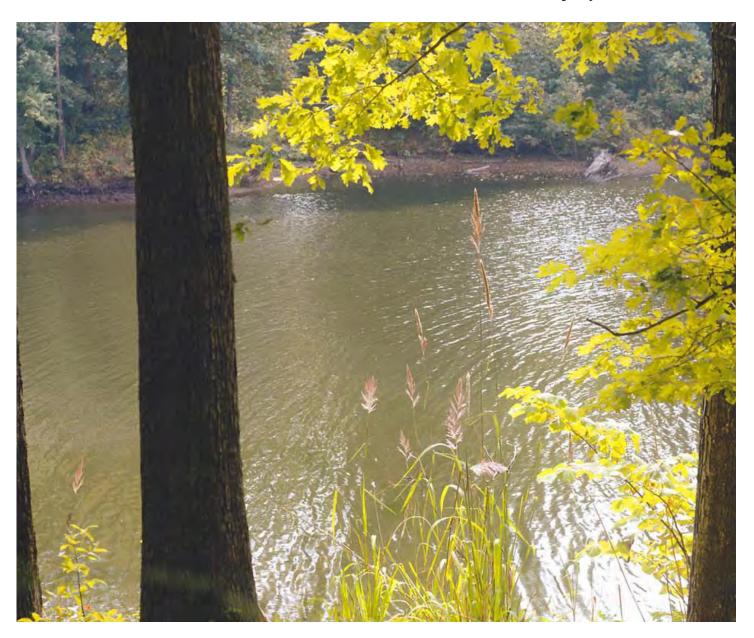
# The Health of Minnesota

**Statewide Health Assessment: Part Two** 

May 2012

Chronic Diseases and Conditions • Infectious Disease • Injury and Violence







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## The Health of Minnesota

## Statewide Health Assessment, Part Two: Disease and Injury

May 2012

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For the electronic version of this document and for *Part One* of the Statewide Health Assessment, visit the Minnesota Department of Health website: <a href="www.health.state.mn.us/statewidehealthassessment">www.health.state.mn.us/statewidehealthassessment</a>. *The Health of Minnesota: Statewide Health Assessment* was produced in collaboration by the Minnesota Department of Health and the Healthy Minnesota Partnership. Partial funding for this project was provided by the following: PHHS Preventive Block Grant No. 2B01DP009029-10; the Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services, through John Snow, Inc. (JSI), July 2011-June 2012; and Cooperative Agreement Number CD10-1011 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of any of the above funding organizations. Upon request, this material will be made available in an alternative format such as large print, Braille or cassette tape.





## Introduction

A statewide health assessment provides an overview of a state's population characteristics, social and economic factors, and health outcomes. The purpose of a statewide health assessment is to collect and analyze data in a way that educates and mobilizes communities to develop health priorities, leverage resources, and plan actions to improve population health. This is accomplished through the systematic collection and analysis of data from a wide range of sources to provide a thorough basis for decision-making, and with the active involvement of partners throughout each step.

The two parts of Minnesota's statewide health assessment present a wide array of indicators and information about statewide influences on health as well as individual indicators of health behaviors and health status:

The Health of Minnesota: Statewide Health Assessment, Part One examines the conditions and factors in Minnesota that create health and provide people in Minnesota with the opportunity to be healthy. These factors include the environment, education, employment, and much more. Part One also looks at individual behaviors like smoking, use of alcohol, and physical activity, which also have an impact on health.

The Health of Minnesota: Statewide Health Assessment, Part Two looks at the lack of health, in the form of rates of death and disability from disease and injury.

The two documents complement each other: without the opportunity to be healthy or the conditions and behaviors that create health, people in Minnesota suffer from many negative health outcomes.

## The Healthy Minnesota Partnership

Minnesota's statewide health assessment was prepared under the auspices of the Healthy Minnesota Partnership, a multi-sector group of community leaders.\* The Partnership is charged with developing innovative public health priorities, goals, objectives and strategies to improve the health of all Minnesotans, and to ensure ownership of these priorities and strategies in communities across the state. *The Health of Minnesota* is the first step toward fulfilling this charge, and provides the basis for creating a Healthy Minnesota 2020 statewide health plan. The Partnership hopes that assessing and addressing a broad array of health-related conditions and factors will change the conversation around health, energize the public, private and nonprofit sectors, and create a groundswell of community efforts to improve health in every Minnesota community.

For information on the public input process, the statewide health assessment framework, and limitations of the assessment, please refer to The Health of Minnesota: Statewide Health Assessment, Part One.

Part Two: Disease and Injury

 $<sup>^</sup>st$  Partners range from state agencies to communities of color, local public health, elected officials, nonprofits, health care providers and the community. For a list of Partnership members, please visit http://www.health.state.mn.us/healthymnpartnership

## **Leading Causes of Death in Minnesota**

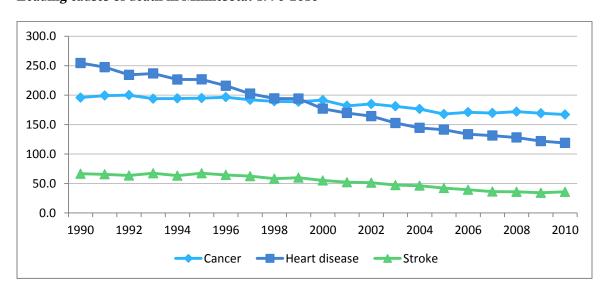
Cancer, heart disease, and stroke are the leading causes of death in Minnesota, although the mortality rate for all three diseases has declined over the past ten years. These three diseases have been the leading causes of death in Minnesota for decades; in 2000, cancer eclipsed heart disease as the leading cause of death in Minnesota.<sup>1</sup>

#### Leading causes of death in Minnesota: 2010

0 1D 1		
Cause of Death	Count	Age-Adjusted Rate *
Cancer	9,599	166.9
Heart Disease	7,144	118.7
Unintentional Injury	2,087	36.4
Stroke	2,154	35.8
Chronic Lower Respiratory Disease	2,012	35.1
Alzheimer's Disease	1,450	23.4
Diabetes	1,036	17.7
Nephritis	895	15.0
Suicide	599	11.1
Pneumonia and Influenza	591	9.7
Cirrhosis	412	7.0
Septicemia	337	5.8
Congenital Anomalies	190	3.6
Perinatal Conditions	140	2.7
Homicide	111	2.1

<sup>\*</sup> Rate per 100,000. Source: Minnesota Department of Health, Center for Health Statistics. (2012).<sup>2</sup>

#### Leading causes of death in Minnesota: 1990-2010



Age-adjusted rate per 100,000. Source: Minnesota Dept. of Health, Center for Health Statistics. (2012).<sup>3</sup>

## **Chronic Diseases and Conditions**

Chronic diseases and conditions persist over a long period of time, over months and years, andes are among the leading causes of death and years of potential life lost in Minnesota. Chronic disease and conditions also significantly contribute to long-term disability and poor quality of life.<sup>4</sup>

#### Alzheimer's Disease

Alzheimer's disease is the most common form of dementia among older adults. It affects a person's ability to think, remember, and make decisions. Adults younger than 65 may get Alzheimer's disease, but it is much less common than among adults over 65; the risk for developing Alzheimer's in any population goes up with age, doubling every five years beyond age 65. About 5 percent of men and women ages 65 to 74 have Alzheimer's disease, and it is estimated that nearly half of those age 85 and older may have the disease. About 94,000 Minnesotans are estimated to have Alzheimer's disease.

#### **Arthritis**

Arthritis is not a single disease, but instead signifies a group of over 100 medical conditions that primary affect the musculoskeletal system, and specifically the joints. Arthritis commonly occurs with other chronic conditions, such as diabetes, heart disease, and obesity. Arthritis affects all age groups, but the likelihood of occurrence increases with age.<sup>6</sup>

Arthritis is a major cause of disability in Minnesota and the U.S., and the third leading cause of work limitation.<sup>7</sup> In 2009, 21 percent of all Minnesotans had been told that they had arthritis, while 45 percent of Minnesotans over age 65 had been told they have arthritis. The proportion of individuals with arthritis decreases with income: nearly 34 percent of Minnesotans with incomes under \$15,000 had even been told they had arthritis, compared to just 16 percent of Minnesotans with incomes over \$50,000.

#### Minnesotans with arthritis: 2009

Yearly Income	With Arthritis	Without Arthritis
Less than \$15,000	33.6 %	66.4 %
\$15,000 - \$24,999	29.6 %	70.4 %
\$25,000 - \$34,999	24.8 %	75.2 %
\$35,000 - \$49,999	27.5 %	72.5 %
\$50,000 and above	15.7 %	84.3 %

Source: Centers for Disease Control and Prevention. (2010). 8

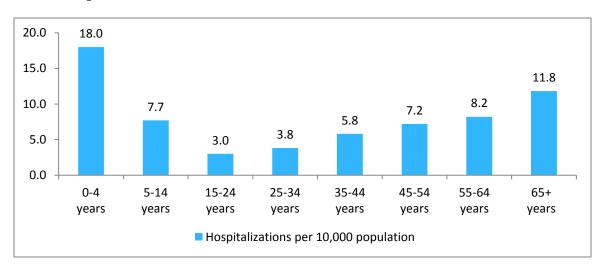
## **Asthma**

Asthma is a chronic respiratory disease affecting the lungs and bronchial tubes. Approximately 392,000 Minnesotans currently have asthma, including about 90,000 children.<sup>9</sup>

The majority of problems associated with asthma are preventable, including hospitalization. Asthma attacks can be triggered by viral infections, pollen, dust mites, secondhand smoke, mold, air pollution, and stress. Asthma prevention includes control of exposure to factors that trigger exacerbation, appropriate medication use, continual monitoring of the disease, and patient education in asthma care. Hospitalizations due to asthma are an indicator both of the severity of the disease and of barriers to regular asthma care (e.g., lack of health insurance).

#### Asthma hospitalizations in Minnesota: 2009

Minnesota's youngest children are hospitalized for asthma at a higher rate than other age groups.



Source: Minnesota Department of Health. (2011). 10

#### Daily asthma hospitalizations Minnesota: 2009



Source: Minnesota Department of Health, Health Promotion and Chronic Disease Division. (2012). 11

#### **Cancer**

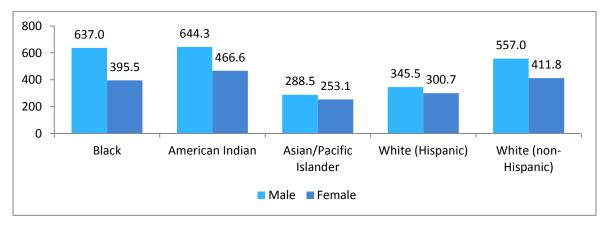
Cancer is currently the leading cause of death in Minnesota. The American Cancer Society estimates that there were over 25,000 new cases of cancer in 2010 and 9,200 deaths. About half of Minnesota's men and 40 percent of the state's women will be diagnosed with a potentially

serious form of cancer during their lifetimes. The lifetime risk of developing cancer is somewhat higher in Minnesota because life expectancy in the state is higher, and therefore more people live to develop cancer. The most commonly diagnosed cancers in Minnesota include lung cancer, colorectal, breast and prostate cancer. 12

According to the American Cancer Society, the risk of death from cancer is influenced by poverty more than by race. <sup>13</sup> People in poverty are more likely to smoke and to be obese, two major risk factors for cancer. In addition, poverty may expose people to unhealthy environments, limit awareness of health promotion messages and access to cancer screening, and lead to seeking medical care at a later stage of illness, when treatment options are limited and the potential for death is much higher.

In Minnesota, overall cancer incidence and mortality are highest among American Indians and African-Americans, and lowest among Hispanic and Asian-Pacific Islander populations. <sup>14</sup> Raceand ethnicity-specific cancer rates in Minnesota are very similar to national rates, save for among American Indians—among American Indians in Minnesota, cancer incidence and mortality is twice as high as in the rest of the U.S. Despite higher poverty rates among Hispanics and Asian-Pacific Islanders, their cancer rates tend to be considerably lower than among non-Hispanic whites. However, their risk for stomach and liver cancers, two of the most deadly cancers, are considerably higher. <sup>15</sup>

#### Cancer\* in Minnesota: 1999-2008



\* Incidence calculated for all types of cancer combined. Source: Minnesota Department of Health (2011). 16

#### **Breast Cancer**

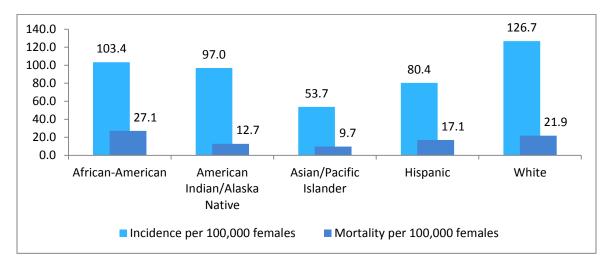
Breast cancer is the most common form of cancer and the second leading cause of cancer deaths among Minnesota women. Surviving breast cancer is directly related to the stage of the disease at the time of diagnosis.<sup>17</sup> African-American and Hispanic women in Minnesota are more likely to be diagnosed with later-stage breast cancer.

As in the rest of the U.S., Minnesota's women of color are slightly less likely than white women to be diagnosed with breast cancer, but African-American women are at the greatest risk of dying from the disease. In fact, breast cancer mortality among African-American women is 24 percent higher than white women, despite the incidence of breast cancer among African-American women being 18 percent lower. <sup>18</sup> This population's higher rate of mortality can clearly be partially attributed to later stage diagnosis. <sup>19</sup>

Cancer and cancer-related mortality in Minnesota both occur at rates similar to those in the rest of the U.S. However, the disparity in both measures between the state's white and American Indian populations is twice as high as that in the rest of the U.S.

#### Breast cancer in Minnesota women: 2003-2007

Breast cancer mortality is highest in the state's African-American population.

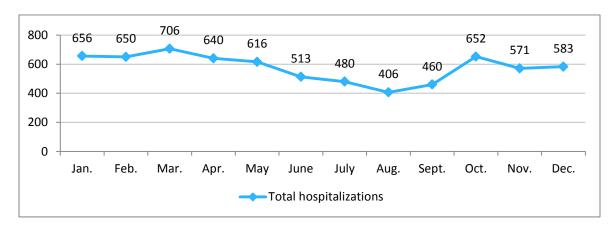


Source: American Cancer Society. (2011).<sup>20</sup>

## **Chronic Obstructive Pulmonary Disease**

Chronic obstructive pulmonary disease, or COPD, is a group of slowly progressive lung diseases (such as emphysema and chronic bronchitis) characterized by obstruction to air flow that interferes with normal breathing. The most common cause of COPD is exposure to tobacco smoke, but not all smokers develop COPD. In Minnesota in 2009, 1,771 people died from COPD;<sup>21</sup> nearly all deaths from COPD occur among adults age 25 and older. While COPD is preventable and treatable, the effects of COPD are not fully reversible.

#### COPD hospitalizations in Minnesota: 2009



Source: Minnesota Department of Health, Health Promotion and Chronic Disease Division. (2012).<sup>22</sup>

COPD may be exacerbated by certain environmental exposures, such as smoke, dust mites and mold, and dirty furnace air filters. Because of sensitivity to these environmental factors, hospitalization for COPD varies by time of year. Admissions are highest during the fall and winter months, when people are indoors, and lower in the summer.

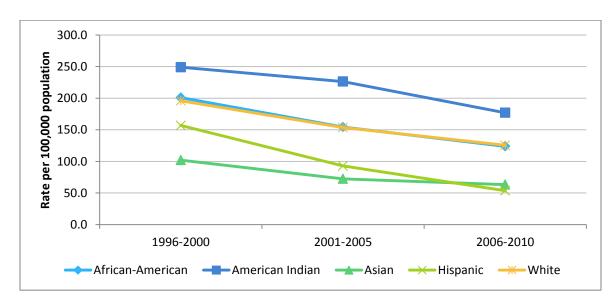
#### **Heart Disease and Stroke**

#### **Heart Disease**

Heart disease currently is the second leading cause of death in Minnesota. Minnesota consistently has one of the lowest rates of heart disease mortality in the nation—about 30 percent lower than the national average.

Between 1996 and 2010 the mortality rate for heart disease declined in all race/ethnicity groups, for both men and women. Heart disease death rates are higher in men than in women, for all racial and ethnic groups.

#### Heart disease-related death in Minnesota: 1996-2010



Disparities in rates of heart disease persist in Minnesota, despite the fact that overall rates have fallen across all races and ethnicities in the state.

	1996-2000	2001-2005	2006-2010
African-American	200.9	154.3	123.8
American Indian	248.9	226.3	177.0
Asian	102.0	72.4	63.3
Hispanic	156.9	92.8	53.6
White	195.9	153.5	125.5

Source: Minnesota Department of Health, Heart Disease and Stroke Prevention Unit. (2011).<sup>23</sup>

As with cancer, heart disease mortality rates differ between races and ethnicities—most notably, American Indians have a much higher rate of heart disease-related mortality than other races and ethnic groups in the state. Heart disease rates also vary by geography; Minnesota's rural residents experience higher rates of heart disease-related mortality.

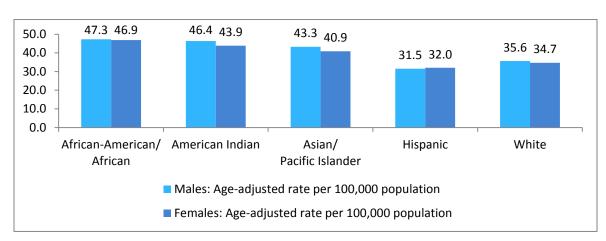
#### **Stroke**

Stroke is a major cause of death in Minnesota. In 2010, approximately 1.9 percent of adults in the state reported ever having had a stroke in their lifetime—a total of over 75,000 people. <sup>24</sup>

Stroke kills more women than men, and is disproportionately fatal for individuals over the age of 75. Compared to the non-Hispanic white population, mortality due to stroke is significantly higher for the African-American, American Indian and Asian populations in Minnesota. As with heart disease, stroke mortality rates are higher in the rural areas of Minnesota.

#### Stroke death in Minnesota: 2006-2010

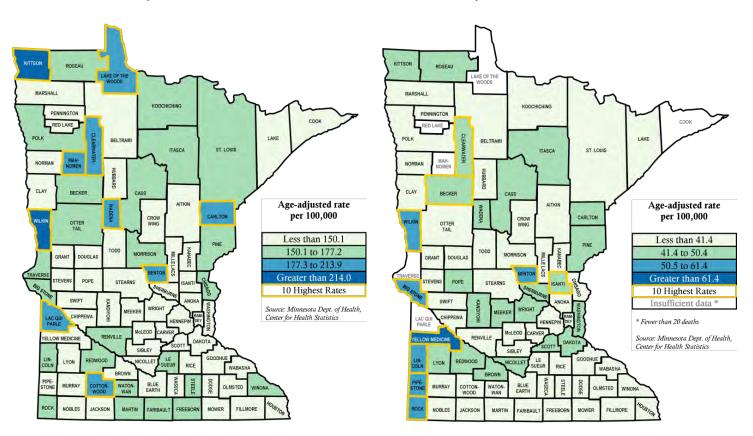
Minnesota's
AfricanAmerican,
American Indian,
and Asian
populations have
the highest rates
of stroke-related
mortality.



Source: Minnesota Department of Health, Center for Health Statistics. (2011).<sup>25</sup>

#### Heart disease mortality in Minnesota: 2005-2009

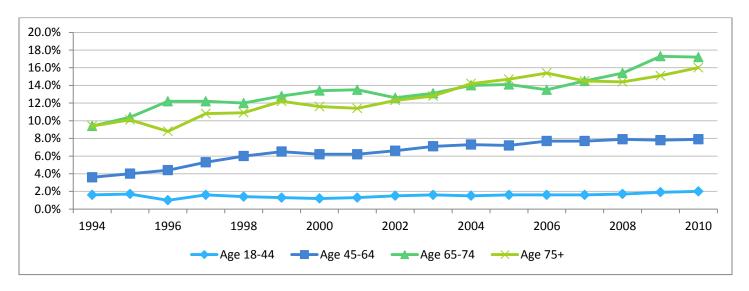
#### Stroke mortality in Minnesota: 2005-2009



#### **Diabetes**

Diabetes is a leading cause of death in Minnesota, and is on the rise. It is the leading cause of blindness in adult Minnesotans, the leading cause of chronic kidney disease among the same group, and the leading complication among mothers giving birth in the state. Diabetes limits daily activities, increases the incidence of heart disease and stroke, and contributes to depression.<sup>26</sup>

#### Minnesotans with diabetes: 1994-2010



	1994	1996	1998	2000	2002	2004	2006	2008	2010
Age 18-44	1.6%	1.0%	1.4%	1.2%	1.5%	1.5%	1.6%	1.7%	2.0%
Age 45-64	3.6%	4.4%	6.0%	6.2%	6.6%	7.3%	7.7%	7.9%	7.9%
Age 65-74	9.4%	12.2%	12.0%	13.4%	12.6%	14.0%	13.5%	15.4%	17.2%
Age 75+	9.4%	8.8%	10.9%	11.6%	12.3%	14.2%	15.4%	14.4%	16.0%

Source: Centers for Disease Control and Prevention (CDC). (2011).<sup>27</sup>

Obesity and being overweight are the primary risk factors for diabetes. The growing burden of diabetes affects everyone in Minnesota, but disproportionately affects people of color and American Indians. The death rate from diabetes is nearly five times as high for the American Indian population in Minnesota as for the state's white population. <sup>28</sup>

## **Mental Illness**

Serious mental illness, such as schizophrenia, schizoaffective disorder, and bipolar affective disorder, can significantly increase mortality. Individuals with serious mental illness die an average of 25 years earlier than those without.<sup>29</sup> This holds true in Minnesota, as well: a study of Minnesotans receiving services through Minnesota Health Care Programs found that Minnesotans with serious mental illness do not live past an average age of 58, while those without mental illness live to an average age of 82.30

On average, Minnesotans with serious mental illness do not live past 58, while those without mental illness live to 82.

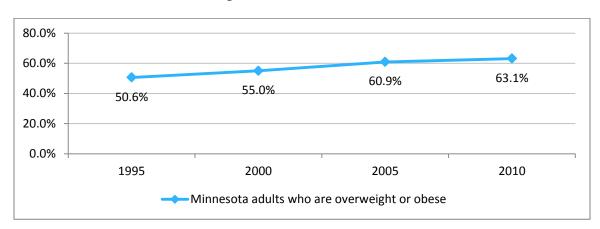
Serious mental illness has other important influences on health: individuals with serious mental illnesses are more likely to experience homelessness, uninsurance, and a lack of social support. The difficulty of changing behaviors such as smoking or alcohol use in persons with serious mental illnesses is compounded by their mental status and these life circumstances. Over 8 percent of Minnesota's adult population—or about 350,000 Minnesotans—experienced significant depressive symptoms in 2011; and 3 percent (about 125,000) had symptoms of suggestive of serious psychological distress (although these groups are not mutually exclusive). 31

## **Obesity**

The rate of obesity continues to rise in every racial and ethnic population in Minnesota, as well as among children, adolescents, and adults, and among both males and females. Minnesota is neither the most obese state in the nation nor is it the slimmest. Minnesota is ranked the 32<sup>nd</sup> most obese state in the nation.<sup>32</sup>

#### Minnesota adults who are overweight or obese: 1995-2010

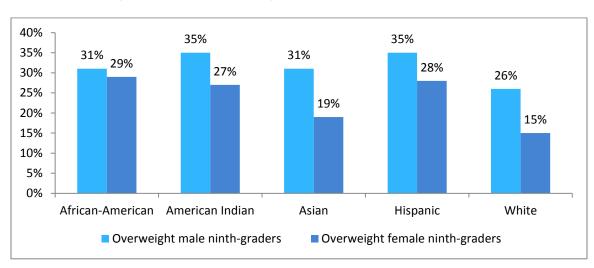
Minnesotans have grown increasingly overweight and obese over the past 15 years.



Source: Centers for Disease Control and Prevention. (2011).<sup>33</sup>

#### Minnesota ninth-graders who are overweight or obese: 2010\*

Teen boys in Minnesota are more likely to be overweight and obese than teen girls.



<sup>\*</sup> Based on self-reported height and weight. Source: Minnesota Department of Health, Center for Health Statistics. (2011).<sup>34</sup>

Obesity puts people at much greater risk for the development and early onset of a wide variety of chronic diseases and health conditions, including hypertension, diabetes, coronary heart disease and stroke, gallbladder disease, depression, osteoarthritis, sleep apnea, and some cancers.<sup>35</sup> Obesity often has social consequences, as well: children and adolescents who are overweight or obese may be teased or ostracized, and obese adults can face discrimination in the workplace.

Because of its link to so many serious health conditions, obesity significantly raises health care costs. According to a recently published study, in 2009 Minnesota paid an estimated \$2.8 billion in state funds for obesity-related Medical Assistance (Medicaid) and Medicare costs. The report estimated that expenditures for these programs would be about 9 percent lower if all obese Minnesotans were normal weight.<sup>36</sup>

#### Minnesota children aged two to five enrolled in WIC\* who are overweight or obese: 2009

Race/Ethnicity	Overweight (85 <sup>th</sup> to 94 <sup>th</sup> percentile)	Obese (95 <sup>th</sup> percentile and above)
White, non-Hispanic	16.0	10.0
Black, non-Hispanic	14.7	12.0
Hispanic	18.2	17.7
American Indian	23.2	27.7
Asian and Pacific Islander	17.0	15.8
Multiple Races	18.5	13.1

<sup>\*</sup> WIC is the Special Supplemental Nutrition Program for Women, Infants, and Children, administered by the U.S. federal government. Source: Centers for Disease Control and Prevention. (2009).<sup>37</sup>

## **Infectious Disease**

Infectious diseases are a significant cause of illness, disability, and death in Minnesota. Infectious diseases are illnesses caused by organisms such as bacteria, viruses, fungi, or parasites. Some infectious diseases can be passed from person to person, some are transmitted via bites from insects or animals, and others are acquired by ingesting contaminated food or water or other exposures in the environment.

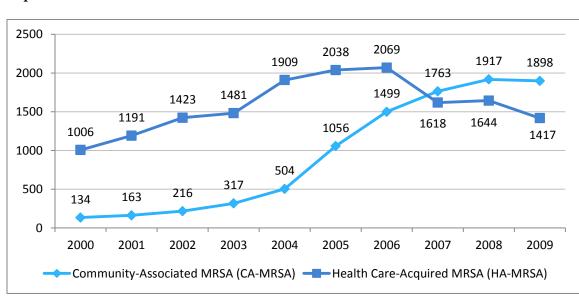
## **Antibiotic-Resistant Infections**

Antibiotics are powerful medicines developed to inhibit the growth and reproduction of bacteria, which makes them critical in combatting bacterial infections. The first antibiotic was introduced in the 1940s, and more than 100 different antibiotics are available today to cure a variety of infections from skin infections to life-threatening blood infections. However, the overuse and inappropriate use of antibiotics have led to antibiotic-resistant infections, which threatens to make many infections untreatable.

Bacteria that develop resistance against more than one antibiotic are called multidrug-resistant bacteria. Infections caused by these bacteria include extremely drug resistant tuberculosis (XDR-TB) and carbepenem-resistant *Enterobacteriaceae*, both of which are resistant to nearly all currently available antibiotics.

#### Reported MRSA cases in Minnesota: 2000-2009 \*

The number of community-associated MRSA infections (CA-MRSA) in Minnesota has increased at a rapid rate since 2000.



<sup>\*</sup>Reported at 12 sentinel sites. Source: Minnesota Department of Health, Emerging Infections Unit. (2012). 38

One particular infection is caused by *Staphylococcus aureus* (more commonly known as "staph"). Strains of *S. aureus* that are multidrug resistant are referred to as *methicillin-resistant S. aureus* (or MRSA). There are two main types of MRSA. The first type is referred to as healthcare-associated MRSA (HA-MRSA) that is associated with people who have been hospitalized, had surgery, lived in a nursing home, or had an indwelling device in the year before the infection. The second

type is referred to as community-associated MRSA (CA-MRSA) where the infection develops in healthy, younger people who do not have those traditional healthcare-associated risk factors, but have likely acquired the disease in a community, recreational, or educational setting.

Monitoring of the number of MRSA infections reported from 12 sentinel sites across the state revealed a substantial increase in the number of CA-MRSA infections between 2000 and 2009, and a decrease in the number of HA-MRSA infections during the same time period.

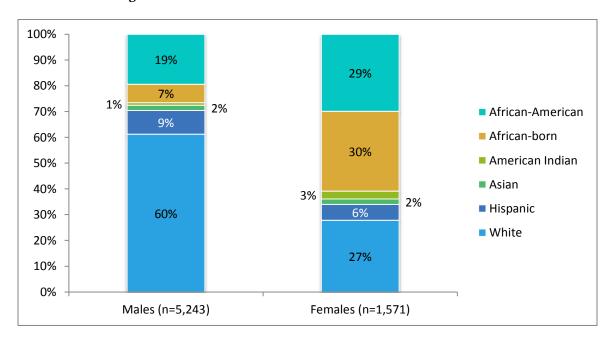
#### **HIV and AIDS**

The number of persons assumed to be living with HIV (human immunodeficiency virus) and AIDS (acquired immune deficiency syndrome) in Minnesota has been steadily increasing during the past 30 years. As of 2010, almost 7,000 persons were known to be living with HIV/AIDS in Minnesota, a 4 percent increase from the year prior.

Both the number of newly-diagnosed AIDS cases and the number of deaths among AIDS cases declined between 1996 and 2000. These decreases were primarily due to the success of new treatments introduced in 1995 (protease inhibitors) and 1996 (highly active antiretroviral therapy). These treatments do not cure AIDS, but can delay progression of the disease and improve survival.

Three-fourths of the cases of HIV/AIDS in Minnesota occur among males. Of those diagnosed with HIV/AIDS, nearly two-thirds are white. Only about one-fourth of Minnesota women with HIV/AIDS, however, are white; nearly 30 percent are African-American and 30 percent are African-born.

#### Minnesotans living with HIV/AIDS: 2010



Two-thirds of Minnesota men living with HIV/AIDS are white, while twothirds of Minnesota women living with HIV/AIDS are African-American or African-born.

Source: Minnesota Department of Health, Infectious Disease Epidemiology, Prevention and Control Division. (2010).<sup>39</sup>

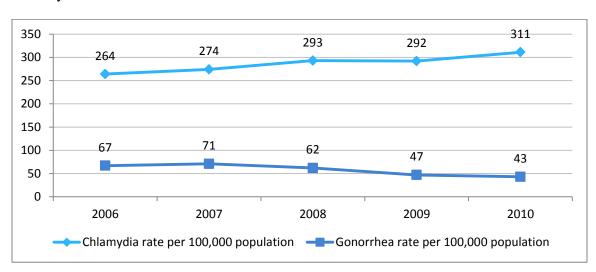
## **Sexually Transmitted Infections**

Sexually transmitted infections (STIs), also known as sexually transmitted diseases, are the most commonly reported communicable diseases in Minnesota, and account for nearly 70 percent of all notifiable diseases reported to the Minnesota Department of Health. In 2010, the number of reported bacterial STIs increased to nearly 18,000 cases, a 5 percent increase from the previous year. The majority of those (over 15,000) are cases of chlamydia. Since 1996, the rates of chlamydia in Minnesota have more than doubled. Changes in STI incidence varied by disease, with chlamydia increasing by 6 percent, primary/secondary syphilis increasing by 110 percent and gonorrhea decreasing by 9 percent.

Youth and young adults between 15 and 24 are much more likely to contract both chlamydia and gonorrhea: they comprise 69 percent of all chlamydia cases and 65 percent of all gonorrhea cases reported in 2010. Three-fourths of these cases are young women.

#### Sexually transmitted infections in Minnesota: 2006-2010

Rates of chlamydia continue to climb in Minnesota.



Source: Minnesota Dept. of Health, Infectious Disease Epidemiology, Prevention and Control Division. (2011).<sup>40</sup>

Significant disparities exist in the incidence of STIs among racial/ethnic groups in Minnesota. The state's African-American population is almost 15 times more likely to have chlamydia than Minnesota's white population. Other populations of color in Minnesota are three to five times more likely to have chlamydia than the state's white population. The rate of gonorrhea among the state's African-American population is 34 times higher than that of the state's white population, and rates of syphilis have also disproportionately increased among African-American's in the state, at almost five times that of the white population.

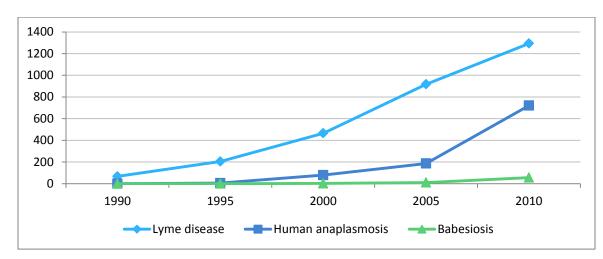
## **Tick-Transmitted Disease**

Minnesota is a state that prides itself on its natural resources, and many Minnesotans participate in outdoor activities that put them at risk for the diseases carried by insects. Minnesota tick-borne disease case numbers have increased substantially in recent years. In 1990 there were 67 cases of Lyme disease and none of babesiosis or anaplasmosis; by the year 2000 there were nearly 500

cases of Lyme disease and 79 of babesiosis, and by 2010 there were nearly 1,300 cases of Lyme disease, over 700 cases of babesiosis, and 56 cases of anaplasmosis. Several less common and newly emerging diseases also have been reported in recent years, including Powassan virus disease, Rocky Mountain spotted fever, and a newly described form of human ehrlichiosis.

The blacklegged tick (or deer tick) transmits the agents of all of the diseases listed above except Rocky Mountain spotted fever. In general, the risk of tick-borne disease is higher in eastern Minnesota counties, and most diagnosed cases report blacklegged tick exposure in forested areas of east central, north central, and southeastern Minnesota. In recent years, however, blacklegged ticks have emerged in forested regions of the state where they had not previously been reported, particularly in west central and northern Minnesota.<sup>41</sup>

Tick-borne disease in Minnesota: 1990-2010\*



Rates of tickborne disease in Minnesota have increased tenfold since 1990.

	1990	1995	2000	2005	2010
Lyme disease	67	204	465	917	1293
Human anaplasmosis	0	5	79	186	720
Babesiosis	0	0	2	10	56

Source: Minnesota Department of Health, Acute Disease Investigation and Control Section. (2011). 42

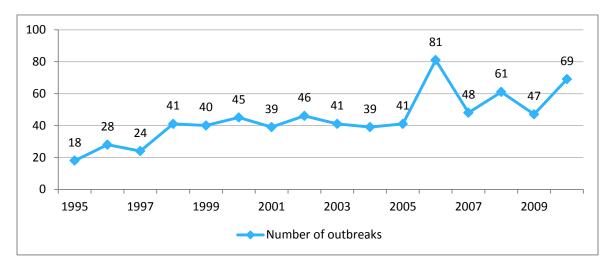
## Foodborne Illness

Food is part of the natural environment, although the origins of Minnesota's food supply range far beyond our state's borders. During the past few decades, the food supply system in Minnesota has become part of a complex global industry. Food contains natural chemicals from the original plant or animal sources, and may also come in contact with many natural and artificial substances during production, processing, and preparation. Potential food hazards include microorganisms, naturally present chemicals, chemicals produced by cooking, environmental contaminants, additives, and pesticides. Foodborne illness is caused by consuming food or beverages that are contaminated by disease-causing microbes or pathogens.

The annual number of confirmed foodborne illness outbreaks has gradually increased, from a median of 40 between 1995 and 2005 to a median of 46.5 between 2001 and 2010. Some (but not all) of this increase is due to more effective outbreak monitoring like the establishment of a toll-free foodborne illness hotline in 1998. 43

#### Confirmed foodborne outbreaks in Minnesota: 1995-2010

Reported foodborne outbreaks have increased in Minnesota during the past 15 years.



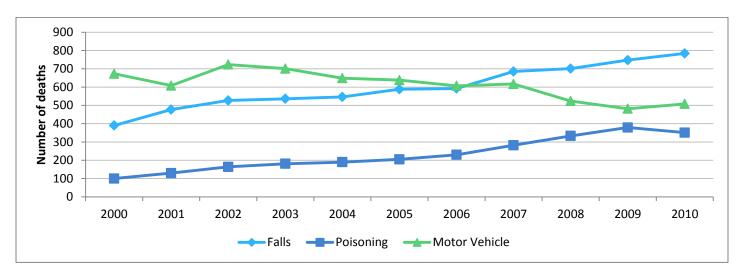
Source: Minnesota Department of Health; Foodborne, Vectorborne, and Zoonotic Diseases Program. (2011).<sup>44</sup>

## **Injury and Violence**

Injury is the leading cause of death for children and young adults in Minnesota, but deaths are a small proportion of the impact of injury. For every one injury death, there are three severe traumas (including brain and spinal cord injuries), ten other hospitalized injuries, and 100 injuries that result in emergency department treatment only.

Injuries may be intentional (the result of violence) or unintentional. The leading causes of unintentional injury-related deaths in Minnesota between 2000 and 2009 were falls, motor vehicle crashes and poisoning. When all intent is factored into injury, then self-inflicted firearm injuries rank third and self-inflicted poisoning ranks sixth in overall injury-related mortality. 45

#### Leading causes of unintentional injury deaths in Minnesota: 2000-2010



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Falls	390	477	527	536	546	588	592	685	701	747	784
Poisoning	100	130	164	181	190	205	230	282	333	379	351
Motor Vehicle	673	608	723	701	649	638	607	617	524	482	508

Source: Minnesota Department of Health, Minnesota Center for Health Statistics. (2011). 46

## **Falls-Related Injury**

Falls are the leading cause of injuries for children (under age 19) treated in hospital emergency departments, and the leading cause of hospitalized injury among persons over 65.

Falls can cause moderate to severe injuries, including hip fractures and head traumas, and increase the risk of early death. Among older adults (65+), falls are the leading cause of injury death, and Minnesota has one of the highest mortality rates due to falls among the elderly in the nation.

## Minnesota has one of the nation's highest rates of death from falls among the elderly.

#### Falls-related mortality for older adults in the United States: 2009

States with highes	t rates of death from falls	States with lowest	rates of death from falls
State	Rate per 100,000*	State	Rate per 100,000*
Vermont	117.12	New Jersey	23.36
New Mexico	101.60	Alabama	25.04
Wisconsin	97.87	South Carolina	29.22
Minnesota	85.11	Louisiana	30.93
Colorado	84.53	New York	33.06

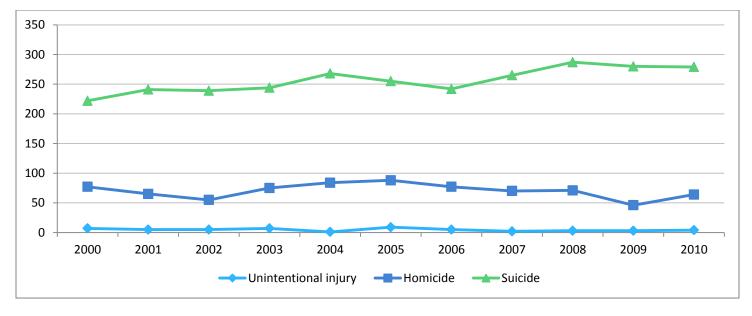
<sup>\*</sup> Rate adjusted for age, in the year 2000; all races, both sexes, adults aged 65-85. Rate in Alaska (26.85) not included due to inadequate sample size. Source: Centers for Disease Control and Prevention. (2011).<sup>47</sup>

# The majority of firearm-related deaths in Minnesota are due to suicide.

## **Firearm Injury**

Every day, approximately one Minnesotan dies and another is injured from a firearm. Firearms are the second leading cause of traumatic brain injury death in Minnesota. Nearly three-fourths of firearm-related deaths are suicides, however, rather than assaults or unintentional injuries on another person.

#### Firearm deaths in Minnesota: 2000-2010



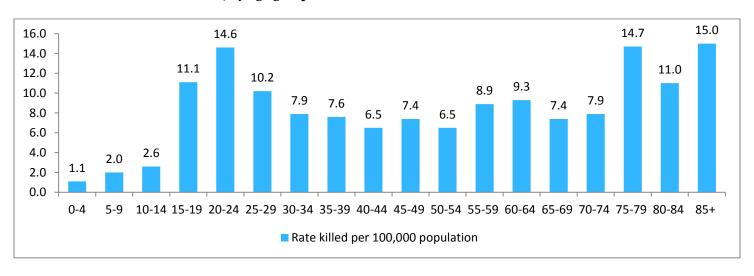
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Unintentional Injury	7	5	5	7	1	9	5	2	3	3	4
Homicide	77	65	55	75	84	88	77	70	71	46	64
Suicide	222	241	239	244	268	255	242	265	287	280	279

Source: Minnesota Department of Health, Minnesota Center for Health Statistics. (2011). 48

## **Motor Vehicle Injury**

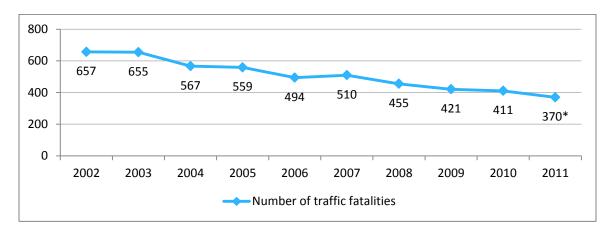
In Minnesota, motor vehicle-related injuries are the leading cause of injury-related death for individuals up to the age of 44, and for adults between 55 and 64.<sup>49</sup> While these rates are declining, teenagers and young adults still pay the heaviest price in terms of both deaths and injuries, including traumatic brain injuries and spinal cord injuries.

#### Motor vehicle death in Minnesota, by age group: 2010



Source: Minnesota Department of Health, Minnesota Injury Data Access System (2011).<sup>50</sup>

#### Traffic fatalities in Minnesota: 2002-2011



Motor vehicle crash-related mortality is highest among young adults and the elderly.

Source: U.S. Department of Transportation, National Highway Traffic Safety Administration. 51

On an average day in 2011, at least one person died on Minnesota highways and at least three were seriously injured. Serious injuries prevent walking, driving or continuing other activities of daily life, creating both significant economic costs and a decline in the quality of life.

Those at greatest risk of injury from traffic crashes are 20- to 24-year-old drivers, elderly drivers, male drivers, unbelted occupants, and unrestrained children; pedestrian injuries are among the most expensive in terms of hospital charges.<sup>52</sup>

<sup>\*</sup> Preliminary number.

The numbers of teen-involved traffic crashes have decreased in recent years. In 2004, 23 percent of all traffic crashes in Minnesota were teen-related. In 2010, that percentage dropped to 18 percent. Consequently, teen (ages 13-19) fatalities and teen injuries have both decreased. In 2004, 16 percent of all traffic fatalities and 18 percent of all traffic injuries in Minnesota were among teens. In 2010, those percentages dropped to 11 and 15 percent, respectively.<sup>53</sup>

Fatalities on Minnesota's state and local roads fell for the fourth straight year in 2010, to 411, and are expected to fall again once a final count of fatalities is known for 2011. In 2009, Minnesota's fatality rate was third-lowest among the 50 states.<sup>54</sup>

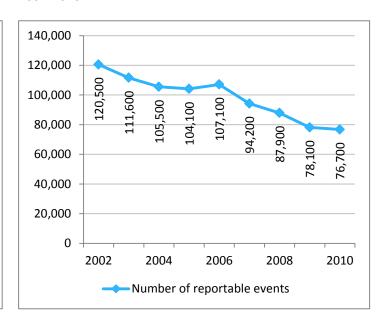
## **Work-Related Injury and Illness**

Minnesota has over 2.5 million people in the labor force;<sup>55</sup> these workers spend up to half their waking lives at work or commuting. While employment has many obvious economic, social, and even health benefits, the workplace can be a significant source of injury and exposure to hazardous substances leading to disability, illness, and death. Workplace settings vary widely in terms of safety and risks to workers; workers too, differ by training, culture, gender, age, and access to resources, such as prevention information and preventive health care.<sup>56</sup>

## Fatal workplace injuries in Minnesota: 2002-2010

#### Number of fatal workplace injuries

## Non-fatal workplace injuries and illnesses in Minnesota: 2002-2010



Source: U.S. Department of Labor, Bureau of Labor Statistics. (2011).<sup>57</sup>

Source: U.S. Department of Labor, Bureau of Labor Statistics. (2011).<sup>58</sup>

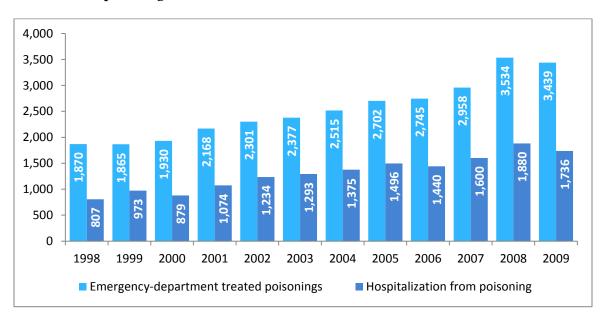
State and national databases track work injury-related deaths in industries such as agriculture, forestry, mining, construction, transportation and warehousing; conditions such as overexertion, repetitive motion, and hearing loss; and illnesses such as respiratory disease, elevated blood lead levels, and skin diseases. In 2010, 69 Minnesotans succumbed to fatal work-related injuries, and over 76,000 non-fatal occupational illnesses and injuries. Approximately 90 percent of injuries occur among males, and rates tend to be higher among the youngest and oldest aged workers.

## **Prescription Drug Poisoning**

Poisonings, both self-inflicted and unintentional, are leading causes of injury death and hospital-treated injury in Minnesota, and the numbers are growing. The main source of this increase is the misuse of prescription drugs.

Very few prescription drugs involved in overdoses come from pharmacy theft: about three-fourths are obtained from friends or family members. Rates of prescription drug overdoses vary widely by state; Minnesota's rate, at 7.2 per 100,000 population, is similar to surrounding states and about one-third of the rates for New Mexico (27.0 per 100,000), and West Virginia (25.8 per 100,000). The state with the lowest rate in 2010 was Nebraska, with not quite six deaths per 100,000.

#### Unintentional poisoning in Minnesota: 1998-2009



The number of non-fatal, hospital-treated, unintentional poisonings has more than doubled between 1998 and 2008.

## Suicide

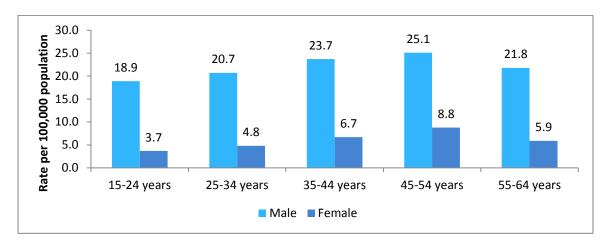
In 2010, nearly six hundred Minnesotans died by suicide, an average rate of 11.3 per 100,000. Suicide rates are higher for males than for females, and the suicide rate among the American Indian population (18.3 per 100,000 for 2006-2010) is nearly double the rate in the state's white population (10.9 per 100,000).

- The number of people who died by suicide (599) in Minnesota in 2010 was more than five times higher than the number of homicide victims (111).
- Minnesota's suicide rate has been steadily climbing in the last ten years, from a low of 8.9 per 100,000 in 2000 to 11.1 per 100,000 in 2010.
- While many people assume that suicide rates are highest among teenagers, males over the age of 35 actually have the highest rates of suicide.

<sup>\*</sup> Emergency department-treated. Source: Minnesota Department of Health, Minnesota Injury Data Access System. (2010).<sup>63</sup>

#### Suicide in Minnesota, by age group: 2006-2010

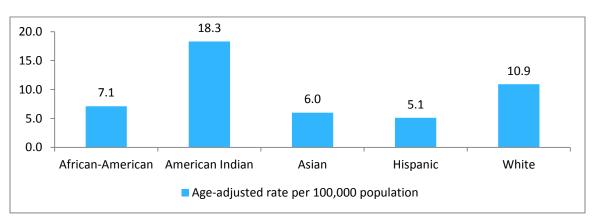
The rate of suicide among the state's males is much higher than that of females.



Source: Minnesota Department of Health, Minnesota Center for Health Statistics. (2011). 64

#### Suicide in Minnesota, by race/ethnicity: 2006-2010

The rate of suicide among the state's American Indian population is nearly double that of the state's white population.

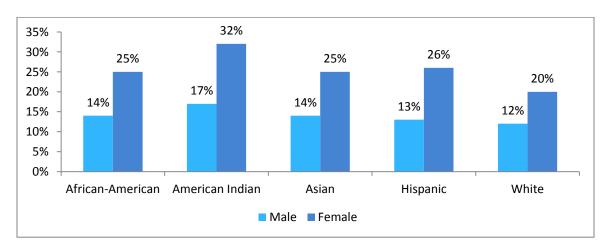


Source: Minnesota Department of Health, Minnesota Center for Health Statistics. (2011).<sup>65</sup>

#### Minnesota ninth-graders thinking about suicide: 2010

Minnesota ninth-graders who have thought about killing themselves during the past year

Minnesota's teen girls report thinking about suicide more than the state's teen boys.



Source: Minnesota Department of Health, Center for Health Statistics. (2011).<sup>66</sup>

Among adolescents, girls are much more likely to have thought about killing themselves than boys, and students of color are more likely to report both thinking about suicide and attempting suicide. American Indian students have the highest rate of attempted suicide among ninthgraders and the highest rate of death by suicide in Minnesota among all age groups. <sup>67</sup>

## Vulnerable Adult Abuse

#### Adult protection report\* victims in Minnesota: 2010

Age group	Victims (Count)	Percent of Victims
Under 30	1,912	10.7%
30 to 49	3,062	17.1%
50 to 64	3,444	19.2%
65 to 74	2,092	11.7%
85 and older	3,247	18.1%
Total	17,895	100.0%

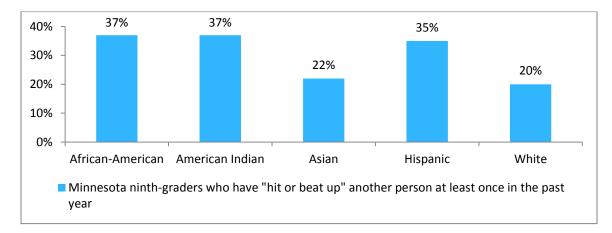
Vulnerable adult abuse affects nearly 18,000 victims in Minnesota.

Vulnerable adults include the elderly and adults of all ages with physical or mental disabilities, whether living at home or being cared for in a health facility. The most reported victims are over age 85. Abuse and maltreatment of vulnerable adults can include physical, emotional, or sexual abuse; caregiver neglect; self-neglect; and financial exploitation.

#### **Youth Violence**

Among Minnesota students, younger students are more likely to engage in hitting or beating up another person; reports of hitting or beating up another person are more common in sixth and ninth grade than in 12th grade. In all three grades, African-American, American Indian, and Hispanic students are more likely than other students to report hitting or beating up someone.

#### Minnesota ninth-graders and physical violence: 2010



More than onethird of the state's Hispanic, American Indian, and African-American ninthgraders report involvement in violence.

Source: Minnesota Department of Health, Center for Health Statistics. (2011).<sup>69</sup>

<sup>\*</sup> Not yet substantiated. Number of reports: 23,909; number of victims: 17,905; missing data: 10. Source: Minnesota Department of Human Services, Data Warehouse. (2011, April). 68

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