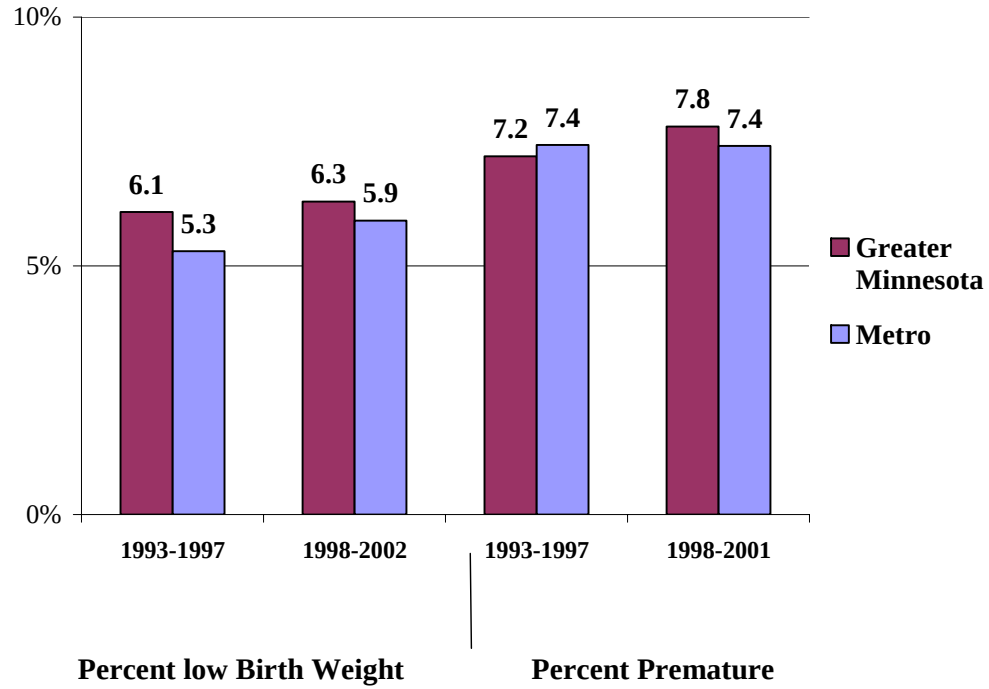
Graph 26
Teen Births, 15-19-Year-Olds
by Region, 1993-1997 and 1998-2002



Low Birth Weight/Prematurity
Little Change in low Birth Weight and Premature Births

- Pre-term delivery and low birth weight are closely associated with poor birth outcomes. Babies delivered too early often have not achieved normal weight and may not have completed normal fetal development.
- Low birth weight and the percent of premature births has changed very little from 1993-1997 to 1998-2002, with very little differences between Greater Minnesota and the Metro area. See Graph 27.

Graph 27
Low Birth Weight and Premature Births
by Region, 1993-1997 and 1998-2002

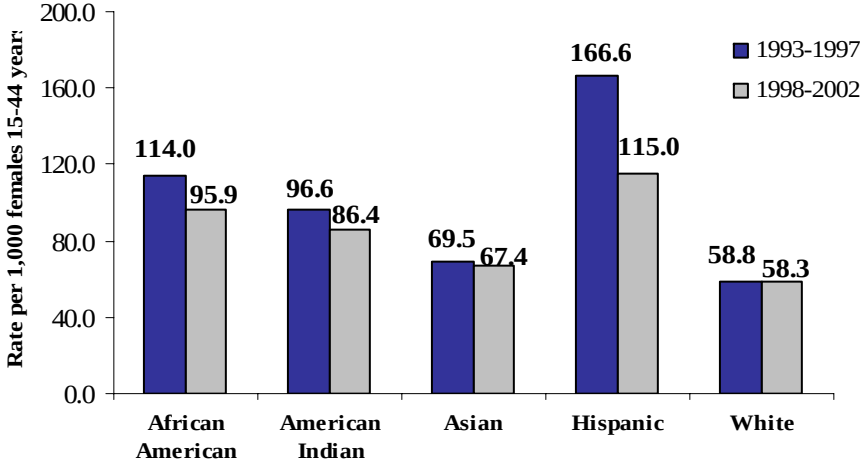


Birth by Race/Ethnicity
Birth Rates Decrease in Greater Minnesota

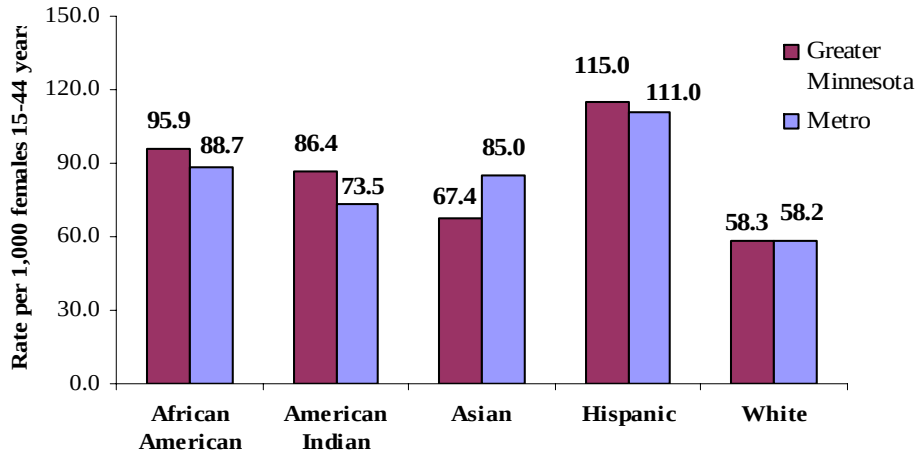
- Birth rates decreased from 1993-1997 to 1998-2002 in Greater Minnesota. The birth rate for Hispanics is over twice the rate of Whites. See Graph 28.

- The 1998-2002 birth rates by race and ethnicity for Greater Minnesota and the Metro area are similar. The rates for African Americans and American Indians and Hispanics are slightly higher in Greater Minnesota than the Metro area. See Graph 29.

Graph 28
Birth Rates, 15-44-Year-Olds in Greater Minnesota
1993-1997 and 1998-2002



Graph 29
Birth Rates, 15-44-Year-Olds by Race and Region
1998-2002



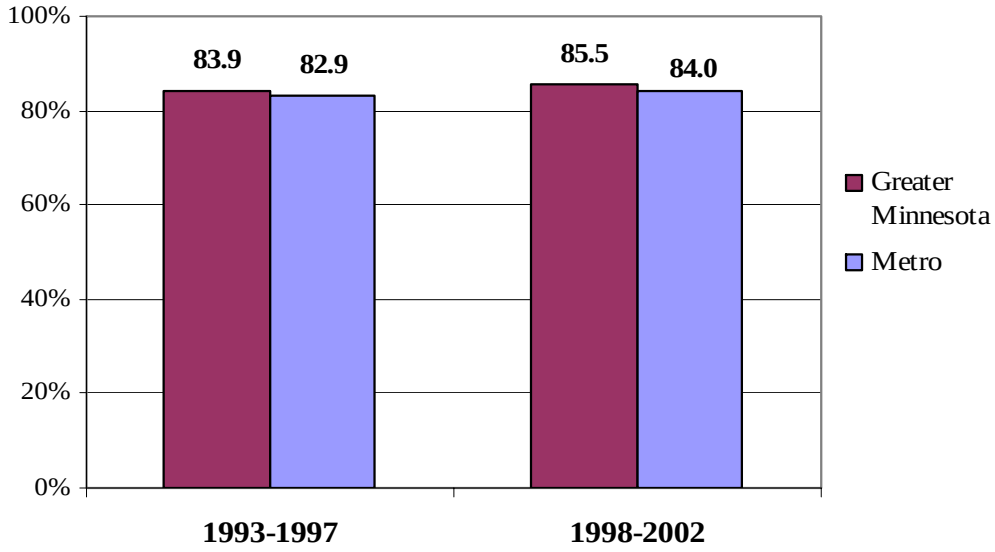
Prenatal Care

Slightly More Prenatal Care in Greater Minnesota

- Adequate prenatal care can improve birth outcomes. *Healthy Minnesotans 2004* has set the goal for 90 percent of all pregnant women to seek prenatal care in their first trimester. http://www.health.state.mn.us/divs/chs/phg/intro.html

- From 1998 to 2002, 85.5 percent of pregnant women in Greater Minnesota received prenatal care compared to 84 percent of women in the Metro area. The percent of women who received prenatal care in the first trimester increased slightly for both regions. See Graph 30.

Graph 30
Prenatal Care Initiated in the First Trimester, by Region 1993-1997 and 1998-2002



Mother's Education

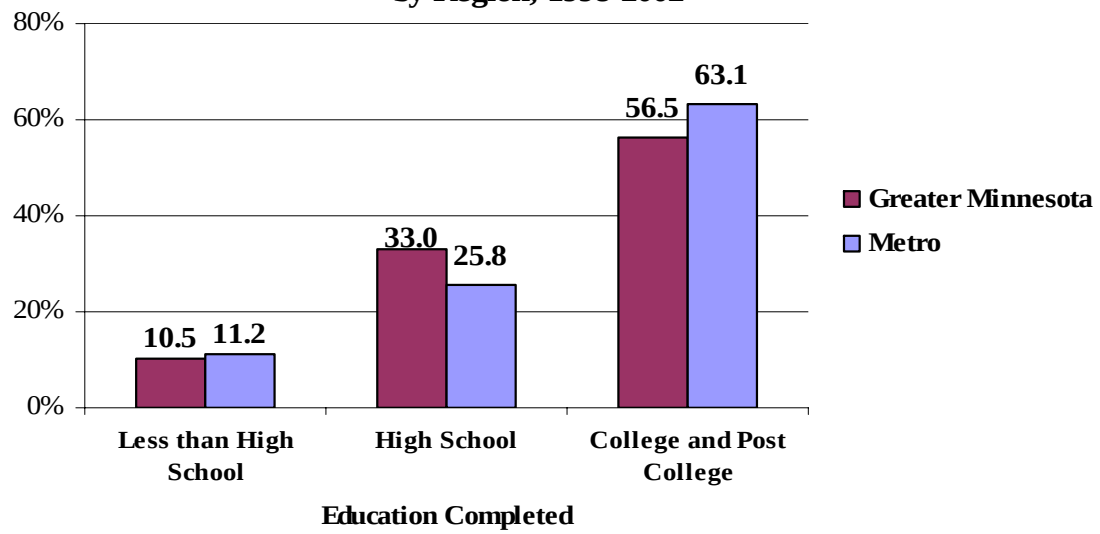
Most Women Giving Birth in Greater Minnesota Have 12 Years Education

- A larger proportion of mothers in Greater Minnesota attained 12 years of school compared to women giving birth in the Metro area. See Graph 31.

- Fewer mothers in Greater Minnesota have college or post college educations compared to mothers living in the Metro area. See Graph 31.

- Adverse birth outcomes are associated with lower levels of education (less than 12 years) among mothers, according to research studies from the Centers for Disease Control.

Graph 31
Educational Status of Mothers by Region, 1998-2002

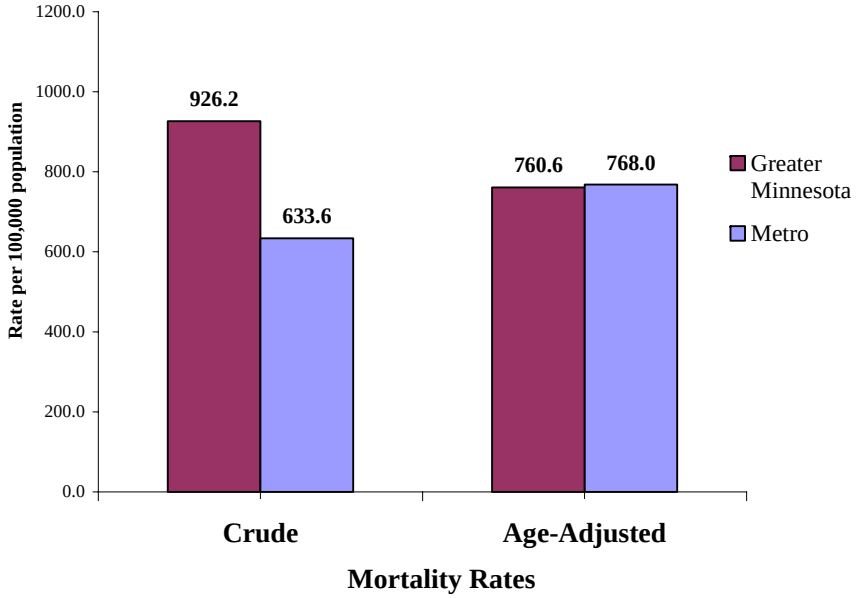


Crude and Age-adjusted Mortality Rates
Crude Mortality Rates Higher in Greater Minnesota

- There is a real and statistically significant difference in the crude mortality rates between Greater Minnesota and the Metro area. The crude mortality rate is higher in Greater Minnesota because the elderly (65+ years of age) are overrepresented and the risk of dying increases dramatically in this population. See Graph 32.

- There are not significant differences in the overall mortality rate between Greater Minnesota and the Metro area when the statistics are adjusted for age. The age-adjusted death rate for Greater Minnesota is 760.6 compared to 768.0 for the Metro area. Age adjustment removes the influence of age when comparing the mortality rates between a predominately older community and a community made up of families with young children. See Graph 32.

Graph 32
Crude and Age-Adjusted Mortality Rates
by Region, 1998-2002



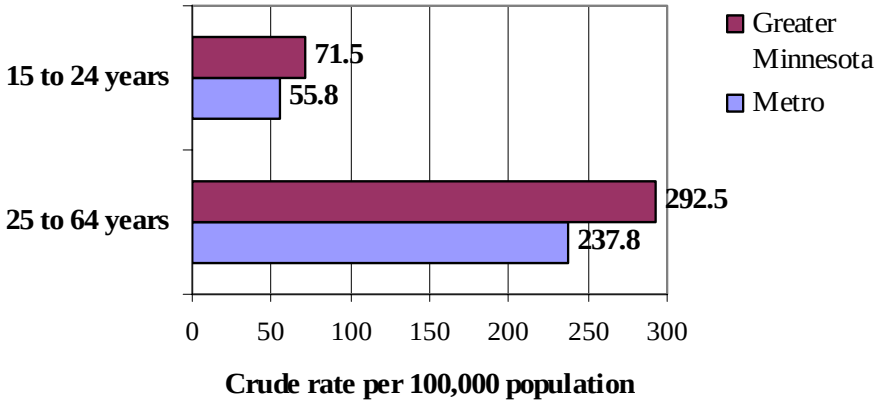
Mortality Rates by age Group

Mortality Rates for Non-Elderly Higher in Greater Minnesota

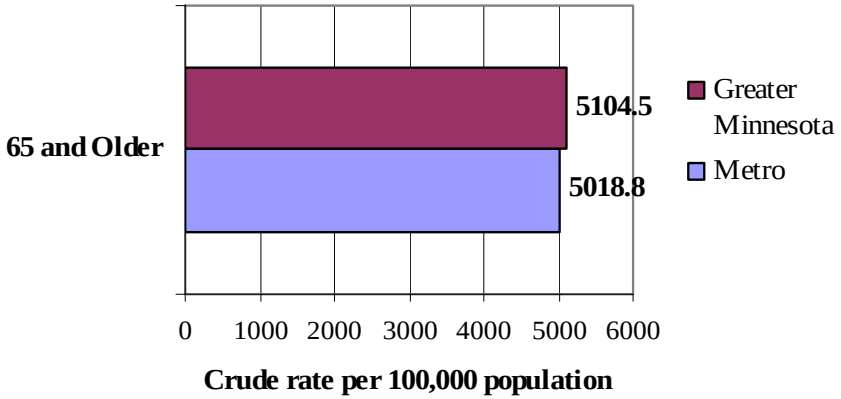
- In the 1998-2002 time period, greater disparities in crude mortality between Greater Minnesota and the Metro area existed in younger age groups. In Greater Minnesota, mortality rates for persons ages 15 to 24 and 25 to 64 exceeded those in the Metro area. See Graph 33.

- Although the relative discrepancy between residents who lived in Greater Minnesota and the Metro area was less pronounced among the older group, death rates among Greater Minnesotans aged 65 and older were slightly higher than the rate among Metro residents. The smaller disparity, regardless of the geographic region, reflects the higher death rates that exist among older persons. See Graph 34.

Graph 33
Overall Mortality by Age Group and Region
1998-2002



Graph 34
Overall Mortality for 65 + year-olds
by Region 1998-2002



Leading Causes of Death

Rates for Five Leading Causes of Death Higher in Greater Minnesota

The five leading causes of death in Minnesota are heart disease, cancer, stroke, unintentional injury and chronic obstructive pulmonary disease. Compared with the Metro area, residents in Greater Minnesota had higher overall crude mortality rates in these leading cause of death categories. See Table A.

Table A
Overall Mortality Rate Comparison by Specific Cause 1998-2002

	Greater Minnesota	Metro Area
All Causes	**926.2**	633.6
Heart Disease	**246.1**	128.6
Cancer	**214.3**	155.7
Stroke	**70.5**	45.4
Unintentional Injury	**44.4**	29.3
Chronic Obstructive Pulmonary Disease (COPD)	**36.3**	26.3

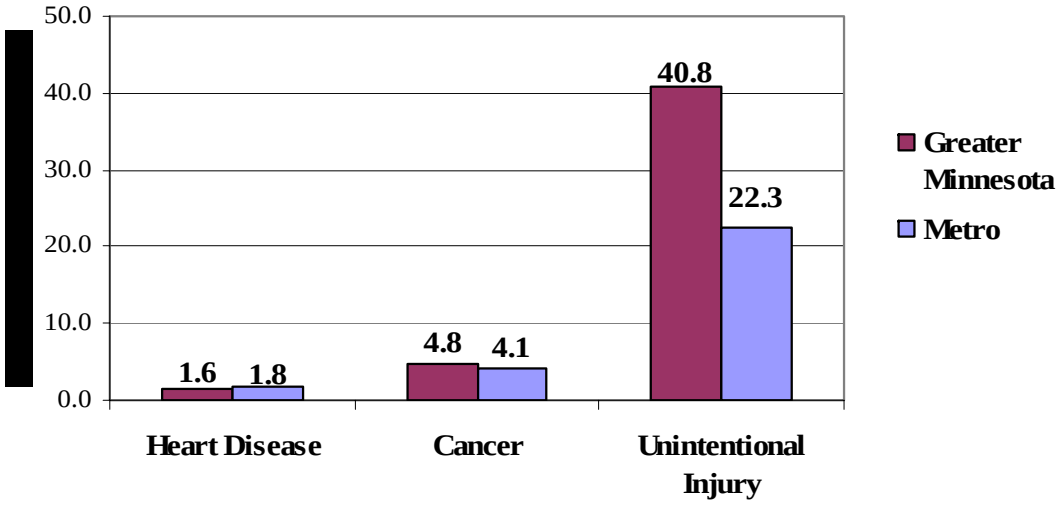
Youth and Leading Causes of Death

Death From Unintentional Injury More Likely for Greater Minnesota Youth

- From 1998 to 2002, unintentional injury was the most common cause of death among 15- to 24-year-olds in both Greater Minnesota and the Metro area. Greater Minnesota residents in this age group had an unintentional mortality rate almost twice as high as Metro residents. See Graph 35.

- Rarely was stroke or Chronic Obstructive Pulmonary Disease found to be a cause of death among 15- to 24-year-olds. From 1998 to 2002, both causes had a crude rate that was less than one per 100,000 in 15- to 24-year-olds.

Graph 35
Mortality Rate Comparison Among 15 to 24-year olds by Cause and Region, 1998-2002

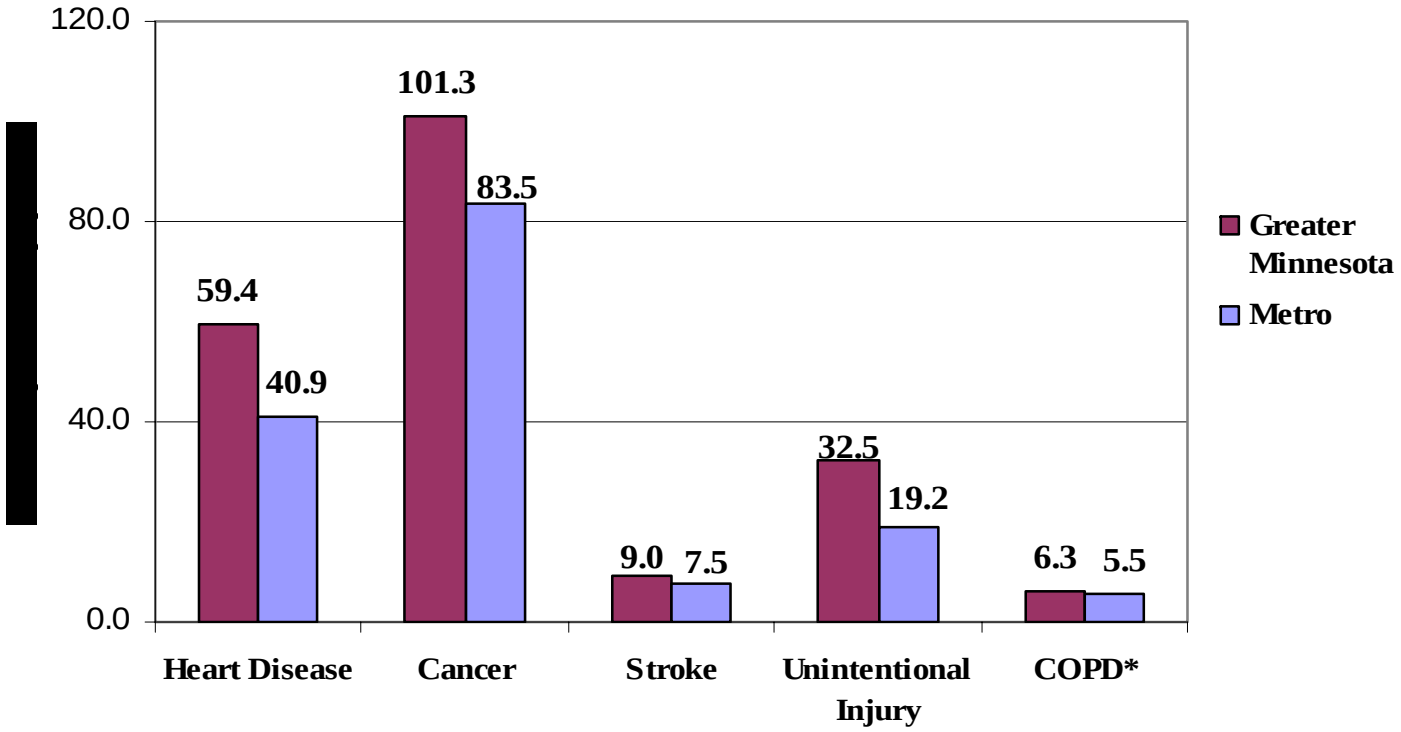


Working-age Adults and Leading Causes of Deaths

Mortality Rates Higher Among Working-Age Adults in Greater Minnesota

Mortality rates for 25- to 64-year-olds were higher in Greater Minnesota compared to residents of the same age in the Metro area. See Graph 36.

Graph 36
Mortality Rate Comparison Among 25-64-Year-Olds by Cause and Region, 1998-2002



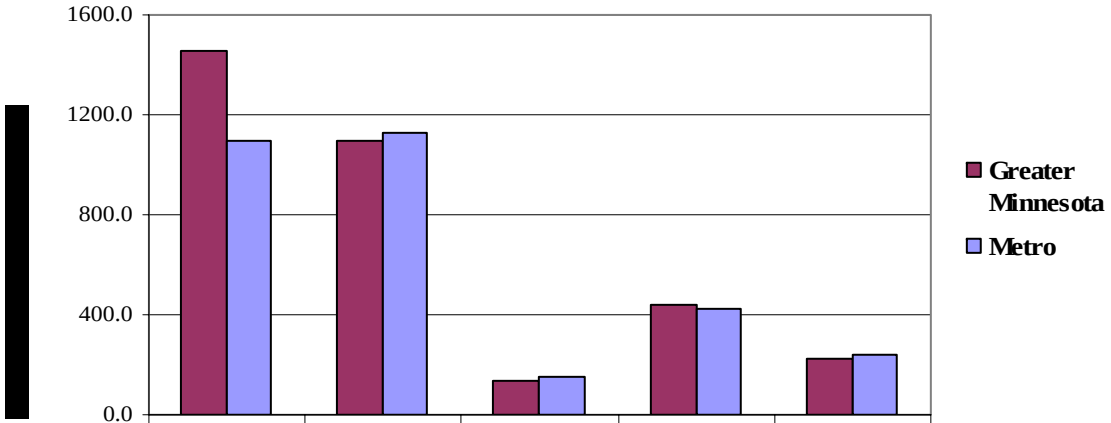
*Chronic Obstructive Pulmonary Disease

Elderly and Leading Causes of Death

Heart Disease and Stroke Mortality Rates Higher for Greater Minnesota Residents Age 65 and Older

Heart disease and stroke mortality rates are higher in Greater Minnesota than in the Metro for residents age 65 and older. Metro residents age 65 and older have higher mortality rates for cancer, unintentional injury and COPD than the residents of Greater Minnesota, although the differences are small.

Graph 37
Mortality Rate Comparison Among 65 + year-olds
by Cause and Region, 1998-2002



	Heart Disease	Cancer	Unintentional Injury	Stroke	COPD*
Greater Minnesota	1452.7	1096.5	134.4	442.7	222.9
Metro	1093.9	1128.4	148.2	425.7	239.8

*Chronic Obstructive Pulmonary Disease

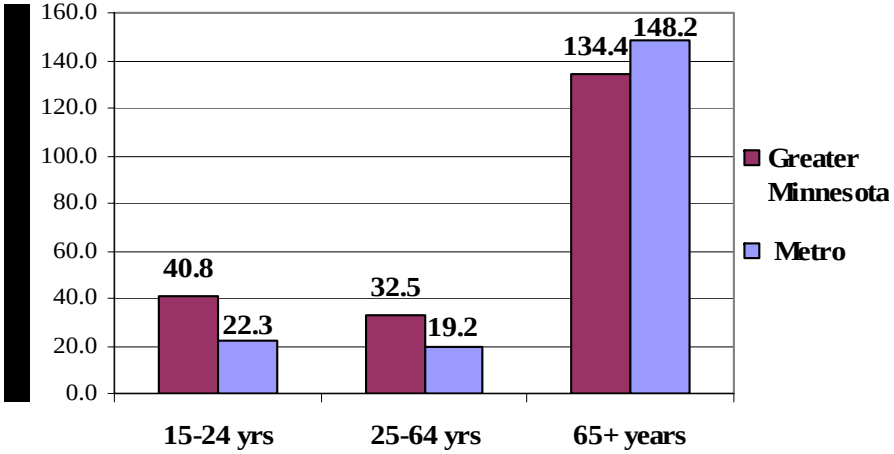
Injury Fatalities
Motor Vehicle Deaths Higher in Greater Minnesota

- In Greater Minnesota, the unintentional injury mortality rates for persons age 15 to 24 and age 25 to 64 exceeded those in the Metro area. See Graph 38.

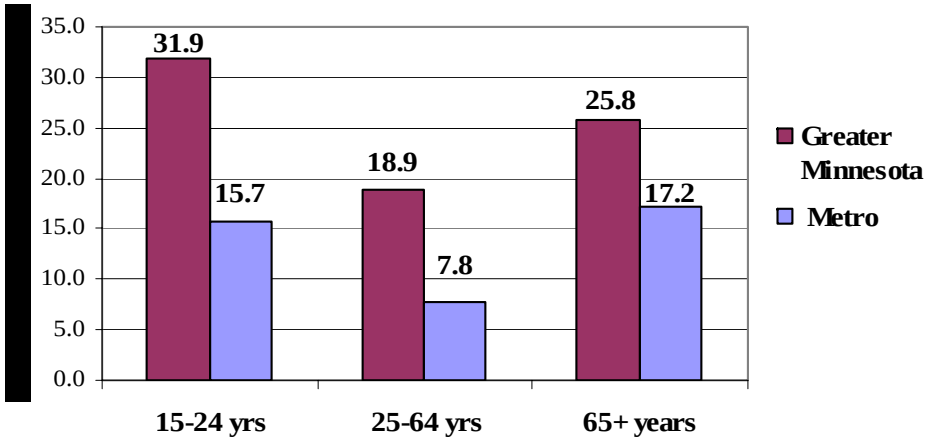
- The highest mortality rates due to unintentional injury exist in the elderly population (65+ years). Metro area elderly have a higher rate of injury mortality compared to elderly residents of Greater Minnesota. See Graph 38.

- Deaths caused by motor vehicle crashes contributed significantly to the higher death rate from unintentional injury for persons in Greater Minnesota. Motor vehicle crash death rates were more than two times higher in Greater Minnesota for the 15- to 24- and 25- to 64-year-old age groups. For people age 65 and older, the mortality rate from motor vehicle crashes was also much higher for residents of Greater Minnesota compared to Metro area residents. See Graph 39.

Graph 38
Unintentional Injury Deaths by age Group and Region 1998-2002



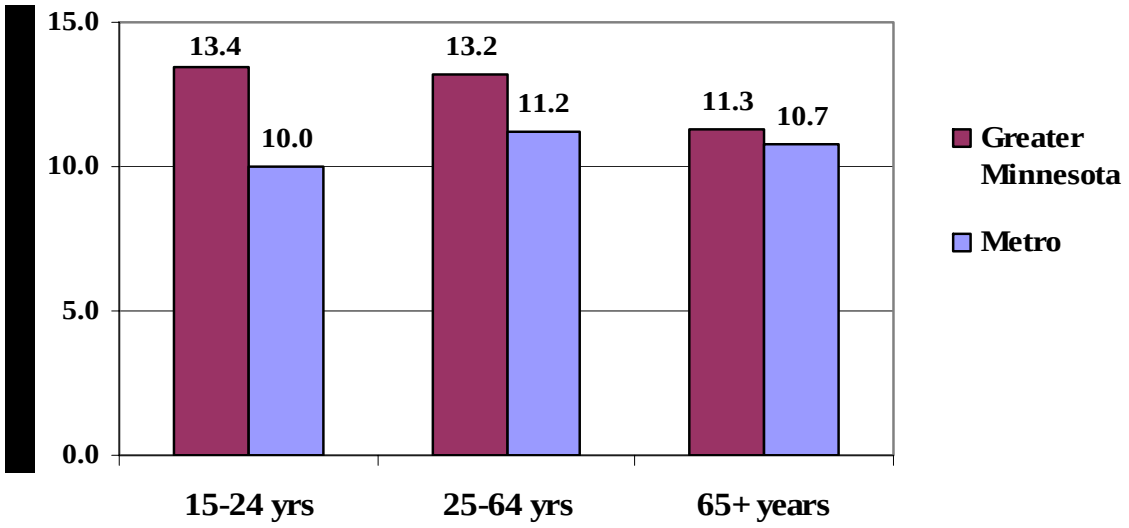
Graph 39
Motor Vehicle Deaths by age Group and Region 1998-2002



Suicide Fatalities
Rate of Suicide Death Higher Among Greater Minnesota Residents

When the cause of death is suicide, Greater Minnesota residents have higher rates compared to Metro residents. From 1998 to 2002, Greater Minnesota had the highest rates of suicide death. See Graph 40.

Graph 40
Suicide Deaths by age Group and Region 1998-2002



Conclusion

This report is intended to create awareness among policymakers and the public about the importance of rural involvement in developing health care policy.

Until recently, most rural health research has focused on measuring the scarcity of health care services in rural areas. This research on access to services has been important in forming policies that strengthen the structure of rural health care; however, presenting the gaps in health status between rural and urban Minnesotans paints a more complete picture. Identifying and documenting the gaps in health status facing rural communities provides a baseline of data, which can be used to evaluate state and local health promotion and disease prevention activities.

Minnesota is frequently ranked as one of the healthiest states in the nation, despite considerable differences in the health of its rural residents. Differences in adolescent smoking rates, adult tooth loss and injury rates from motor vehicle accidents are just a few examples indicating improvements must be made.

When barriers to health services exist—such as distance—adverse health outcomes occur and the health status and well-being of a community's residents are affected. Data from this report can generate provider and community-based interventions that eliminate the causes contributing to these differences.

Ensuring the health care success of Minnesota's rural communities is in everyone's interest.

Glossary of Terms

Age-adjusted Rate – unbiased comparisons not influenced by differences in age distribution in subject populations. Age adjustment is used to reduce the effect of having older individuals in one group (where the risk of mortality is naturally higher) compared to another group that has younger persons. Age-adjusted death rates should only be used for comparative purposes and should not be interpreted as an actual or absolute risk of death. Age-adjusted rates can only be compared to other age-adjusted rates that use the same standard population.

Binge Drinking – a measure of consumption defined as drinking five or more alcoholic beverages on one occasion.

Body Mass Index (BMI) – a measure of body fat that adjusts bodyweight for height. It is calculated by dividing weight in kilograms by height in meters squared. The result is a BMI that falls within one of three categories: healthy weight, overweight or obese. Healthy weight is a BMI of 18.5 to less than 25; overweight is greater than or equal to a BMI of 25; and obese is defined as greater or equal to a BMI of 30. BMI categories for children are defined differently (see Centers for Disease Control Growth Charts at http://www.cdc.gov/growthcharts).

Crude Rate – a calculation where the number of events (such as disease, injury, birth, death) is totaled for a specific period of time and then divided by the size of the population, which is then multiplied by 1,000 or 100,000 for ease of interpretation (e.g., the number of teen births per 1,000 females, 15-17 years of age).

Emergency Department Treated (ED-treated) – an injured person who is treated and released from a hospital emergency room without being admitted as an inpatient to the hospital.

Greater Minnesota – an 80-county region that excludes the seven-county region of Minneapolis-St. Paul (see Metro Area).

Low Birth Weight – defined on birth certificates as less than 2,500 grams or 5 pounds 8 ounces.

Metro Area – the seven-county metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington counties) of Minneapolis-St. Paul.

Premature Birth – a live birth that occurs in less than 37 weeks of pregnancy.

Prevalence – the number of events (such as disease, injury or persons engaging in selected behaviors) that occur during a selected interval of time. Usually expressed as a rate (e.g., the number of motor vehicle injuries per 100,000 population).

Rate – a way of measuring some event, disease or condition occurring in a population, often during a specific time period. The time period and size of population selected are arbitrary, although the population size is usually large enough for the rate to be expressed as a whole number.

Unintentional Injury – an injury that is unintended or unplanned. For example, motor vehicle-related or fire-related injuries typically are considered to be unintentional.

If you require this document in another format, such as large print, Braille or cassette tape, call (651) 282-3838.
TDD users can call (651) 282-3854 or the Minnesota Relay Service at 711 or (800) 627-3529.

MINNESOTA MDH DEPARTMENT OF HEALTH

office of Rural Health & Primary Care
MINNESOTA DEPARTMENT OF HEALTH

CENTER FOR HEALTH STATISTICS
MINNESOTA DEPARTMENT OF HEALTH

P.O. Box 64882 St. Paul, MN 55164-0882
http://www.health.state.mn.us
Printed on recycled paper January 2005