

2017



Substance Abuse in Minnesota: A State Epidemiological Profile

Prepared by: EpiMachine, LLC

**for the Minnesota Department of Human Services, Alcohol
and Drug Abuse Division**

2017



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Section 1. Introduction

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Substance Abuse in Minnesota

Section 1. Introduction

The 2017 Minnesota State EpiProfile is divided into seven parts:

- 1. Introduction (which includes a profile overview, population snapshot, and acknowledgements)**
- 2. Executive Summary**
- 3. Alcohol: Use, Consequences, and Intervening Variables**
- 4. Tobacco and Nicotine: Use, Consequences, and Intervening Variables**
- 5. Drugs: Use, Consequences, and Intervening Variables**
- 6. Mental Health and Shared Factors**
- 7. Appendix (which includes technical notes and data sources)**

Introduction

Profile Overview and Format

Overview

Minnesota's State Epidemiological Profile of Substance Use (Epi Profile) has been created under the supervision of the State Epidemiological Outcomes Workgroup (SEOW) funded by the Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Prevention (CSAP).

Minnesota's SEOW membership is wide and varied. Led by the Department of Human Services Alcohol and Drug Abuse Division (ADAD) and staffed through a subcontract with the Invitation Health Institute, the SEOW works closely with the Minnesota Strategic Prevention Framework State Incentive Grant (SPF SIG) Advisory Council and Management Team.

Evidence-based Planning and Needs Assessment

The Epi Profile is grounded in CSAP's Strategic Prevention Framework (SPF). The SPF is a five-step prevention planning model consisting of 1) Assessment (of both need and resources), 2) Capacity Building, 3) Planning, 4) Implementation, and 5) Evaluation. The Epi Profile serves as an important first step in the Needs Assessment phase of the SPF by summarizing and characterizing consumption patterns and consequences related to the use of alcohol, tobacco and other drugs in Minnesota.

The Epi Profile was created to help the state and communities determine prevention needs based upon available data on substance use and consequent outcomes. Accordingly, the Epi Profile can be used for a variety of purposes. State-level administrators may use the profile to prepare applications for federal funding or they may use it to monitor prevention-related trends in local communities to which they administer grants. Community-level prevention planners may use the profile, in conjunction with the interactive website located at www.sumn.org, to assess the relative importance of substance related problems in their communities or to apply for grant funding. Overall, the Profile is intended to help all audiences in Minnesota make decisions based on existing evidence and demonstration of need. The Epi Profile contains numerous indicators of substance use and consequences—it is up to each community to determine which indicators are of highest priority. Priority setting involves assessment of the problems, the community's capacity to address each problem, and community readiness. Problem assessment entails looking at: magnitude (how many youth are reporting alcohol use), severity (how our community compares with the

region and the state), and time trends (whether youth alcohol consumption is increasing or decreasing from year to year).

The SEOW views this Epi Profile as a “living document.” That is, it will be updated and revised annually. The SEOW intends to improve upon the current content and structure of the Epi Profile based upon the availability of data and feedback from experts and users. The data included in the Epi Profile are also available on the SEOW’s new interactive website, located at www.sumn.org. Users of the site can create their own tables, graphs and maps, and find links to relevant articles, community resources and tools.

Format

In order to provide a variety of data, the Epi Profile casts a wide net over the universe of available substances and related consequences. Substances and consequences in the Epi Profile are grouped in the following categories: Alcohol, Tobacco or Other Drugs (ATOD).

This document is formatted with these categories in mind. The Profile is divided into sections pertaining to statewide ATOD *consumption* patterns (measures of substance use), related *consequences* (negative outcomes associated with use) and *intervening variables* (influencing consumption).

Definitions, Technical Notes, and Data Sources

In order to best utilize the data presented in the Profile, we recommend the reader take time to review the definitions, technical notes, and data sources and their descriptions in the appendix at the end of this document.

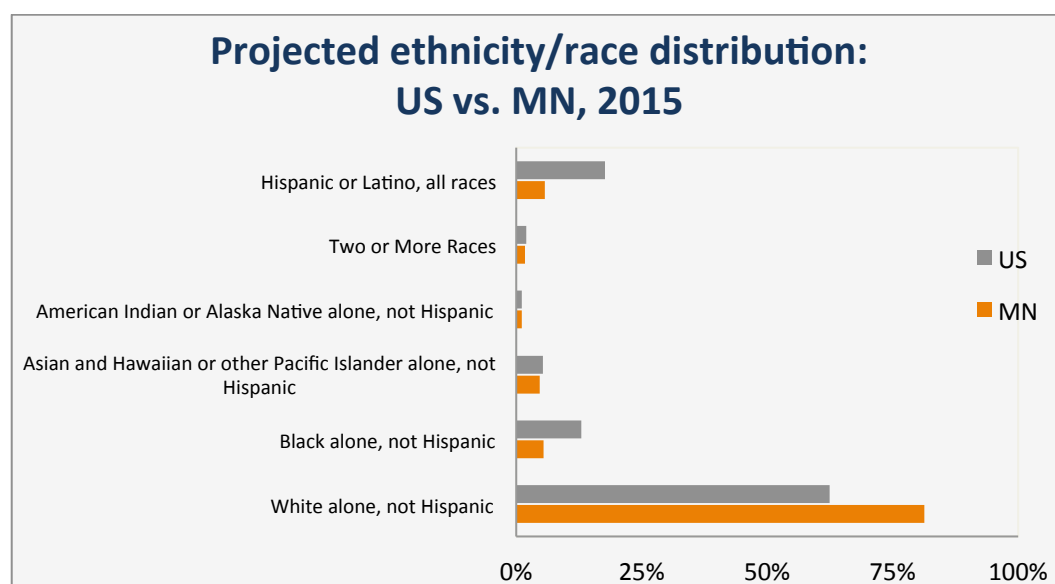
Legend

The following color scheme is used for the graphs in the Epi Profile:



Population Snapshot

Minnesota comprises 87 counties, and is the 21st largest state by population. In 2016, it was home to an estimated 5,519,952 people¹.



According to US Census estimates², approximately 1% of persons living in Minnesota identify as American Indian/Alaska Native. There are two tribes located in Minnesota, the Sioux and Ojibwe: four nations in the Sioux tribe and seven nations in the Ojibwe tribe. Members of other tribes have moved to Minnesota as well. About 31% of Minnesota's approximately 55,000 American Indians reside on reservation lands, another 35% live in the cities of Minneapolis and St. Paul, and others live in communities throughout the state.

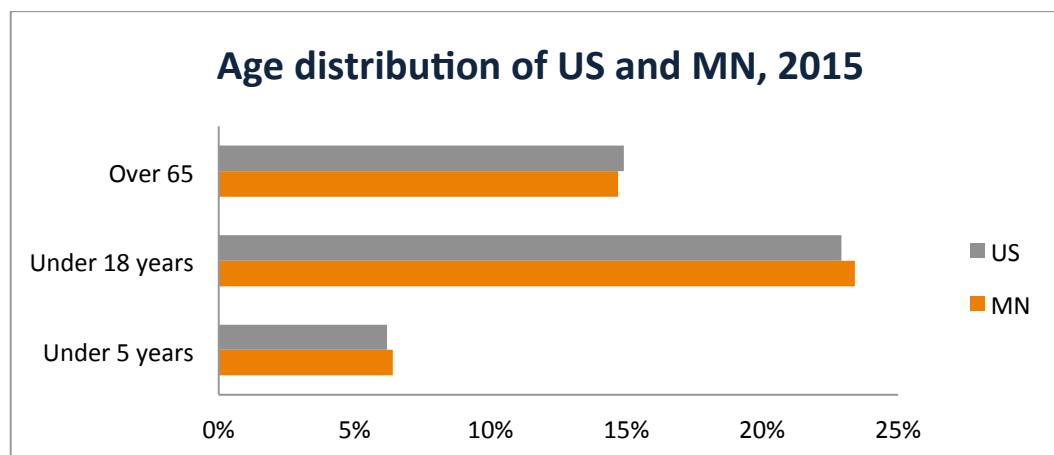
Approximately 6.0% of persons living in Minnesota identify as African-American, African or Black only (not in combination with another race). While this is a small population relative to other states, recent years have seen a significant and substantial increase in the number of Minnesotans of African immigrant descent. In 2010 the US Census Bureau estimated that there were over 110,000 individuals of Subsaharan African descent in Minnesota.

According to the US Census estimates, the percentage of persons living in Minnesota who identify as Hispanic/Latino was 5.2% in 2015. Origin or descent of Hispanics and Latinos in Minnesota include Mexican, Cuban Puerto Rican, Central or South American, and others.

¹ Quick Facts: Minnesota. Retrieved on March 30, 2017 from <https://www.census.gov/quickfacts/table/PST045216/27>

² Resident Population Projections by Race, Hispanic-Origin Status, and Age: 2010 and 2015. Retrieved on March 30, 2015 from <http://www.census.gov/compendia/statab/2012/tables/12s0012.pdf>

The percentage of persons living in Minnesota who identify as Asian was 4.9% in 2015. The largest Asian communities in Minnesota in 2010 were: Hmong (27.0%), Asian Indian (15.5%), Chinese (11.7%), and Vietnamese (11.1%).³



Minnesota's Drug Prevention Regions

Minnesota is divided into seven Alcohol, Tobacco and Other Drug Prevention Regions. The Minnesota Prevention Region Coordinators (RPCs) support communities in their efforts to prevent alcohol, tobacco and other drug (ATOD) abuse. The RPCs help communities by building regional relationships to enhance prevention efforts, identifying and providing training opportunities, and providing technical assistance. Learn more about the RPCs at <http://www.rpcmn.org/>.

America's Health Rankings

According to the United Health Foundation's America's Health Rankings, Minnesota was the healthiest state in the nation from 2003 to 2006. The state's rankings dropped for a few years, rose to 3rd place for 2012 and 2013, and fell to 6th for 2014. The Rankings report identified a high prevalence of binge drinking, high incidence of pertussis, and low per capita public health funding as concerns. One highlighted strength of the state is the low rate of drug deaths, although they increased by 15% between 2013 and 2014.⁴

³ Council on Asian-Pacific Minnesotans. State of the Asian-Pacific Minnesotans. Retrieved on April 1, 2014 from <http://mn.gov/capm/pdf/StateoftheAsianPacificMinnesotans.pdf>

⁴ United Health Foundation. America's Health Rankings 2014: Minnesota. Retrieved on March 30, 2015 from <http://www.americahealthrankings.org/MN>

Acknowledgements

The Profile is a collaborative effort of the Minnesota SEOW and representatives from state agencies, coalitions and other local organizations. The SEOW is extremely grateful for the time and attention given to the Profile by the following organizations and individuals:

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Section 2. Executive Summary

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Section 2. Executive Summary

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- 6. Mental Health and Shared Factors**
- 7. Appendix (which includes technical notes and data sources)**

Executive Summary

Overview and Key Findings

The 2017 Minnesota State Epidemiological Profile of Substance Use (Epi Profile) was created to help the state and communities determine prevention needs based upon available data on substance use and related outcomes. Accordingly, the Epi Profile can be used by a variety of audiences for a variety of different, but related purposes. State-level administrators may use the profile to prepare applications for federal funding or they may use it to monitor prevention-related trends in local communities to which they administer grants. Community-level prevention planners may use the Epi Profile, in conjunction with the interactive website located at www.sumn.org, to assess the relative importance of substance related problems in their communities or to apply for grant funding themselves. Overall, the Profile is intended to help all audiences in Minnesota make decisions based on existing evidence and demonstration of need.

The Epi Profile represents a comprehensive source of data related to alcohol, tobacco and other drugs (ATOD) in Minnesota. THREE types of data are presented in the Profile:

1. **USE:** Information on ATOD consumption
2. **CONSEQUENCES:** Negative outcomes associated with use
3. **INTERVENING VARIABLES:** Factors affecting use

The Profile is intended as a “one-stop shop” for audiences interested in substance abuse data. Data from fourteen state and national sources are presented ranging from years 1998 to 2015. However, the utility of the Epi Profile lies in the fact that the various sources are presented in one comprehensive document.

The data are presented in a variety of ways:

- State data are presented **in conjunction** with national data
- Data are organized by a variety of **demographic variables** (gender, age, race/ethnicity, metro/non-metro)
- **Trend data** present over time

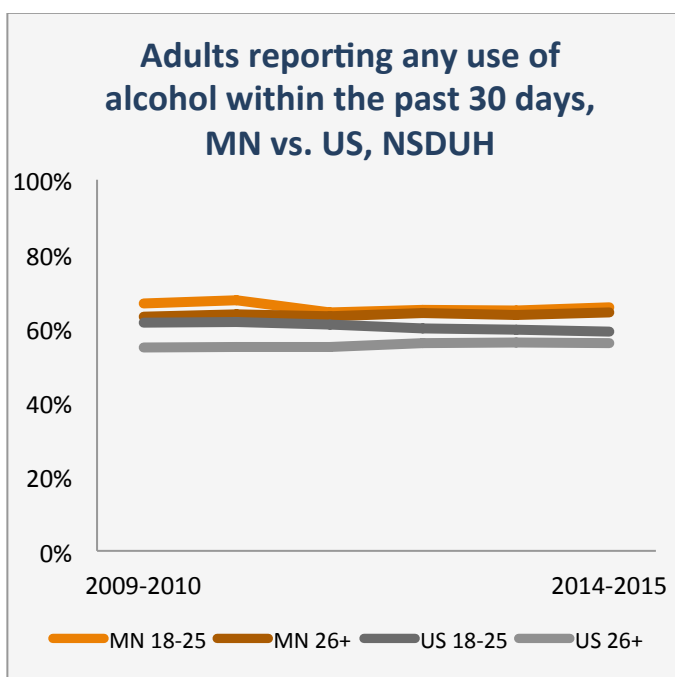
ALCOHOL

Adult

Minnesota overall annual per capita consumption has risen slightly, to 2.8 gallons, moving from the 5th decile among US states in consumption in 2011, to the 2nd decile in 2014.

Overall, Minnesotans drink slightly more than the national average. They consume about the same amount of beer and wine as the US average, and significantly more alcohol in the form of hard alcohol.

Minnesota adults report slightly higher levels of both per capita alcohol consumption and binge drinking than the national average.

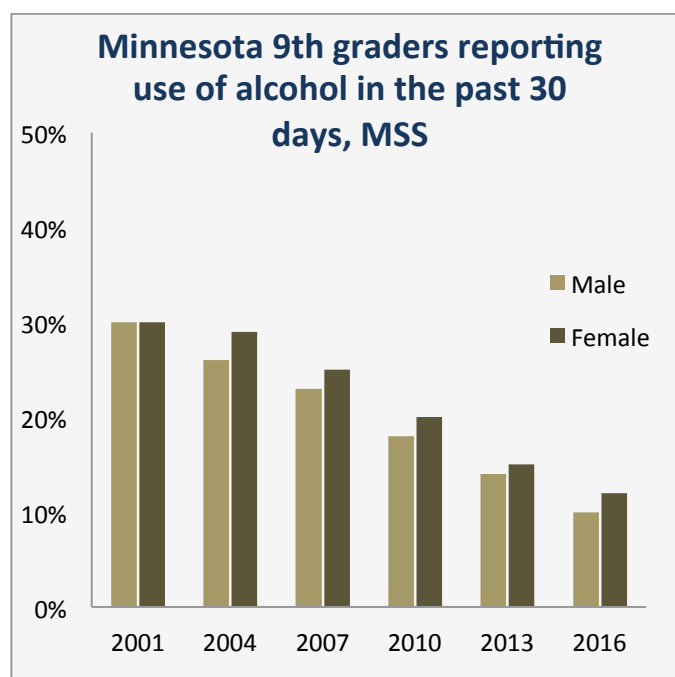


Youth

Past 30-day alcohol use declined among 9th grade students from 2001 to 2016 (down by nearly two-thirds), to 11%.

Alcohol use varied by age: 7.9% of 8th graders reported recent alcohol use, while 24.6% of 11th graders reported use in 2016.

8th grade alcohol consumption in Minnesota is slightly higher than the national average.



TOBACCO

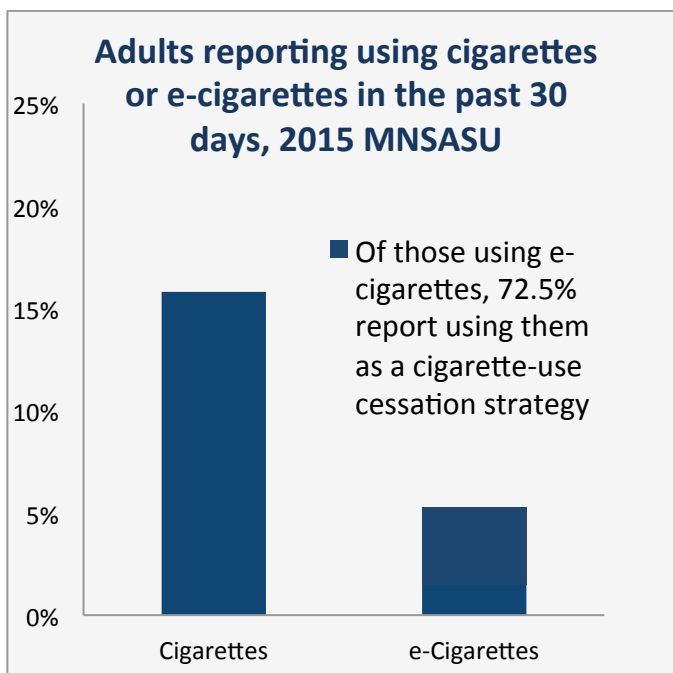
Adult

Smoking rates of adults in Minnesota are on par with the national average.

Young adults (ages 25-44) tend to smoke more, but rates have decreased slightly.

Lung, bronchus and trachea cancer death rates have declined slightly over time, both in Minnesota and nationally. Rates in Minnesota have been consistently lower than nationwide rates.

Most Minnesota adults perceive great or moderate risk of harm from cigarettes, but the rates of adults perceiving harm of e-cigarettes are much lower, especially for young people.



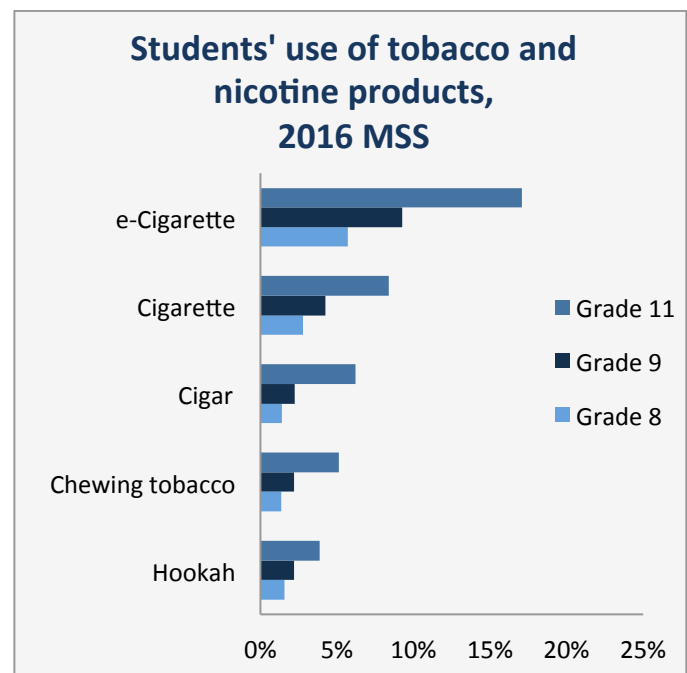
Youth

Rates of 9th graders' 30-day smoking continue to decrease. Reported 30-day cigarette smoking dropped dramatically for 9th grade students from 1998 to 2016 (from 23% down to 4%).

The level of past 30-day smoking for 8th graders is slightly higher than the national average.

Rates of 9th graders' 30-day chewing tobacco use have remained steady. The level for 8th graders is slightly below the national average.

Students are much more likely to report using e-cigarettes than other sources of nicotine.



ILLICIT DRUGS

Adult

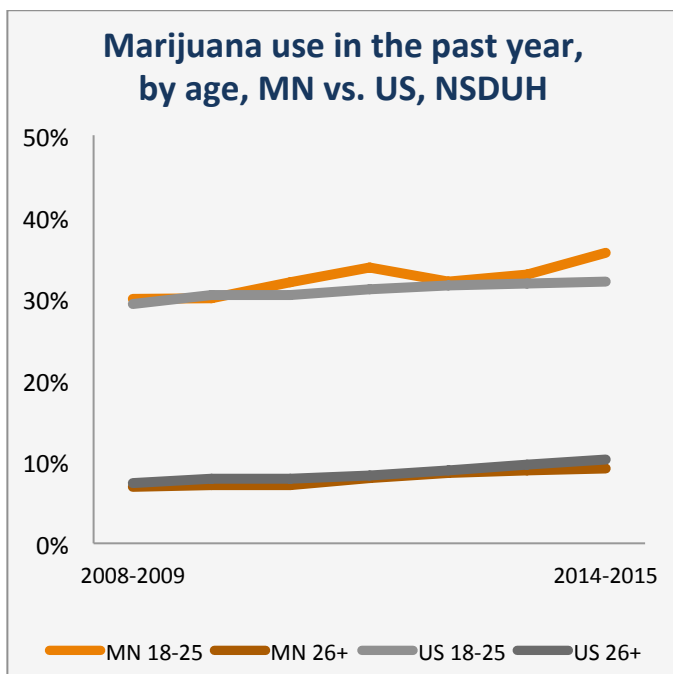
The rates of past 30-day marijuana use in Minnesota have remained slightly below national rates for the past 5 years.

Although use has increased, rates are similar to those from 2006.

The rates for all other measured illicit drugs are also below the national average.

Illicit drug use is highest for persons aged 18-25 years.

The perception of risk of harm from smoking marijuana is below the national average, and is steadily decreasing.

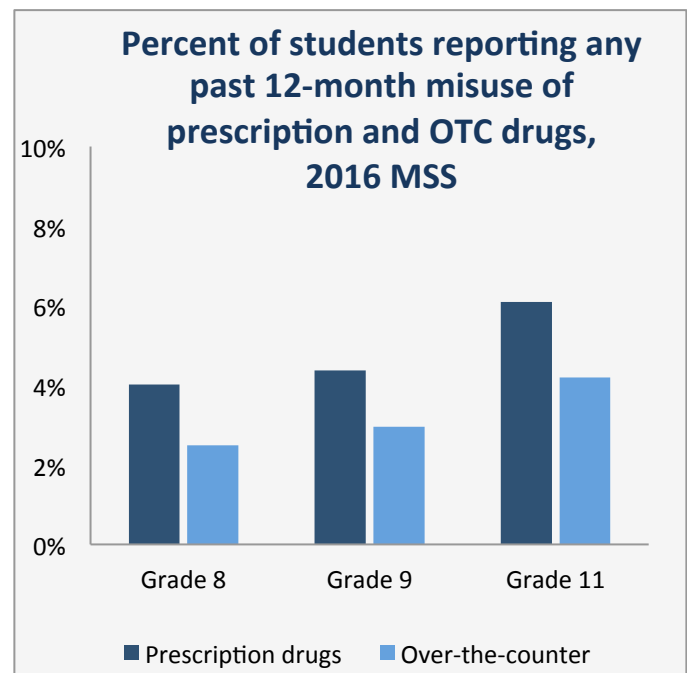


Youth

Minnesota 9th graders' use of all illicit drugs has declined since 1995.

Minnesota students are most likely to misuse prescription pain relievers, ADD/ADHD medication, and over-the-counter medications.

Although 8th graders have a higher perception of risk of harm from smoking marijuana, the perception of risk in 9th graders has declined. Students in 9th grade also perceive less disapproval from friends and parents for smoking marijuana.



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Section 3.

Alcohol: Use, Consequences, and Intervening Variables

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Substance Abuse in Minnesota

Section 3. Alcohol: Use, Consequences, and Intervening Variables

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Alcohol in Minnesota: Use

Recent Alcohol Use

About the Indicator

Alcohol is the most frequently used drug nationally and statewide, and is associated with a number of adverse health consequences¹. Reported use of alcohol in the past 30 days is a common measure of recent alcohol use. Adults are defined as persons aged 18 and older. Youth include 8th, 9th, and 11th graders.

Data Source(s)

General Consumption

National Institute on Alcohol Abuse and Alcoholism (NIAAA)

Adults

National Survey on Drug Use and Health (NSDUH), Behavioral Risk Factor Surveillance System (BRFSS) and the Minnesota Survey of Adult Substance Use (MNSASU)

Youth

Minnesota Student Survey (MSS) and Monitoring the Future (MTF)

Section Summary

Adults

- In the US, per capita consumption of ethanol from all alcoholic beverages combined in 2014 was 2.32 gallons.
- Minnesota's overall per capita consumption went up, from 2.44 gallons in 2011, to 2.80 gallons in 2014, moving from the 5th decile among US states in consumption, to the 2nd decile.

Youth

- Past 30-day alcohol use declined among 9th grade students from 2001 to 2016 (from 30% to 11%).
- Alcohol use varied by age: 7.9% of 8th graders reported recent alcohol use, while 24.6% of 11th graders reported use in 2016.
- Unlike adults, female students reported similar (or higher) rates of alcohol use as male students.

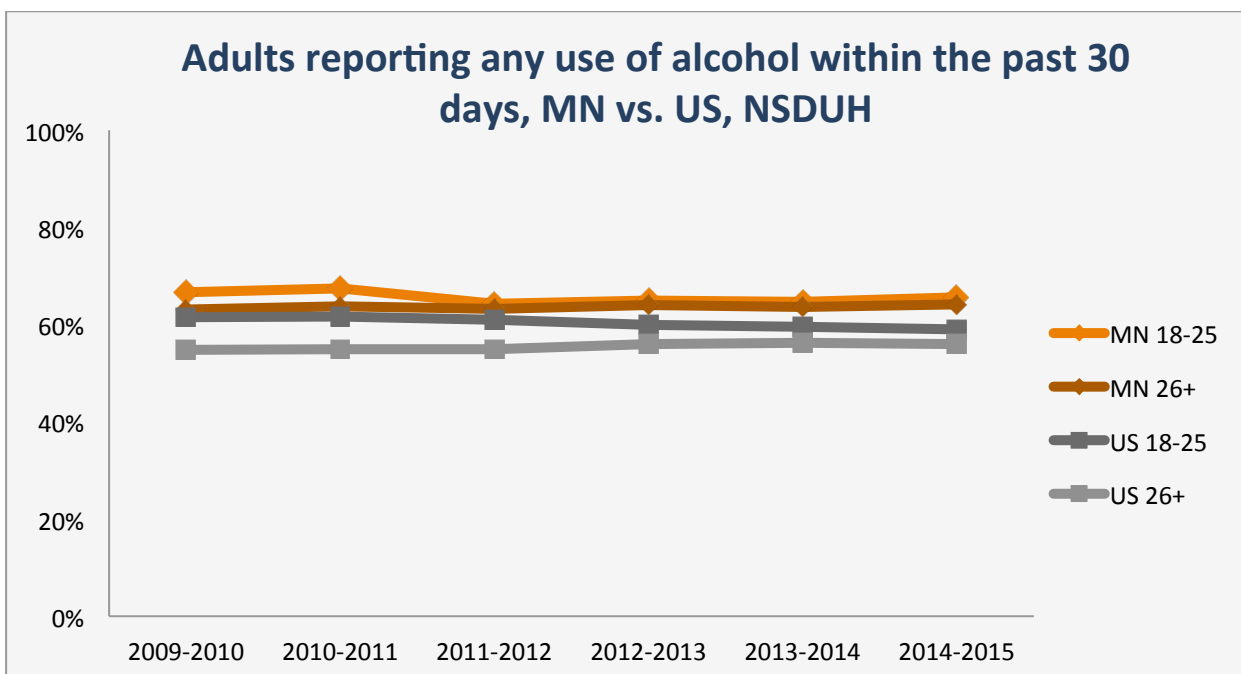
Data Source: NIAAA

Overall, Minnesotans drink about 20% more than the national average. Although they consume about the same amount of beer and wine as the US average, they consume much more alcohol in the form of hard alcohol, or spirits.

Per Capita Ethanol Consumption in Gallons among Persons Age 14 and Older

| Beer | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------------|------|------|------|------|------|------|------|------|------|
| MN | 1.15 | 1.16 | 1.21 | 1.19 | 1.10 | 1.09 | 1.18 | 1.13 | 1.13 |
| US | 1.19 | 1.21 | 1.20 | 1.17 | 1.14 | 1.12 | 1.13 | 1.12 | 1.10 |
| Rate ratio | 0.97 | 0.96 | 1.01 | 1.02 | 0.97 | 0.97 | 1.04 | 1.01 | 1.03 |
| | | | | | | | | | |
| Wine | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| MN | 0.32 | 0.32 | 0.37 | 0.37 | 0.33 | 0.34 | 0.42 | 0.43 | 0.44 |
| US | 0.37 | 0.38 | 0.38 | 0.38 | 0.39 | 0.40 | 0.42 | 0.42 | 0.43 |
| Rate ratio | 0.86 | 0.84 | 0.97 | 0.97 | 0.85 | 0.85 | 1.00 | 1.02 | 1.02 |
| | | | | | | | | | |
| Spirits | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| MN | 0.93 | 0.97 | 1.03 | 1.04 | 0.99 | 1.09 | 1.11 | 1.16 | 1.23 |
| US | 0.71 | 0.73 | 0.73 | 0.74 | 0.74 | 0.76 | 0.78 | 0.80 | 0.80 |
| Rate ratio | 1.31 | 1.33 | 1.41 | 1.41 | 1.34 | 1.43 | 1.42 | 1.45 | 1.54 |
| | | | | | | | | | |
| Total | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| MN | 2.40 | 2.45 | 2.60 | 2.59 | 2.42 | 2.44 | 2.70 | 2.72 | 2.80 |
| US | 2.28 | 2.31 | 2.31 | 2.29 | 2.27 | 2.28 | 2.33 | 2.34 | 2.32 |
| Rate ratio | 1.06 | 1.06 | 1.12 | 1.13 | 1.07 | 1.07 | 1.16 | 1.16 | 1.21 |

Data Source: NSDUH



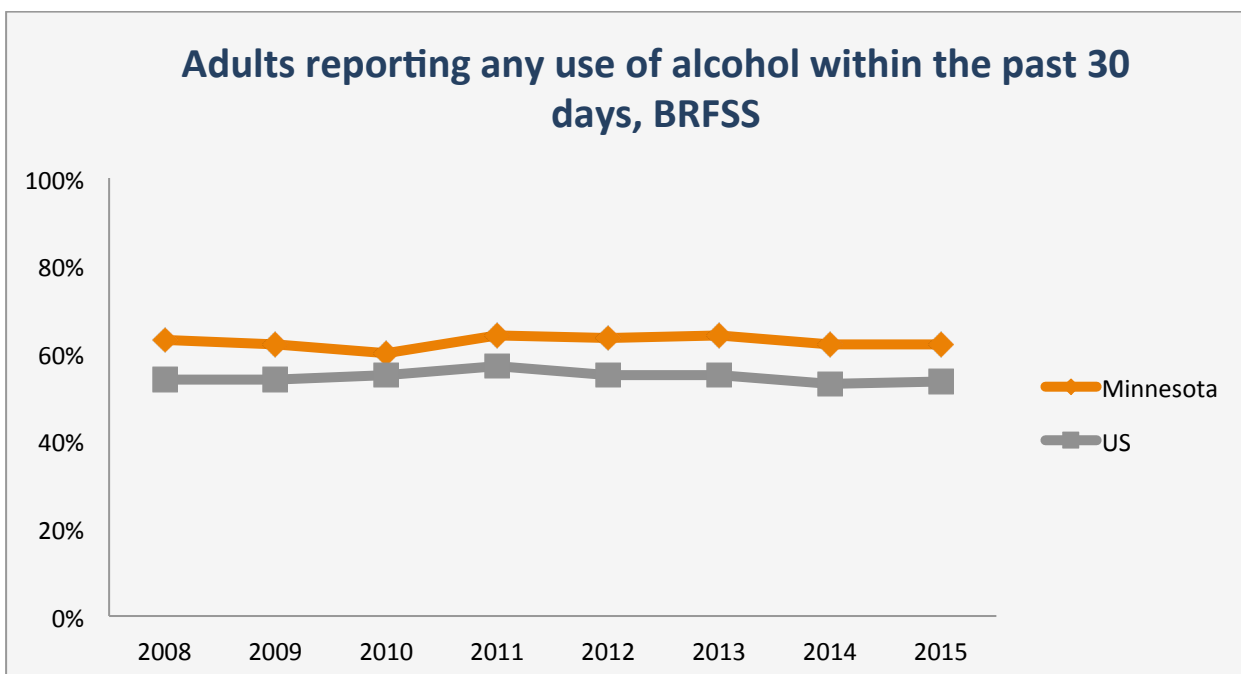
Adults Reporting Any Use of Alcohol within the Past 30 Days

| Minnesota | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Alcohol use 12+ | 58.9% | 59.5% | 58.6% | 58.9% | 58.8% | 59.4% |
| Ages 12 thru 17 | 13.2% | 13.1% | 13.1% | 11.9% | 10.7% | 10.7% |
| Ages 18 thru 25 | 66.7% | 67.5% | 64.2% | 64.7% | 64.7% | 65.6% |
| Ages 26 and Over | 63.1% | 63.8% | 63.2% | 63.6% | 63.6% | 64.2% |
| United States | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Alcohol use 12+ | 51.8% | 51.8% | 51.9% | 52.1% | 52.4% | 52.2% |
| Ages 12 thru 17 | 14.2% | 13.5% | 13.1% | 12.2% | 11.6% | 10.6% |
| Ages 18 thru 25 | 61.6% | 61.0% | 60.5% | 59.9% | 59.6% | 59.0% |
| Ages 26 and Over | 54.9% | 55.0% | 55.3% | 55.7% | 56.2% | 56.0% |
| Total current alcohol* | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Alcohol use 12+ | 1.14 | 1.15 | 1.13 | 1.13 | 1.12 | 1.14 |

NOTE: Total percent represents the total number of survey respondents reporting use divided by the total number of survey respondents who answered the question. Percent within an age group, for example, represents the total number of survey respondents in the age group reporting use, divided by the total number of survey respondents in that age group who answered the question. Estimates are based on a survey-weighted hierarchical Bayes estimation approach. For NSDUH, percentages are presented for the 2 years combined.

*Ratio of MN relative to US; A score above 1 means MN rates are above US rates; a score below 1 means MN rates are below US rates

Data Source: BRFSS



Minnesota Adults Reporting Any Use of Alcohol in the Past 30 Days by Gender, Age, and Race/Ethnicity

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|-----------------------|------------------|------|------|------|------|------|------|------|------|
| Gender | Male | 70% | 67% | 64% | 69% | 69% | 68% | 65% | 66% |
| | Female | 56% | 56% | 55% | 59% | 58% | 59% | 58% | 57% |
| Age | Ages 18 thru 24 | 52% | 50% | N/A | 57% | 57% | 59% | 53% | 54% |
| | Ages 25 thru 34 | 66% | 66% | 64% | 71% | 69% | 71% | 66% | 68% |
| | Ages 35 thru 44 | 73% | 70% | 67% | 68% | 67% | 68% | 69% | 66% |
| | Ages 45 thru 54 | 71% | 70% | 68% | 69% | 69% | 69% | 67% | 66% |
| | Ages 55 thru 64 | 65% | 65% | 61% | 63% | 65% | 62% | 63% | 64% |
| | Ages 65 and over | 48% | 44% | 47% | 52% | 52% | 51% | 51% | 52% |
| Race/Ethnicity | White | 65% | 63% | 62% | 66% | 66% | 67% | 65% | 65% |
| | Black | N/A | N/A | N/A | 50% | 44% | 52% | 37% | 38% |
| | Hispanic | N/A | N/A | N/A | 44% | 46% | 50% | 46% | 40% |
| | Other | N/A | N/A | N/A | 50% | 48% | 41% | 45% | 50% |
| | Multiracial | N/A | N/A | N/A | N/A | 53% | 54% | 56% | 61% |

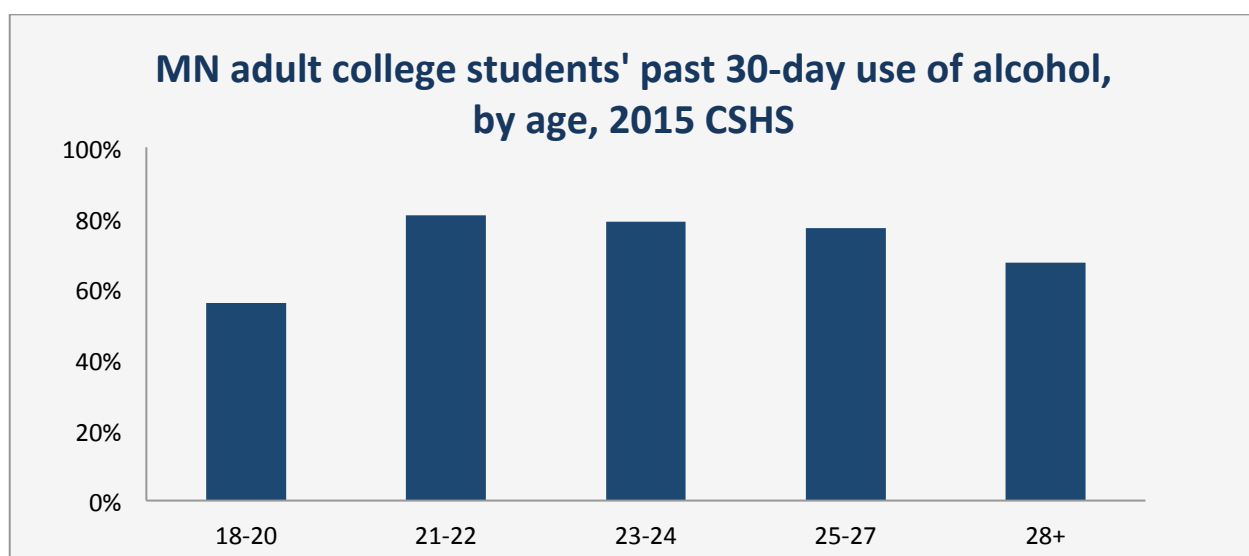
N/A = Not available if the un-weighted sample size for the denominator was < 30 or was unavailable.

NOTE: Use caution in comparing 2011 estimates to those from 2010 or earlier. The addition of a cell-phone sample in 2011 may have resulted in significant mode effects.

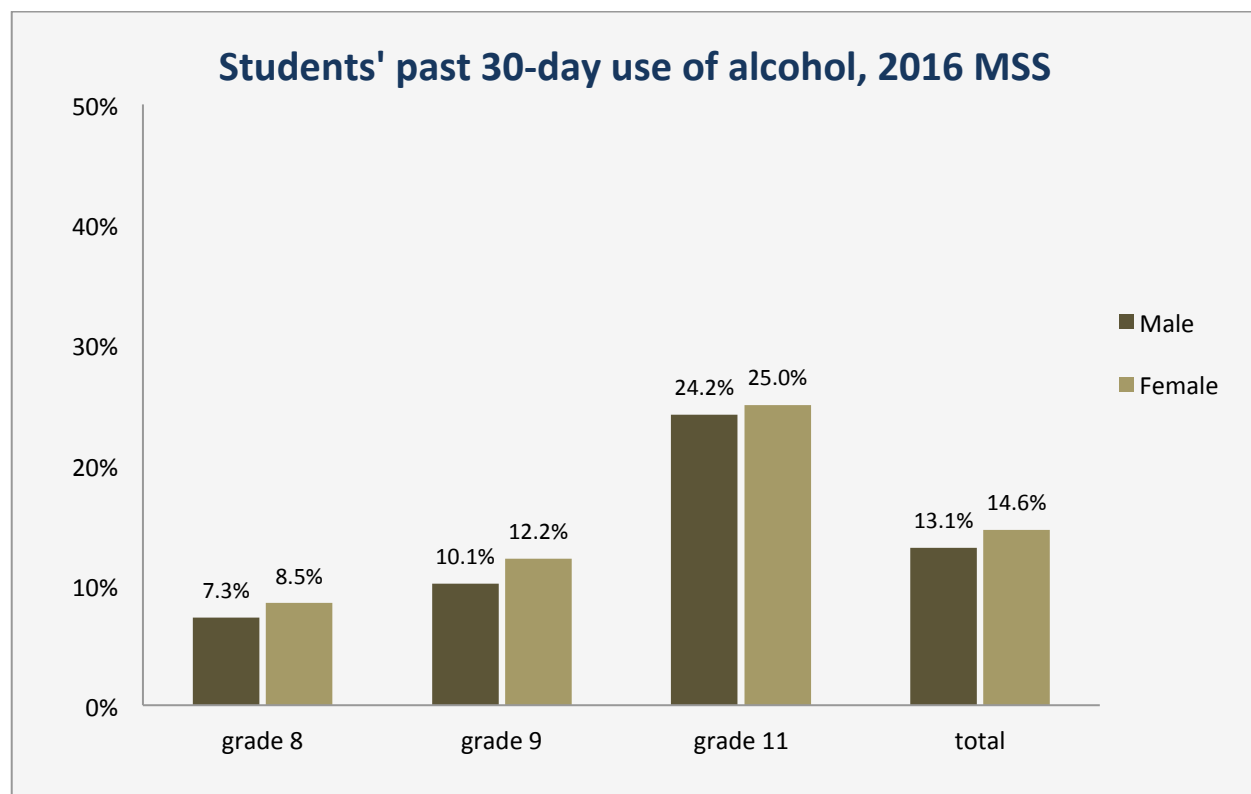
Data Source: MNSASU

| Percent of Minnesota Adults Reporting any Use of Alcohol within the Past 30 Days, 2015 MNSASU | | 2004 | 2010 | 2015 |
|---|---|-------|-------|-------|
| Age | Ages 18 thru 24 | 54.6% | 51.4% | 50.1% |
| | Ages 25 thru 44 | 66.4% | 62.8% | 59.7% |
| | Ages 45 thru 64 | 62.7% | 59.5% | 56.9% |
| | Ages 65 and over | 42.3% | 40.9% | 45.7% |
| Race/Ethnicity | African American or Black | 33.4% | 30.0% | 26.1% |
| | American Indian | 48.8% | 33.4% | 29.3% |
| | Asian American/Pacific Islander | 34.2% | 32.8% | 36.0% |
| | Hispanic/Latino | 32.7% | 31.7% | 27.2% |
| | Bi-Racial/Multi-Racial | 48.2% | 51.0% | 46.8% |
| | White | 62.8% | 60.1% | 59.2% |
| Gender | Male | 66.9% | 63.9% | 59.9% |
| | Female | 52.9% | 49.9% | 49.9% |
| | Total | 59.8% | 56.8% | 54.8% |
| Sexual Orientation | Lesbian, Gay, Bisexual, and Transgender | N/A | N/A | 57.9% |
| | Heterosexual | N/A | N/A | 56.1% |

NOTE: Total percent represents the total number of survey respondents reporting use divided by the total number of survey respondents who answered the question. Percent within an age group, for example, represents the total number of survey respondents in the age group reporting use, divided by the total number of survey respondents in that age group who answered the question.



Data Source: MSS



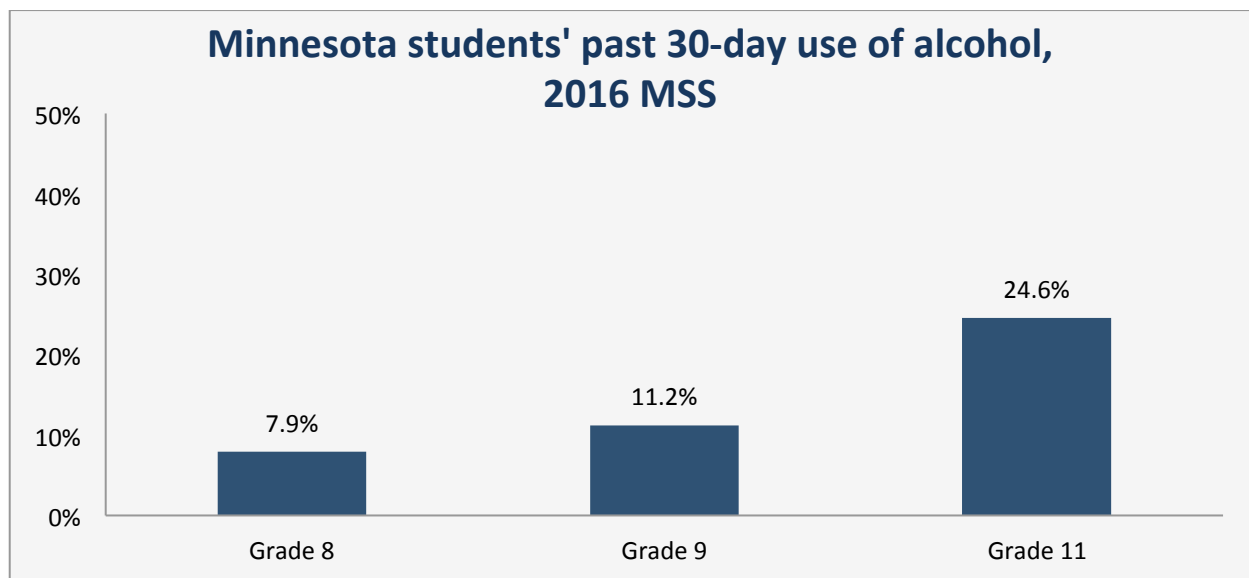
Students Reporting Any Use of Alcohol in the Past 30 Days, 2016

| | | N (#) | % |
|--------|--------|-------|-------|
| Gender | Male | 7,672 | 13.1% |
| | Female | 8,653 | 14.6% |
| | | | |
| Grade | 8th | 3,325 | 7.9% |
| | 9th | 4,692 | 11.2% |
| | 11th | 8,351 | 24.6% |

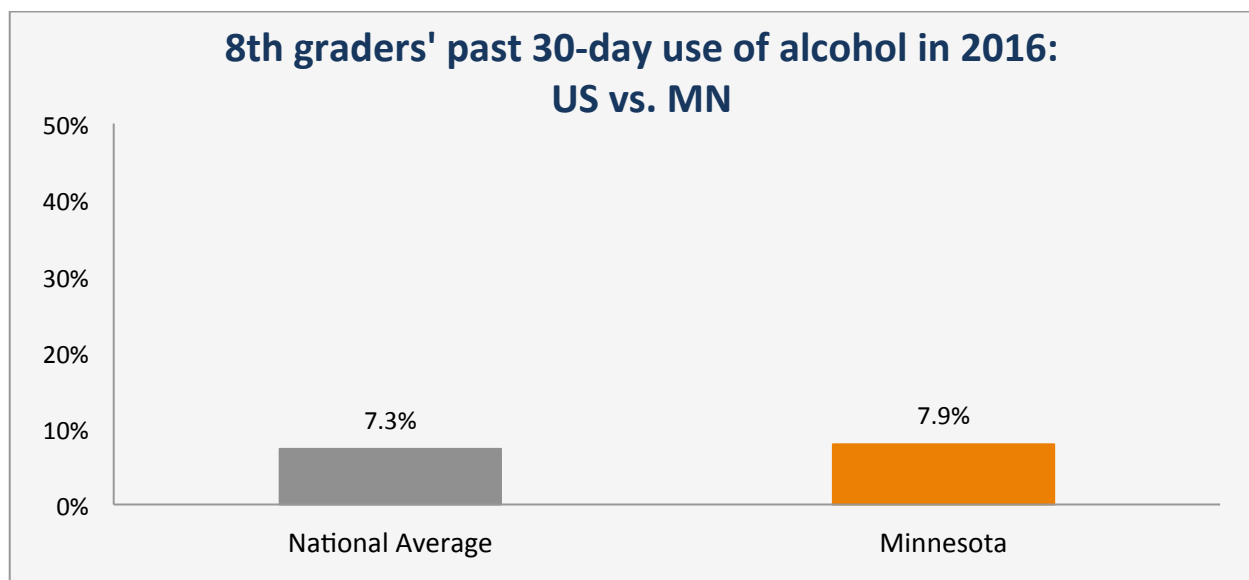
Minnesota 9th Graders Reporting Use of Alcohol in the Past 30 Days

| | 2001 | 2004 | 2007 | 2010 | 2013 | 2016 |
|--------|------|------|------|------|------|------|
| Male | 30% | 26% | 23% | 18% | 14% | 10% |
| Female | 30% | 29% | 25% | 20% | 15% | 12% |
| Total | 30% | 28% | 24% | 19% | 15% | 11% |

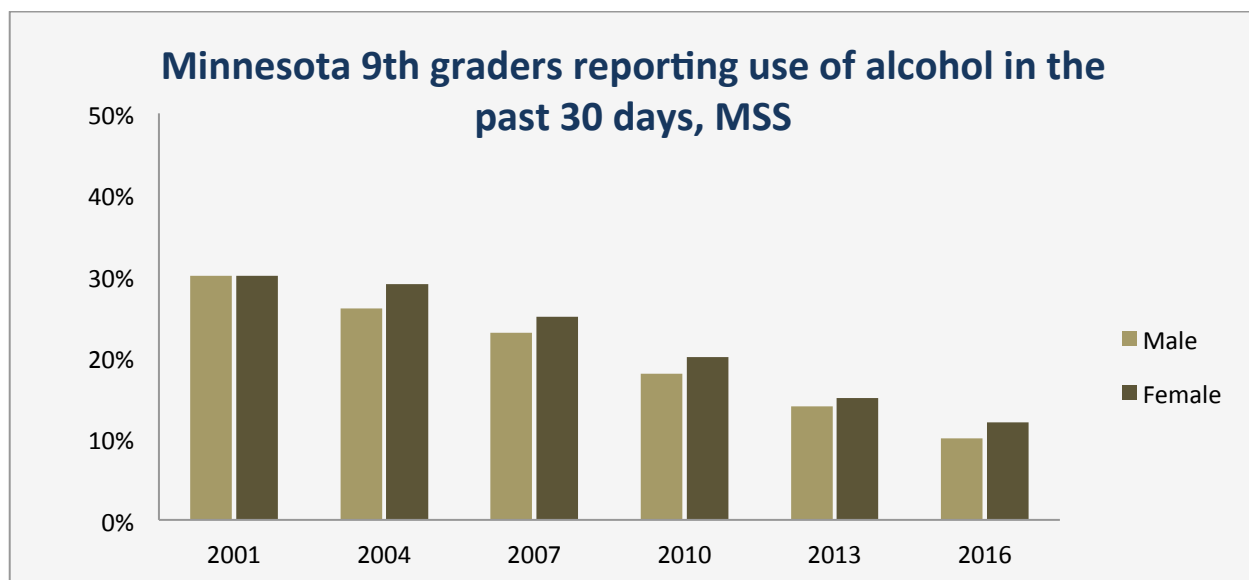
Data Source: MSS and MTF



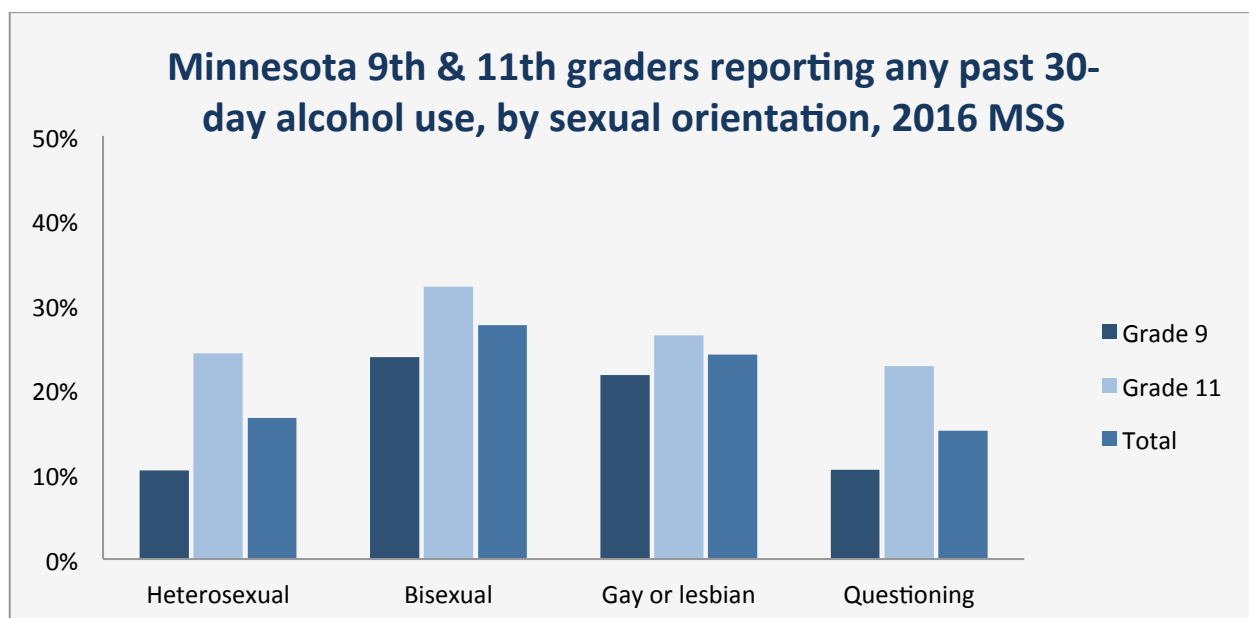
*8th graders' past 30-day use of alcohol in 2013 was slightly higher than the national average (7.9% vs. 7.3%).
Past 30-day use by 9th graders is decreasing.*



Data Source: MSS



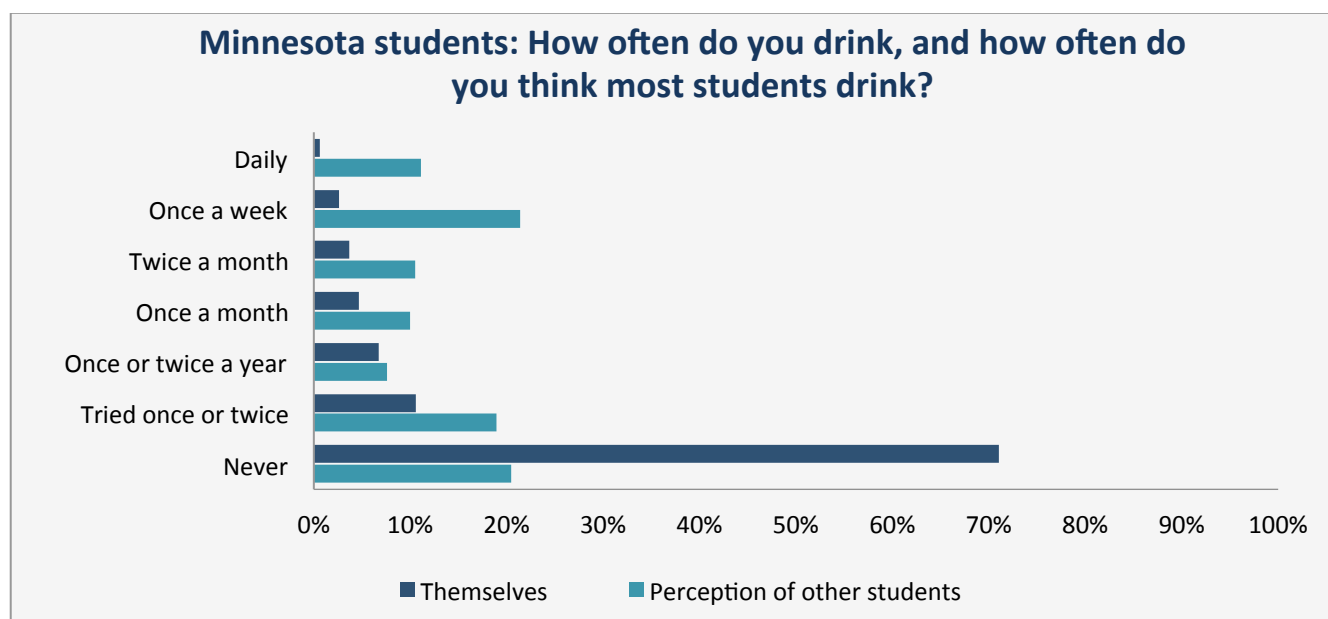
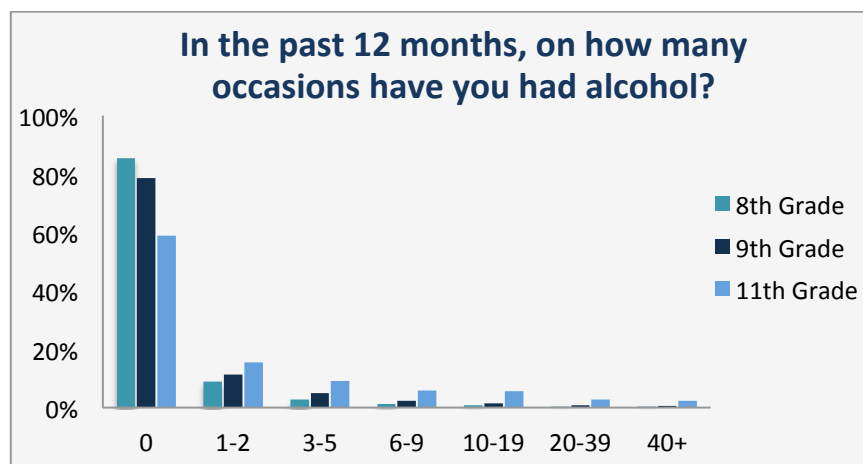
Bisexual, gay and lesbian students, and those questioning their sexual orientation, are all more likely to drink, compared to their heterosexual classmates.



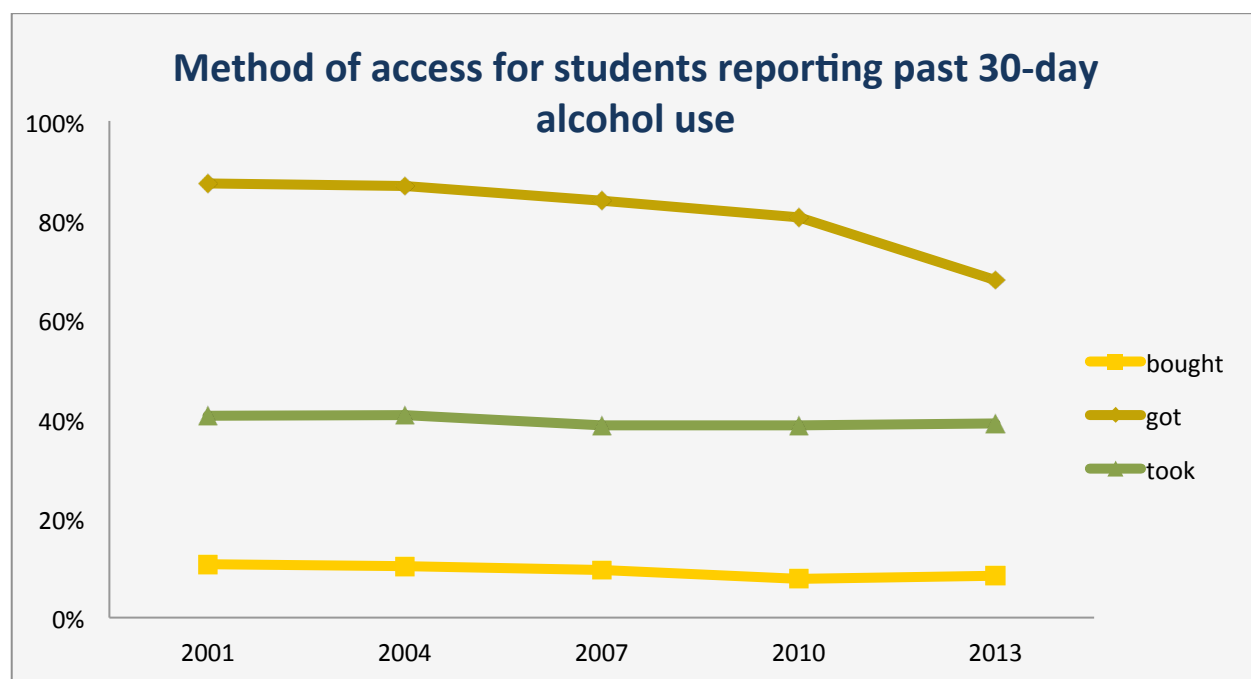
Data Source: MSS

While Minnesota students tend to drink at a relatively low rate, their perception generally is that other students drink more than they actually do.

Students who believe most other students drink often are more likely to report drinking often, themselves.



Data Source: MSS



Method of Access for Students Reporting Past 30-Day Alcohol Use

| | 2001 | 2004 | 2007 | 2010 | 2013 |
|--|-------|-------|-------|-------|-------|
| Students reporting past 30 day alcohol use who "bought" the alcohol (from a store, bar, restaurant, or the internet) | 10.8% | 10.3% | 9.6% | 7.8% | 8.4% |
| Students reporting past 30 day alcohol use who "got" the alcohol (from a from friends, parents, other family members, someone buying for them, or parties) | 87.4% | 86.9% | 83.9% | 80.6% | 67.9% |
| Students reporting past 30 day alcohol use who "took" the alcohol (from their home, a friend's home, or from stores) | 40.7% | 40.8% | 38.7% | 38.7% | 39.1% |

NOTE: This question was not included in the 2016 version of the Minnesota Student Survey.

Recent Binge Drinking

About the Indicator

Binge drinking has been associated with alcohol-related injuries and deaths, as well as violence and crime. Up until 2006, BRFSS defined binge drinking as having 5 or more drinks in a row on one occasion. In 2006, binge drinking was defined as 5 or more drinks for males or 4 or more drinks for females in a row on one occasion. MNSASU used the later definition; both captured binge drinking in the past 30 days. NSDUH defined binge drinking as 5 or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days. (NSDUH stopped reporting binge drinking rates after the 2013-2014 survey.) MSS defined binge drinking as 5 or more drinks in a row on one occasion in the past 30 days (for males or females).

Adult is defined as persons aged 18 and older. Youth data from the MSS include 9th and 11th graders.

Data Source(s)

Adults

National Survey on Drug Use and Health (NSDUH), Behavioral Risk Factor Surveillance System (BRFSS), and the Minnesota Survey of Adult Substance Use (MNSASU)

Youth

Minnesota Student Survey (MSS)

Section Summary

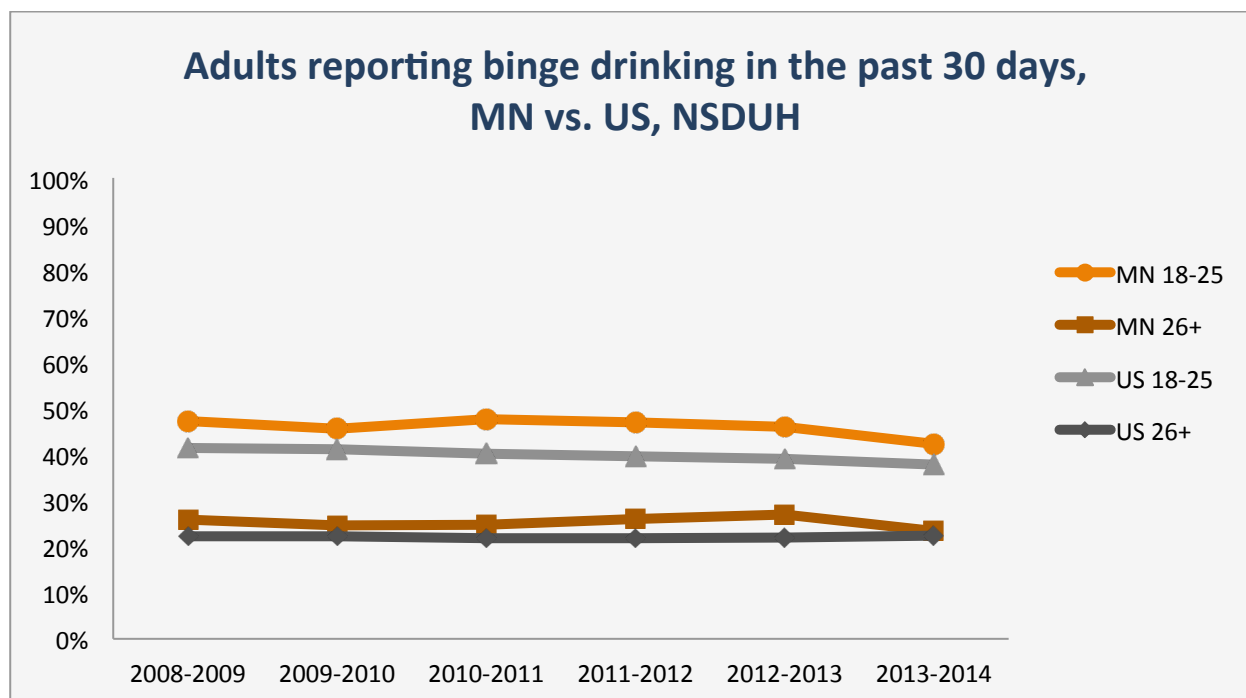
Adults

- Minnesotans report higher rates of binge drinking than the national average, although the trend shows a slight decrease in rates over the past 6 years.
- Males had higher rates of recent binge drinking than females, regardless of age, race/ethnicity, or region. Surveys broadly agree that young adult males binge drink at the highest rates.

Youth

- Binge drinking is more prevalent among older students than younger students, and is higher among males as compared to females.

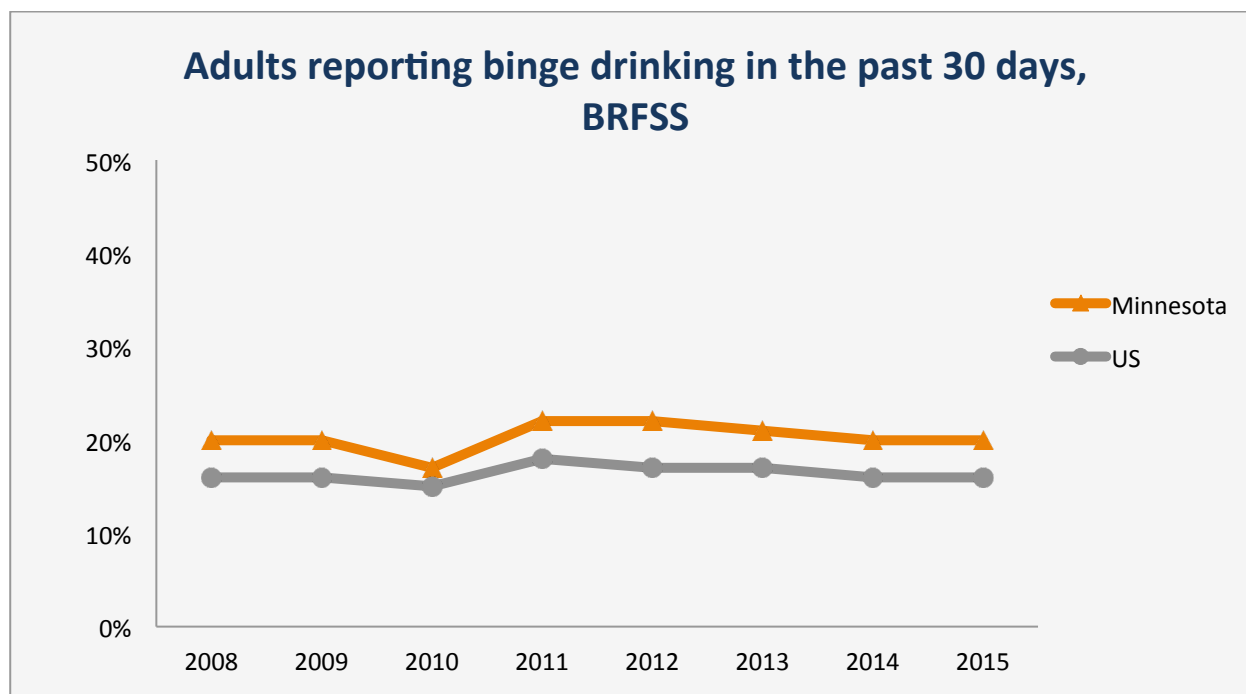
Data Source: NSDUH

**Adults Reporting Binge Drinking in the Past 30 Days**

| Minnesota | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Binge drinking 12+ | 26.9% | 25.9% | 26.2% | 26.9% | 27.1% | 24.1% |
| Ages 12 thru 17 | 8.0% | 7.9% | 8.3% | 7.9% | 6.6% | 5.1% |
| Ages 18 thru 25 | 47.2% | 45.6% | 47.7% | 46.9% | 45.5% | 42.3% |
| Ages 26 and Over | 25.8% | 24.7% | 24.7% | 25.9% | 26.6% | 23.4% |
| United States | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
| Binge drinking 12+ | 23.5% | 23.4% | 22.9% | 22.8% | 22.9% | 22.9% |
| Ages 12 thru 17 | 8.8% | 8.4% | 7.6% | 7.3% | 6.7% | 6.2% |
| Ages 18 thru 25 | 41.4% | 41.2% | 40.2% | 39.7% | 38.7% | 37.8% |
| Ages 26 and Over | 22.3% | 22.2% | 21.8% | 21.8% | 22.2% | 22.4% |
| MN:US rate ratio | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
| Binge drinking 12+ | 1.14 | 1.11 | 1.15 | 1.18 | 1.18 | 1.05 |

NOTE: NSDUH stopped reporting binge drinking rates after the 2013-2014 survey.

Data Source: BRFSS



Minnesota Adults Reporting Binge Drinking in the Past 30 Days by Gender, Age, and Race/Ethnicity

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|-----------------------|------------------|------|------|------|------|------|------|------|------|
| Gender | Male | 27% | 25% | 22% | 29% | 29% | 27% | 25% | 25% |
| | Female | 13% | 15% | 12% | 16% | 16% | 15% | 15% | 14% |
| Age | Ages 18 thru 24 | 29% | 28% | 20% | 33% | 32% | 30% | 29% | 30% |
| | Ages 25 thru 34 | 26% | 28% | 28% | 34% | 36% | 33% | 30% | 29% |
| | Ages 35 thru 44 | 28% | 24% | 21% | 26% | 26% | 23% | 24% | 25% |
| | Ages 45 thru 54 | 20% | 23% | 19% | 22% | 23% | 24% | 20% | 20% |
| | Ages 55 thru 64 | 12% | 14% | 11% | 14% | 13% | 15% | 14% | 14% |
| | Ages 65 and over | 3% | 4% | 4% | 5% | 5% | 4% | 5% | 5% |
| | | | | | | | | | |
| Race/Ethnicity | White | 20% | 21% | 18% | 23% | 23% | 22% | 20% | 20% |
| | Black | N/A | N/A | 8% | 17% | 12% | 20% | 12% | 10% |
| | Hispanic | N/A | 13% | 7% | 22% | 22% | 16% | 20% | 17% |
| | Other | N/A | N/A | N/A | 19% | 21% | 15% | 14% | 22% |
| | Multiracial | N/A | N/A | N/A | N/A | 25% | 28% | 24% | 26% |

N/A = Not available if the un-weighted sample size for the denominator was < 30 or the indicator was unavailable for the year.

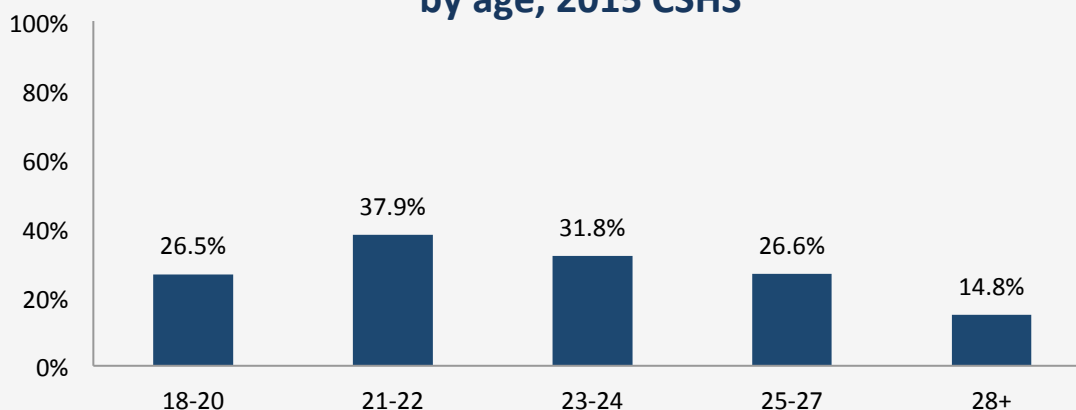
NOTE: Use caution in comparing 2011 estimates to those from 2010 or earlier. The addition of a cell-phone sample in 2011 may have resulted in significant mode effects.

Data Source: MNSASU

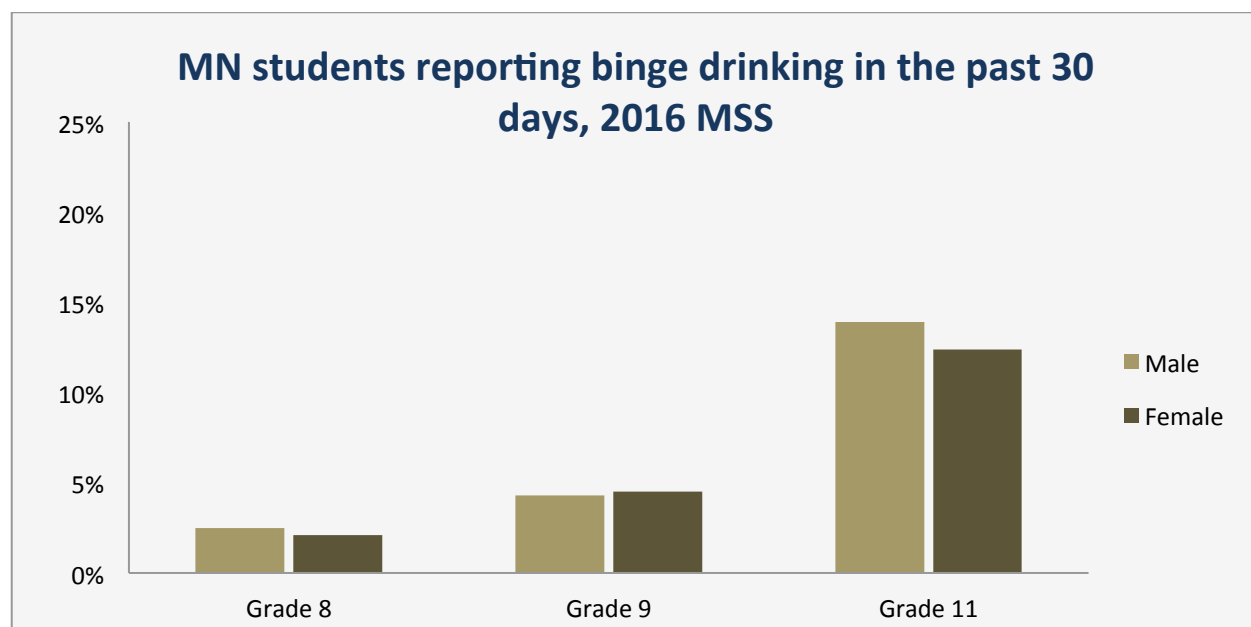
| Percent of Minnesota Adults Reporting Binge Drinking Within the Past 30 Days by Gender, Age, Race/Ethnicity, and Sexual Orientation, 2015 MNSASU | | 2004 | 2010 | 2015 |
|--|---|-------|-------|-------|
| Age | Ages 18 thru 24 | 35.2% | 33.4% | 27.8% |
| | Ages 25 thru 44 | 24.0% | 25.4% | 18.8% |
| | Ages 45 thru 64 | 13.3% | 13.2% | 10.3% |
| | Ages 65 and over | 2.7% | 2.5% | 2.1% |
| Race/Ethnicity | African American or Black | 9.5% | 9.8% | 6.8% |
| | American Indian | 30.5% | 20.3% | 16.1% |
| | Asian American/Pacific Islander | 13.0% | 5.8% | 8.1% |
| | Hispanic/Latino | 15.1% | 13.3% | 11.6% |
| | Bi-Racial/Multi-Racial | 20.2% | 25.1% | 18.5% |
| | White | 19.3% | 15.0% | 14.6% |
| Gender | Male | 24.3% | 23.4% | 17.9% |
| | Female | 13.4% | 13.3% | 10.2% |
| | Total | 18.8% | 18.2% | 13.9% |
| Sexual Orientation | Lesbian, Gay, Bisexual, and Transgender | N/A | N/A | 17.1% |
| | Heterosexual | N/A | N/A | 14.1% |

Note: Adults are defined as persons aged 18 and older. Total percent represents the total number of survey respondents reporting use divided by the total number of survey respondents who answered the question. Percent within an age group, for example, represents the total number of survey respondents in the age group reporting use, divided by the total number of survey respondents in that age group who answered the question.

MN adult college students' past 2-week binge drinking, by age, 2015 CSHS



Data Source: MSS



In 2013, the Minnesota Student Survey question on binge drinking changed from reporting binge drinking in the past 2 weeks, to reporting binge drinking in the past 30 days. This brought Minnesota in line with other national and state student surveys.

| Minnesota Students Reporting Binge Drinking in the Past 30 Days, 2016 | | | | |
|---|-------|-------|--------|-------|
| | Male | | Female | |
| | N (#) | % | N (#) | % |
| 8 th Grade | 503 | 2.5% | 437 | 2.1% |
| 9 th Grade | 845 | 4.3% | 898 | 4.5% |
| 11 th Grade | 2,240 | 13.9% | 2,027 | 12.4% |

Other Problematic Alcohol Use

About the Indicator

Other risky patterns of alcohol use measured in surveys include daily use and participation in drinking games. Daily alcohol use can pose an increased health risk depending on a combination of factors, including quantity consumed and family medical history. Heavy use of alcohol, as measured by the Behavioral Risk Factor Surveillance System (BRFSS), is defined as average daily alcohol consumption greater than 2 drinks for males and 1 drink for females.

Drinking games can lead to risky alcohol consumption, as they encourage participants to drink more in one sitting than they otherwise would, through peer pressure and competition. In 2015, the MNSASU asked how often respondents have participated in drinking games involving alcohol (for example: beer pong, flip cup, or card games) in the past 30 days.

Data Source(s)

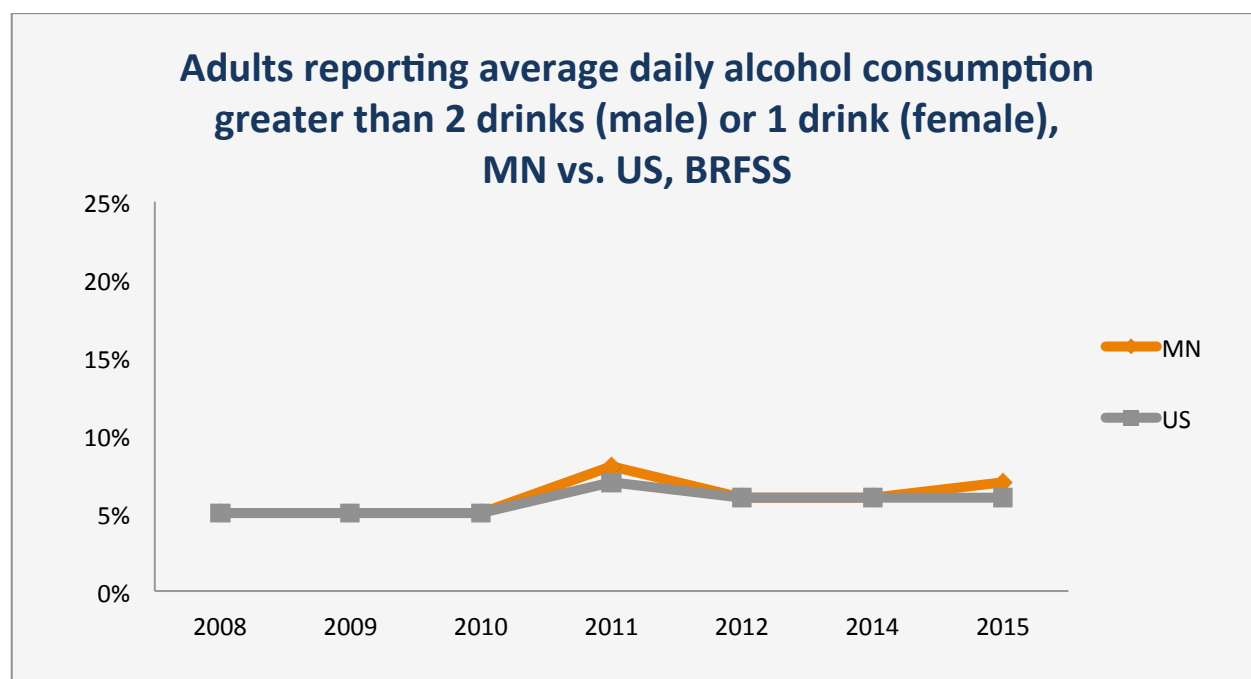
Adults

Behavioral Risk Factor Surveillance System (BRFSS), the Minnesota Survey of Adult Substance Use (MNSASU), and the College Student Health Survey (CSHS)

Section Summary

- Historically, Minnesota's heavy drinking rate has been similar to the national average.
- Minnesota women reported rates of heavy drinking as nearly as high as those of men in the state: 6% vs. 7%.
- Estimates of heavy drinking are highest among Minnesotans age 35-44, and are increasing.
- Drinking games are most prevalent in those aged 18 to 24.

Data Source: BRFSS

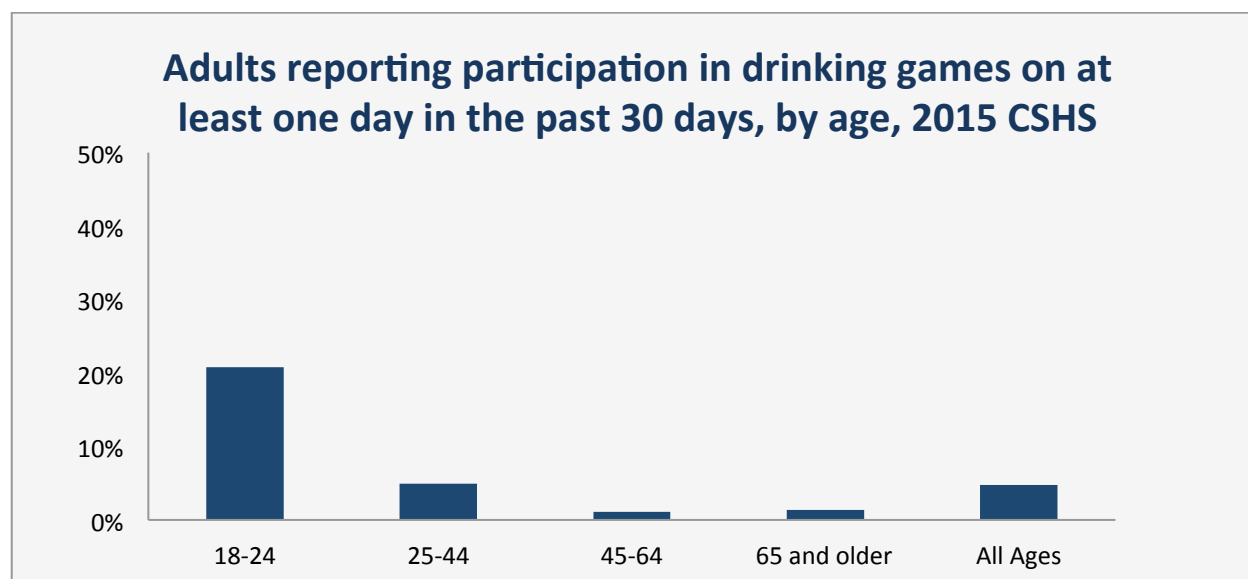


Minnesota Adults Reporting Average Daily Alcohol Consumption Greater than 2 Drinks (Male) or Greater than 1 Drink (Female) Per Day

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|-----------------------|------------------|------|------|------|------|------|------|------|------|
| Gender | Male | 5% | 5% | 5% | 9% | 7% | 8% | 7% | 6% |
| | Female | 4% | 5% | 5% | 7% | 6% | 7% | 6% | 7% |
| Age | Ages 18 thru 24 | 3% | 5% | 7% | 11% | 8% | 6% | 7% | 9% |
| | Ages 25 thru 34 | 5% | 5% | 4% | 10% | 7% | 9% | 8% | 6% |
| | Ages 35 thru 44 | 5% | 4% | 4% | 7% | 6% | 7% | 6% | 8% |
| | Ages 45 thru 54 | 6% | 7% | 6% | 9% | 7% | 10% | 7% | 7% |
| | Ages 55 thru 64 | 5% | 6% | 5% | 7% | 6% | 8% | 7% | 7% |
| | Ages 65 and over | 3% | 2% | 3% | 4% | 4% | 4% | 5% | 4% |
| | | | | | | | | | |
| Race/Ethnicity | White | 5% | 5% | 5% | 8% | 6% | 8% | 7% | 7% |
| | Black | 3% | 4% | 1% | 7% | 6% | N/A | N/A | N/A |
| | Hispanic | 6% | 1% | 3% | N/A | N/A | N/A | N/A | N/A |
| | Other | N/A | 1% | 5% | 4% | 7% | N/A | 3% | N/A |
| | Multiracial | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 10% |

Data Source: MNSASU

| Adults reporting participation in drinking games on at least one day in the past 30 days, 2015 MNSASU | | |
|---|----------------------------------|-------|
| | | 2015 |
| Age | Ages 18 thru 24 | 20.8% |
| | Ages 25 thru 44 | 4.9% |
| | Ages 45 thru 64 | 1.1% |
| | Ages 65 and over | 1.4% |
| Race/Ethnicity | African American or Black | * |
| | American Indian | * |
| | Asian American/ Pacific Islander | 5.3% |
| | Hispanic/Latino | 2.8% |
| | Bi-Racial/Multi-Racial | * |
| | White | 5.0% |
| Gender | Male | 5.4% |
| | Female | 4.1% |
| | Total | 4.8% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | 6.3% |
| | Heterosexual | 4.9% |



Self-Reported Impaired Driving

About the Indicator

As a depressant, alcohol use interferes with coordination, judgment and reaction time. The following data sources contain reported behavior of impaired driving or riding with an impaired driver. Penalties related to impaired driving are included in the upcoming section. Adult is defined as persons aged 18 and older. Youth include 9th and 11th graders.

Data Source(s)

Adults

Behavioral Risk Factor Surveillance System (BRFSS)

Youth

Minnesota Student Survey (MSS)

Section Summary

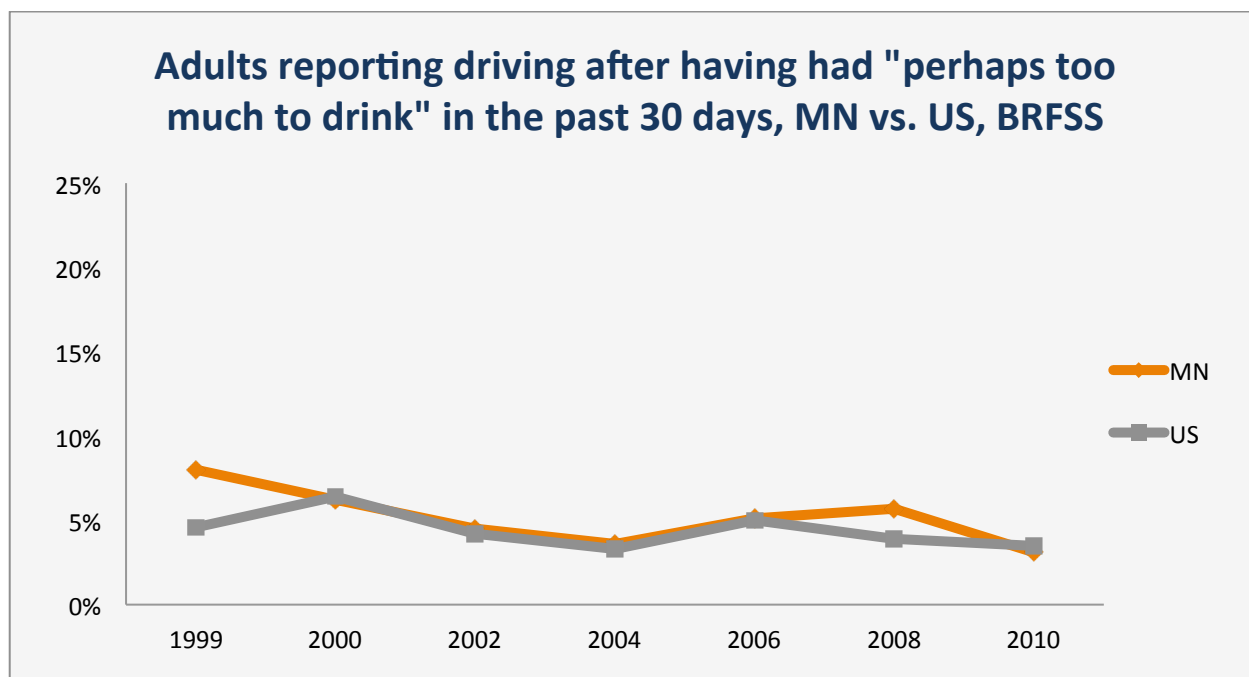
Adults

- From 1999 to 2010, rates of reported impaired driving among Minnesota adults were similar to national rates—both rising after 2004, but with an overall decline since 1999.

Youth

- 9th graders reporting impaired driving has decreased steadily since 1998.

Data Source: BRFSS

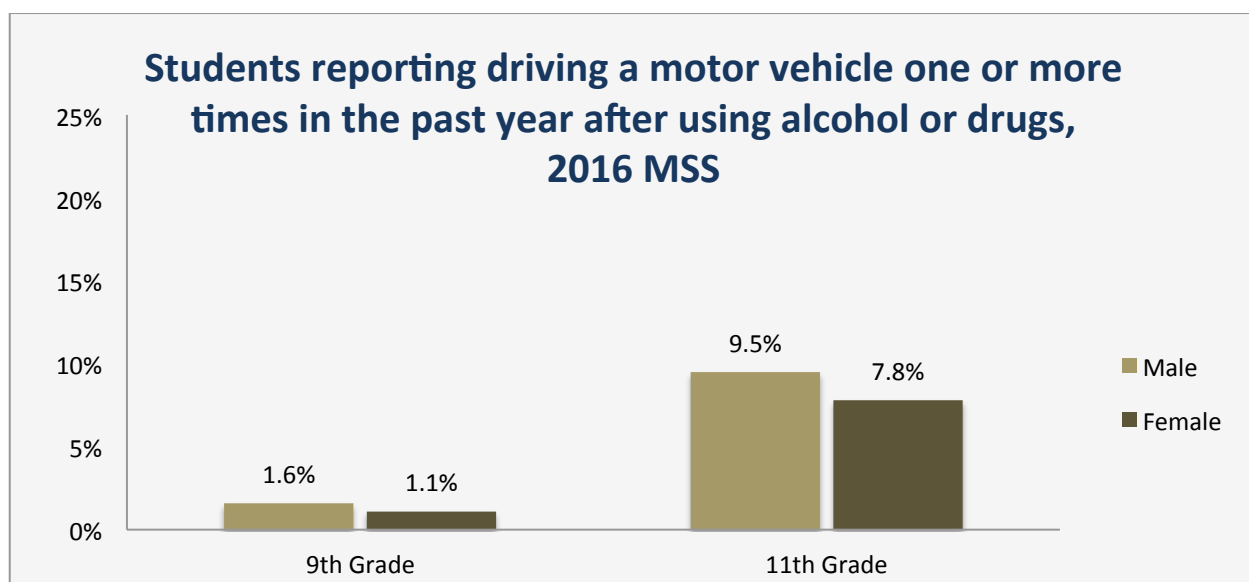
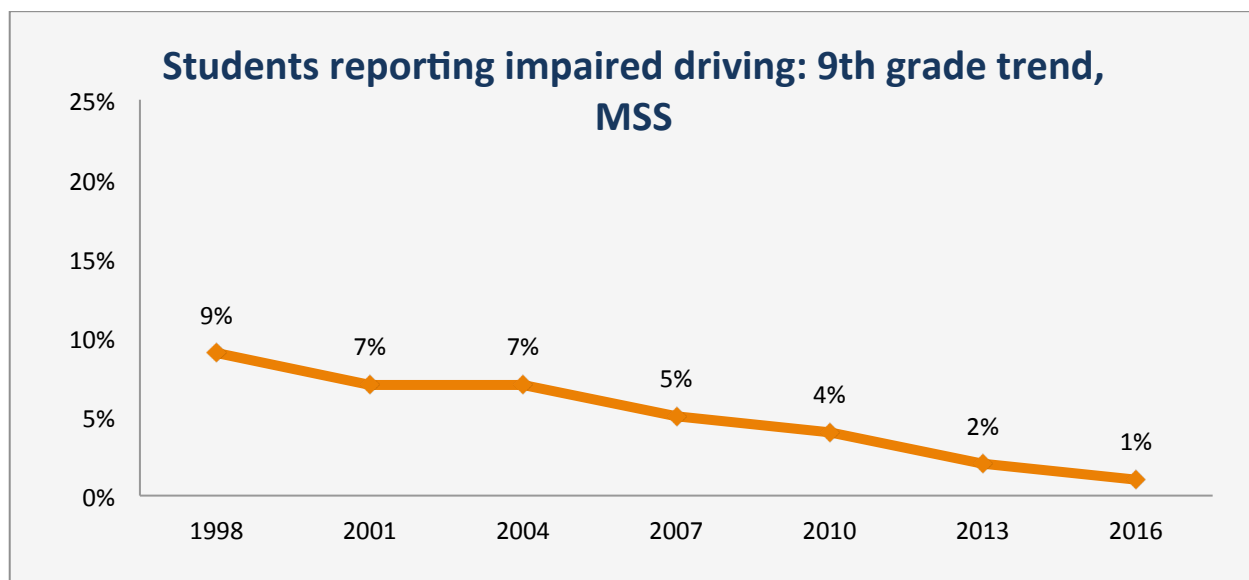


Adults Reporting Driving After Having Had "Perhaps Too Much to Drink" in the Past 30 Days

| | 1999 | 2000 | 2002 | 2004 | 2006 | 2008 | 2010 |
|--------|------|------|------|------|------|------|------|
| MN | 8.0% | 6.2% | 4.5% | 3.6% | 5.1% | 5.7% | 3.1% |
| US | 4.6% | 6.4% | 4.2% | 3.3% | 5.0% | 3.9% | 3.5% |
| MN:US* | 1.7 | 0.97 | 1.07 | 1.09 | 1.02 | 1.46 | 0.89 |

NOTE: This question was not included in the survey after 2010.

Data Source: MSS



Students Reporting Driving a Motor Vehicle 1 or More Times in the Last 12 Months After Using Alcohol or Drugs, 2016 MSS

| | Male | | Female | | Total | |
|------------|-------|------|--------|------|-------|------|
| Grade | N (#) | % | N (#) | % | N (#) | % |
| 9th Grade | 315 | 1.6% | 224 | 1.1% | 539 | 1.3% |
| 11th Grade | 1545 | 9.5% | 1292 | 7.8% | 2837 | 8.7% |
| Total | 1860 | 5.1% | 1516 | 4.1% | 3376 | 4.6% |

Alcohol in Minnesota: Consequences

Alcohol-Attributable Deaths

About the Indicator

The Centers for Disease Control and Prevention (CDC) calculates Alcohol-Related Disease Impact (ARDI) estimates of alcohol-related deaths due to alcohol consumption. To do this, ARDI either calculates or uses pre-determined estimates of Alcohol-Attributable Fractions (AAFs)— the proportion of deaths from various causes that are due to alcohol. These AAFs are then multiplied by the number of deaths caused by a specific condition (e.g., liver cancer) to obtain the number of alcohol-attributable deaths.

Data Source(s)

Alcohol-Related Disease Impact (ARDI)

Section Summary

- Alcohol-attributable deaths among males are more than double that of females in both Minnesota and the US.
- A majority of alcohol-related deaths are from acute causes, particularly motor vehicle traffic crashes, fall injuries, and suicides.

Data Source: Alcohol-Attributable Disease Impact (ARDI)

Alcohol Attributable Deaths Due to Excessive Alcohol Use, Average for 2006-2010, All Ages

| | Minnesota | | | United States | | |
|---|------------|------------|--------------|---------------|---------------|---------------|
| | Male | Female | Total | Male | Female | Total |
| Total for All Causes | 850 | 419 | 1,269 | 62104 | 25693 | 87,798 |
| Chronic Causes | | | | | | |
| Acute pancreatitis | 6 | 4 | 9 | 411 | 313 | 724 |
| Alcohol abuse | 19 | 5 | 24 | 1,587 | 435 | 2,022 |
| Alcohol cardiomyopathy | 5 | 0 | 5 | 441 | 73 | 514 |
| Alcohol dependence syndrome | 56 | 18 | 74 | 2,892 | 836 | 3,728 |
| Alcohol polyneuropathy | 0 | 0 | 0 | 7 | 0 | 7 |
| Alcohol-induced chronic pancreatitis | 0 | 0 | 0 | 59 | 23 | 82 |
| Alcoholic gastritis | 0 | 0 | 0 | 23 | 6 | 29 |
| Alcoholic liver disease | 146 | 66 | 212 | 10,403 | 3,961 | 14,364 |
| Alcoholic myopathy | N/A | N/A | N/A | 1 | 0 | 1 |
| Alcoholic psychosis | 12 | 2 | 14 | 502 | 151 | 653 |
| Breast cancer (females only) | 0 | 6 | 6 | 0 | 391 | 391 |
| Cholelithiasis | 0 | 0 | 0 | 0 | 0 | 0 |
| Chronic hepatitis | 0 | 0 | 0 | 1 | < 1 | 1 |
| Chronic pancreatitis | 1 | 1 | 2 | 139 | 116 | 255 |
| Degeneration of nervous system due to alcohol | 0 | 0 | 0 | 104 | 22 | 126 |
| Epilepsy | 1 | 1 | 2 | 108 | 95 | 203 |
| Esophageal cancer | 6 | 1 | 7 | 437 | 55 | 492 |
| Esophageal varices | 0 | 0 | 0 | 47 | 18 | 65 |
| Fetal alcohol syndrome | N/A | N/A | N/A | 3 | 1 | 4 |
| Fetus/newborn affected by maternal use of alcohol | N/A | N/A | N/A | 1 | 1 | 2 |
| Gastroesophageal hemorrhage | < 1 | 0 | < 1 | 19 | 12 | 31 |
| Hypertension | 7 | 8 | 15 | 874 | 729 | 1,603 |
| Ischemic heart disease | 4 | 2 | 6 | 516 | 223 | 739 |
| Laryngeal cancer | 2 | < 1 | 3 | 198 | 33 | 231 |
| Liver cancer | 9 | 4 | 13 | 752 | 245 | 997 |
| Liver cirrhosis unspecified | 51 | 40 | 91 | 4,592 | 3,255 | 7,847 |
| Low birth weight prematurity IUGR death | 1 | 1 | 2 | 106 | 60 | 166 |
| Oropharyngeal cancer | 3 | 1 | 4 | 309 | 56 | 365 |
| Portal hypertension | 0 | 0 | 0 | 24 | 14 | 38 |
| Prostate cancer (males only) | 4 | 0 | 4 | 202 | 0 | 202 |
| Psoriasis | 0 | < 1 | < 1 | < 1 | < 1 | < 1 |
| Spontaneous abortion (females only) | N/A | N/A | N/A | 0 | < 1 | < 1 |
| Stroke hemorrhagic | 19 | 4 | 23 | 1,357 | 286 | 1,643 |
| Stroke ischemic | 7 | 2 | 9 | 329 | 118 | 447 |
| Supraventricular cardiac dysrhythmia | 2 | 4 | 6 | 122 | 160 | 282 |
| Subtotal | 352 | 165 | 517 | 26,564 | 11,689 | 38,253 |

Data Source: Alcohol-Attributable Disease Impact (ARDI)

| | Minnesota | | | United States | | |
|------------------------------------|-----------|--------|-------|---------------|--------|--------|
| | Male | Female | Total | Male | Female | Total |
| Acute Causes | | | | | | |
| Air-space transport | 1 | 0 | 1 | 81 | 15 | 96 |
| Alcohol poisoning | 36 | 14 | 50 | 1264 | 383 | 1647 |
| Aspiration | 2 | 1 | 3 | 125 | 94 | 220 |
| Child maltreatment | 1 | 1 | 2 | 98 | 70 | 167 |
| Drowning | 10 | 3 | 13 | 770 | 193 | 963 |
| Excessive blood alcohol level | 0 | 0 | 0 | 0 | 0 | 0 |
| Fall injuries | 103 | 120 | 223 | 3,853 | 3,688 | 7,541 |
| Fire injuries | 8 | 5 | 13 | 645 | 444 | 1,089 |
| Firearm injuries | < 1 | 0 | < 1 | 86 | 12 | 98 |
| Homicide | 37 | 12 | 49 | 6,221 | 1,535 | 7,756 |
| Hypothermia | 4 | 3 | 7 | 177 | 88 | 265 |
| Motor-vehicle non-traffic crashes | 5 | 1 | 6 | 171 | 49 | 220 |
| Motor-vehicle traffic crashes | 120 | 39 | 159 | 9,764 | 2,696 | 12,460 |
| Occupational and machine injuries | 3 | 0 | 3 | 126 | 8 | 134 |
| Other road vehicle crashes | 2 | < 1 | 2 | 146 | 38 | 184 |
| Poisoning (not alcohol) | 51 | 25 | 76 | 5,457 | 2,947 | 8,404 |
| Suicide | 106 | 26 | 132 | 6,460 | 1,719 | 8,179 |
| Suicide by and exposure to alcohol | 0 | 0 | 0 | 28 | 14 | 42 |
| Water transport | 1 | 0 | 1 | 69 | 10 | 79 |
| Subtotal | 490 | 250 | 740 | 35,540 | 14,004 | 49,544 |

Note: Alcohol-Related Disease Impact (ARDI) software generates estimates of alcohol-related deaths and Years of Potential Life Lost (YPLL) due to alcohol consumption. To do this, ARDI either calculates or uses pre-determined estimates of Alcohol-Attributable Fractions (AAFs)—that is, the proportion of deaths from various causes that are due to alcohol. These AAFs are then multiplied by the number of deaths caused by a specific condition (e.g., liver cancer) to obtain the number of **alcohol-attributable** deaths. Numbers may not sum exactly to totals due to rounding. ARDI assigns a value of <1 when there was exactly one death from a condition that is not 100% alcohol-attributable (i.e., a condition with an AAF <1).

Years of Potential Life Lost Due to Excessive Alcohol Use, Average for 2006-2010, All Ages

| | Male | Female | Total |
|---------------|-----------|---------|-----------|
| Minnesota | 22,918 | 9,911 | 32,829 |
| United States | 1,847,072 | 713,218 | 2,560,290 |

Note: Total for all causes. Data on life expectancy are obtained from the National Vital Statistics System managed by the National Center for Health Statistics (<http://www.cdc.gov/nchs>). Life expectancy data were also stratified by age and gender using standard 5-year age groupings. These life expectancy data were, in turn, used to estimate the YPLL for alcohol-attributable deaths. Since YPLL is based on the age at death, the YPLL for a particular alcohol-related condition is directly related to the age distribution of the persons who typically die of that condition. As a result, YPLL generally tends to be higher for conditions that disproportionately affect youth and young adults (e.g., motor-vehicle traffic deaths) and lower for conditions that primarily affect older adults (e.g., ischemic heart disease).

Fatal Alcohol-Related Motor Vehicle Crashes

About the Indicator

As a depressant, alcohol use interferes with coordination, judgment and reaction time and can have fatal consequences. Driving while impaired puts the driver and others at risk.

The following measures report the number of fatal alcohol related crashes and number of deaths in which at least one driver, pedestrian, or cyclist has been drinking.

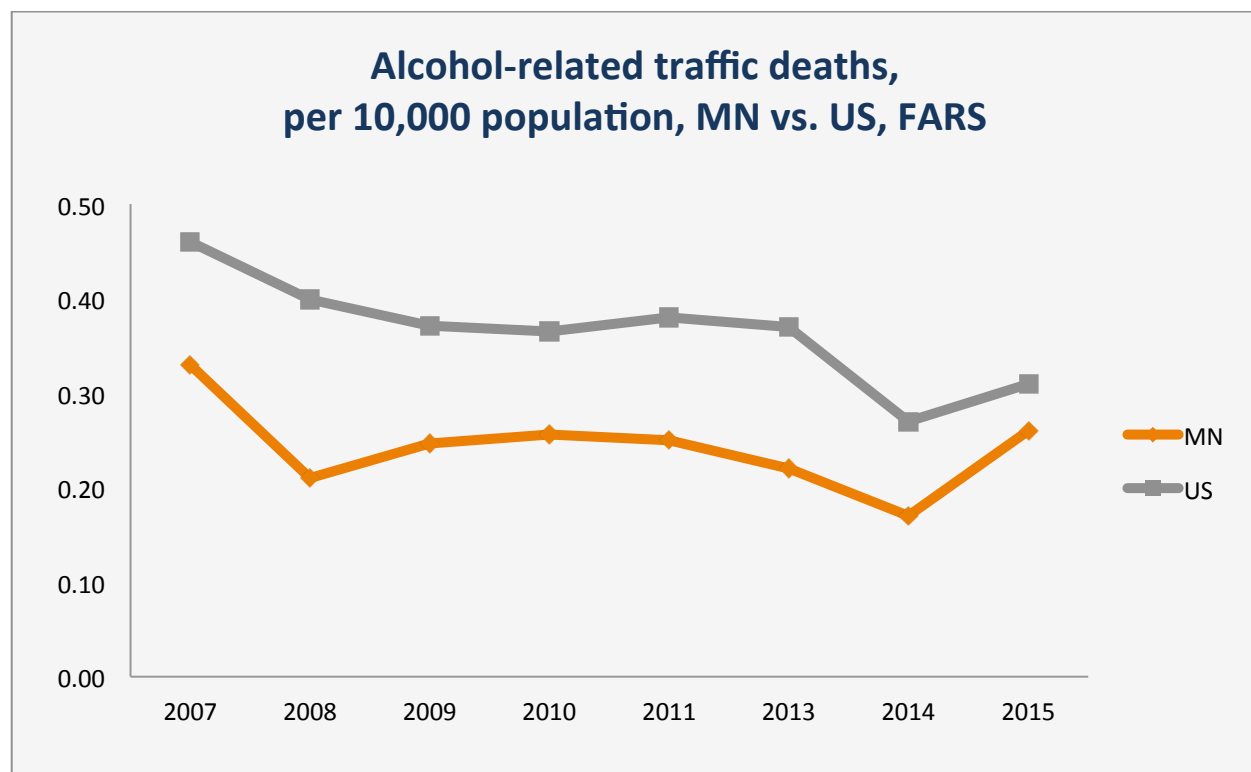
Data Source(s)

Minnesota Office of Traffic Safety (OTS), and US Fatality Analysis Reporting System (FARS)

Section Summary

- About one-third of all fatal motor vehicle crashes in Minnesota are alcohol-related.
- Minnesota consistently has had a lower rate of fatal alcohol-related traffic crashes than the US as a whole, although rates are converging.
- In 2015, of 379 Minnesotans killed in motor vehicle crashes; 144 deaths were alcohol-related.
- The number of drivers killed in alcohol-related crashes generally decreased in the early 2000s, and then remained steady for about 4 years before rising again in 2015.

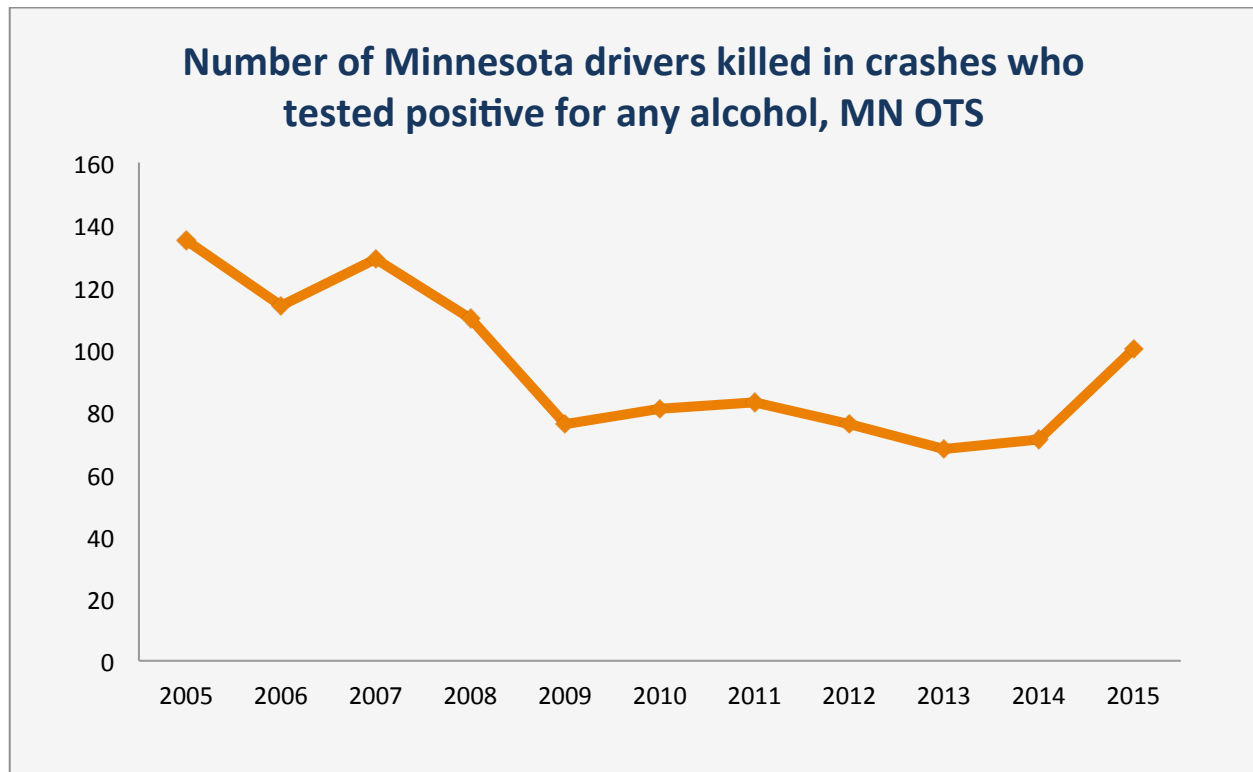
Data Source: FARS



Alcohol-Related Traffic Deaths (0.08 BAC or higher) per 10,000 Population

| Minnesota | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| Number of persons killed in fatal alcohol-related crashes | 173 | 132 | 141 | 131 | 136 | 131 | 117 | 92 | 144 |
| Percent of persons killed in all fatal crashes in MN | 34% | 29% | 34% | 32% | 37% | 33% | 30% | 28% | 38% |
| Rate per 10,000 population | 0.33 | 0.25 | 0.21 | 0.25 | 0.26 | 0.25 | 0.22 | 0.17 | 0.26 |
| United States | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Number of persons killed in fatal alcohol-related crashes | 13,841 | 11,711 | 12,149 | 11,462 | 11,388 | 11,960 | 11,615 | 8,527 | 9,982 |
| Percent of persons killed in all fatal crashes in US | 32% | 31% | 36% | 35% | 35% | 35% | 35% | 28% | 31% |
| Rate per 10,000 population | 0.46 | 0.39 | 0.40 | 0.37 | 0.37 | 0.38 | 0.37 | 0.27 | 0.31 |
| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| MN:US | 0.72 | 0.64 | 0.53 | 0.67 | 0.70 | 0.65 | 0.54 | 0.63 | 0.83 |

Data Source: Minnesota Office of Traffic Safety

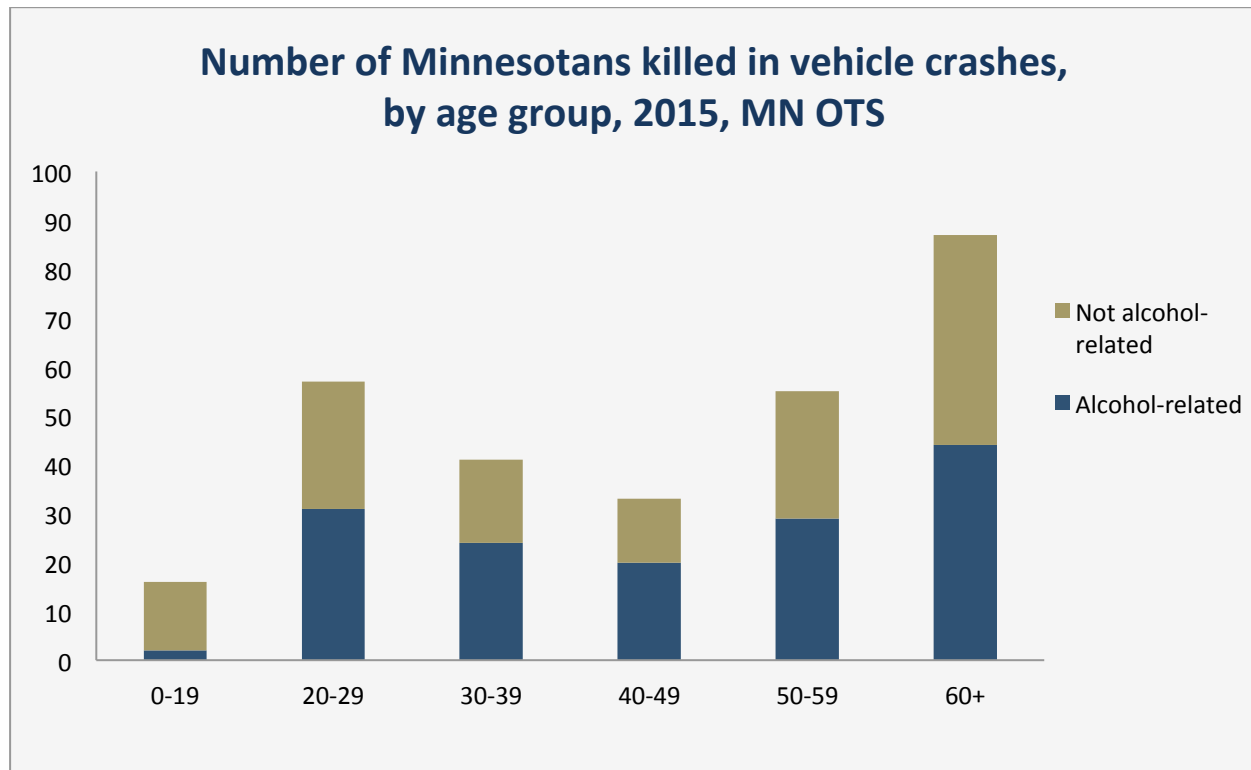


Number of Minnesota Drivers Killed in Crashes, by Blood Alcohol Content

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Drivers who tested 0.01 or higher (any alcohol) | 135 | 114 | 129 | 110 | 76 | 81 | 83 | 76 | 68 | 71 | 100 |
| Drivers who tested over the legal limit (0.08+) | 118 | 99 | 114 | 95 | 63 | 75 | 72 | 71 | 58 | 63 | 78 |

Alcohol: Consequences

Data Source: Minnesota Office of Traffic Safety

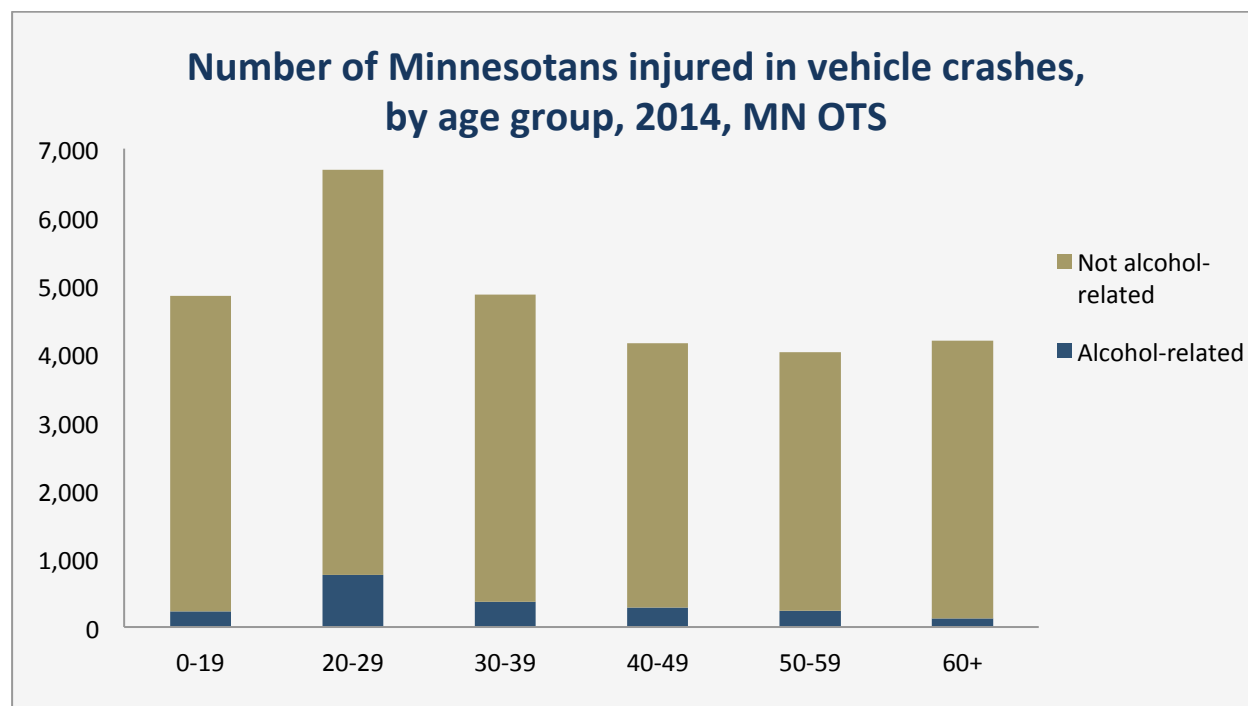


Number of Minnesotans Killed in All Crashes and in Alcohol-Related Crashes (0.01 BAC or Higher), by Age Group

| Age Group | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | |
|-----------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related |
| 0-19 | 61 | 12 | 49 | 17 | 49 | 6 | 47 | 10 | 28 | 4 | 16 | 2 |
| 20-29 | 90 | 48 | 86 | 52 | 89 | 37 | 77 | 41 | 71 | 32 | 57 | 31 |
| 30-39 | 52 | 20 | 33 | 11 | 53 | 29 | 46 | 23 | 55 | 20 | 41 | 24 |
| 40-49 | 53 | 17 | 41 | 15 | 49 | 19 | 41 | 12 | 46 | 19 | 33 | 20 |
| 50-59 | 57 | 18 | 54 | 20 | 55 | 21 | 63 | 20 | 67 | 23 | 55 | 29 |
| 60+ | 98 | 11 | 105 | 21 | 99 | 17 | 112 | 11 | 94 | 13 | 87 | 44 |

Alcohol: Consequences

Data Source: Minnesota Office of Traffic Safety



Number of Minnesotans Injured in All Crashes and in Alcohol-Related Crashes (0.01 BAC or Higher), by Age Group

| Age Group | 2009 | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | |
|-----------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|-------------|-----------------|
| | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related | All Crashes | Alcohol-Related |
| 0-19 | 6,258 | 355 | 6,053 | 353 | 5,504 | 280 | 5,354 | 340 | 5,135 | 297 | 4,842 | 227 |
| 20-29 | 7,495 | 1,017 | 7,469 | 926 | 7,215 | 913 | 6,890 | 1,016 | 7,127 | 799 | 6,695 | 765 |
| 30-39 | 4,669 | 463 | 4,782 | 435 | 4,744 | 429 | 4,460 | 490 | 5,034 | 464 | 4,862 | 368 |
| 40-49 | 4,425 | 369 | 4,468 | 355 | 4,405 | 344 | 4,091 | 344 | 4,288 | 306 | 4,148 | 282 |
| 50-59 | 3,771 | 232 | 3,855 | 248 | 3,847 | 241 | 3,872 | 263 | 4,231 | 259 | 4,024 | 238 |
| 60+ | 2,474 | 76 | 3,841 | 134 | 3,857 | 143 | 4,018 | 172 | 4,201 | 149 | 4,186 | 130 |

Impaired Driving Violations

About the Indicator

As a depressant, alcohol use interferes with coordination. Driving with a blood alcohol concentration (BAC) of 0.08% or higher (0.04% or higher for drivers operating a commercial vehicle) is a violation of Minnesota Statute 169.A. Violations for driving while intoxicated (DWIs), also called driving under the influence (DUIs), are entered directly on driver license records maintained by the Minnesota Department of Public Safety. DWIs are also reported to the federal Department of Justice by the Minnesota Bureau of Criminal Apprehension as part of its Uniform Crime Reports (UCR).

In 2015, the Minnesota Office of Traffic Safety reported 22,790 DWIs. According to Uniform Crime Reports, there were 20,995 arrests. The discrepancy is due to different reporting procedures for the two systems. The higher number is more accurate, as it is taken from driver license records. UCR counts are low because not all law enforcement agencies report all their DWI arrests to the Bureau of Criminal Apprehension, and because the counts include only arrests where the most serious offense was the DWI. All states make comparable UCR reports to the US Department of Justice; thus, the UCR DWI counts can be used to compare Minnesota statistics to those of the entire US.

Data Source(s)

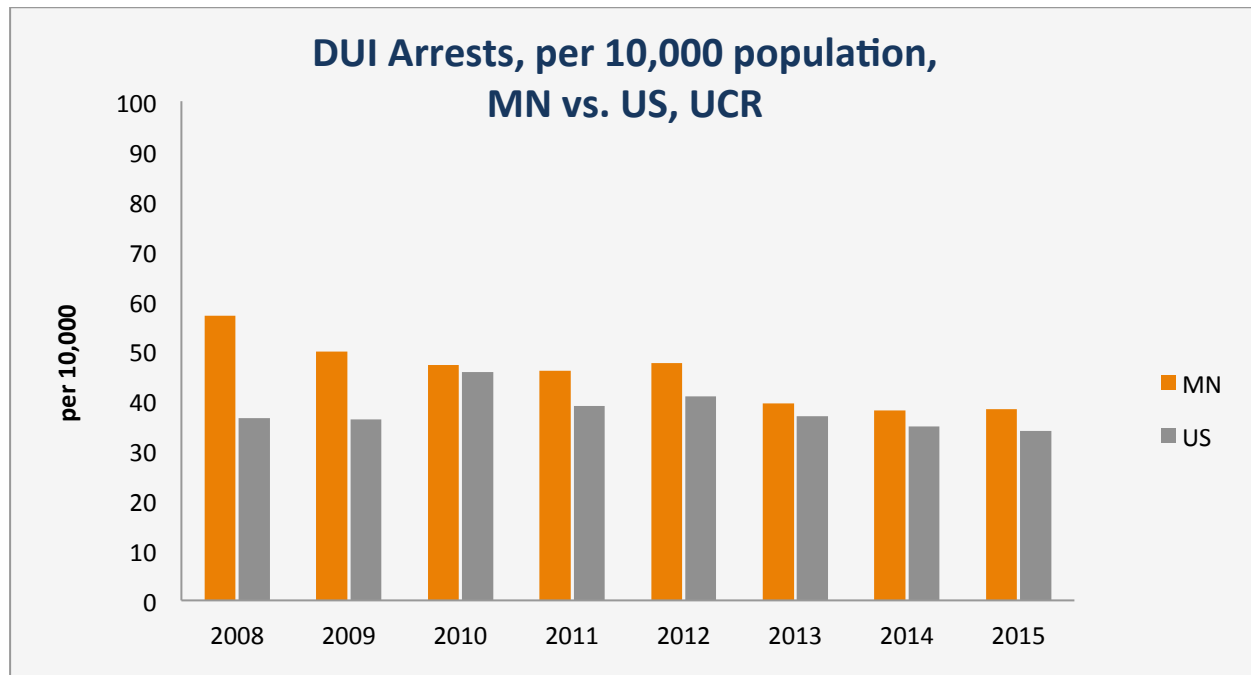
The following statistics on gender and age groups of those arrested for DWI are from the Office of Traffic Safety of the Minnesota Department of Public Safety, and are derived from entries on Minnesota driver license records. The statistics on the total number of DWI arrests, the rate per 1,000 population, juvenile versus adult, race and ethnicity, are from the Bureau of Criminal Apprehension's Uniform Crime Reports (UCR).

Section Summary

- DUI arrests are more prevalent among males, and are most prevalent among individuals age 20-24, compared to other age groups.
- Minnesota's DUI arrest rate has decreased steadily since 2006, nearly achieving parity with national DUI arrest rates.

Alcohol: Consequences

Data Source: UCR



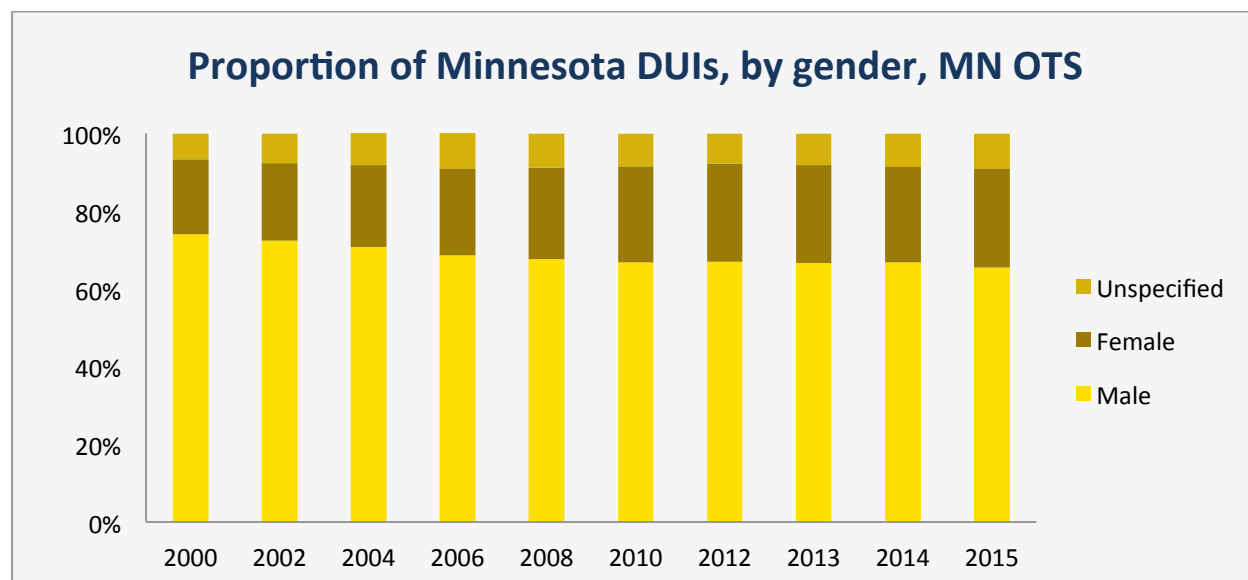
Arrests for DUI per 10,000 Population

| Minnesota* | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| DUI arrests | 29,832 | 26,240 | 24,978 | 24,548 | 25,537 | 21,409 | 20,656 | 20,995 |
| Rate per 10,000 population | 57 | 49.8 | 47.1 | 46 | 47.5 | 39.5 | 38.1 | 38.3 |
| United States | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| DUI arrests | 1,110,083 | 1,112,384 | 1,412,223 | 1,215,077 | 1,282,957 | 1,166,824 | 1,117,852 | 1,089,171 |
| Rate per 10,000 population | 36.5 | 36.2 | 45.7 | 39 | 40.9 | 36.9 | 34.8 | 33.9 |
| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| MN:US | 1.6 | 1.4 | 1 | 1.18 | 1.16 | 1.07 | 1.10 | 1.13 |

* St. Paul Police Department does not submit Part II arrest data to the BCA. Includes only arrests where the most serious offense was the Driving Under the Influence offense

Alcohol: Consequences

Data Source: MN Office of Traffic Safety



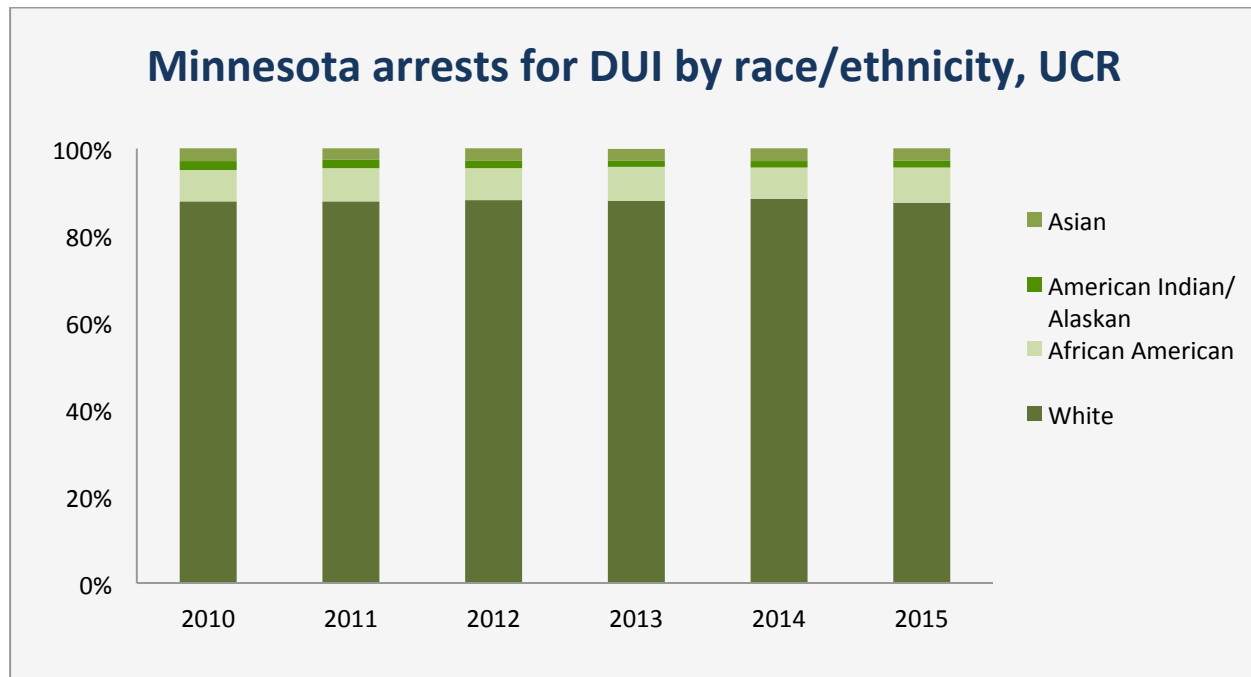
Minnesota Arrests for DUI, by Gender and Age: Violator Data

| | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | |
|--------|--------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| | | N (#) | % | N (#) | % | N (#) | % | N (#) | % | N (#) | % | N (#) | % |
| Gender | Male | 19,982 | 66.8% | 19,851 | 67.8% | 19,035 | 67.0% | 17,130 | 66.6% | 16,908 | 66.9% | 16,422 | 65.5% |
| | Female | 7,410 | 24.8% | 19,851 | 24.9% | 7,156 | 25.2% | 6,497 | 25.3% | 6,189 | 24.5% | 6,368 | 25.4% |
| | | | | | | | | | | | | | |
| Age | 0-14 | 4 | 0.0% | 1 | 0.0% | 4 | 0.0% | 1 | 0.0% | 0 | 0.0% | 0 | 0.0% |
| | 15-19 | 1,294 | 4.3% | 1,154 | 3.9% | 1,117 | 3.9% | 868 | 3.4% | 783 | 3.1% | 787 | 3.1% |
| | 20-24 | 6,821 | 22.8% | 6,505 | 22.2% | 6,413 | 22.6% | 5,478 | 21.3% | 5,110 | 20.2% | 4,908 | 19.6% |
| | 25-29 | 5,776 | 19.3% | 5,837 | 20.0% | 5,421 | 19.1% | 5,023 | 19.5% | 4,842 | 19.2% | 4,881 | 19.5% |
| | 30-34 | 3,934 | 13.1% | 3,895 | 13.3% | 3,950 | 13.9% | 3,766 | 14.6% | 3,592 | 14.2% | 3,553 | 14.2% |
| | 35-39 | 2,918 | 9.8% | 2,778 | 9.5% | 2,627 | 9.2% | 2,596 | 10.1% | 2,711 | 10.7% | 2,789 | 11.1% |
| | 40-44 | 2,671 | 8.9% | 2,671 | 9.1% | 2,665 | 9.4% | 2,236 | 8.7% | 2,267 | 9.0% | 2,117 | 8.5% |
| | 45-49 | 2,565 | 8.6% | 2,393 | 8.2% | 2,212 | 7.8% | 1,950 | 7.6% | 1,864 | 7.4% | 1,873 | 7.5% |
| | 50-54 | 1,914 | 6.4% | 1,904 | 6.5% | 1,839 | 6.5% | 1,779 | 6.9% | 1,799 | 7.1% | 1,797 | 7.2% |
| | 55-59 | 1,086 | 3.6% | 1,084 | 3.7% | 1,090 | 3.8% | 1,041 | 4.0% | 1,175 | 4.7% | 1,226 | 4.9% |
| | 60-64 | 543 | 1.8% | 608 | 2.1% | 613 | 2.2% | 557 | 2.2% | 611 | 2.4% | 609 | 2.4% |
| | 65-69 | 234 | 0.8% | 231 | 0.8% | 271 | 1.0% | 245 | 1.0% | 318 | 1.3% | 290 | 1.2% |
| | 70-74 | 98 | 0.3% | 120 | 0.4% | 135 | 0.5% | 110 | 0.4% | 115 | 0.5% | 121 | 0.5% |
| | 75+ | 60 | 0.2% | 73 | 0.3% | 61 | 0.2% | 69 | 0.3% | 71 | 0.3% | 74 | 0.3% |

Note: In this table, for example, 69.7% for males in 2005 indicates that 69.7% % of all DUI arrests were of males. It does not mean that 69.7% of all males were arrested for DUI. Percentages do not total to 100%—if a person arrested for impaired driving does not have a Minnesota driver's license, then a record is created, but the new record does *not* show the person's gender.

Alcohol: Consequences

Data Source: UCR



Minnesota Arrests for DUI by Age, Race and Ethnicity*

| | | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | |
|-----------|--------------------------|--------|------|--------|------|--------|------|--------|------|--------|------|--------|------|
| | | N (#) | % | N (#) | % | N (#) | % | N (#) | % | N (#) | % | N (#) | % |
| Age | Juvenile | 310 | 1.2 | 283 | 1.2 | 260 | 1.1 | 205 | 1.0 | 193 | 0.9 | 155 | 0.7 |
| | Adult | 24,810 | 98.8 | 24,265 | 98.8 | 23,277 | 98.9 | 21,181 | 99.0 | 20,463 | 99.1 | 20,862 | 99.3 |
| Race | White | 22,074 | 87.9 | 21,566 | 87.9 | 20,725 | 88.1 | 18,824 | 88.0 | 18,257 | 88.4 | 18,394 | 87.5 |
| | African American | 1,815 | 7.2 | 1,867 | 7.6 | 1,738 | 7.4 | 1,669 | 7.8 | 1,513 | 7.3 | 1,717 | 8.2 |
| | American Indian/ Alaskan | 490 | 2 | 458 | 1.9 | 407 | 1.7 | 306 | 1.4 | 293 | 1.4 | 309 | 1.5 |
| | Asian | 741 | 2.9 | 657 | 2.7 | 667 | 2.8 | 587 | 2.7 | 593 | 2.9 | 597 | 2.8 |
| Ethnicity | Hispanic | 1,650 | 6.6 | 1,457 | 5.9 | 1,317 | 5.6 | 1,111 | 5.2 | 1,209 | 5.9 | N/A | N/A |
| | Non-Hispanic | 23,470 | 93.4 | 23,091 | 94.1 | 22,220 | 94.4 | 20,275 | 94.8 | 19,447 | 94.1 | N/A | N/A |

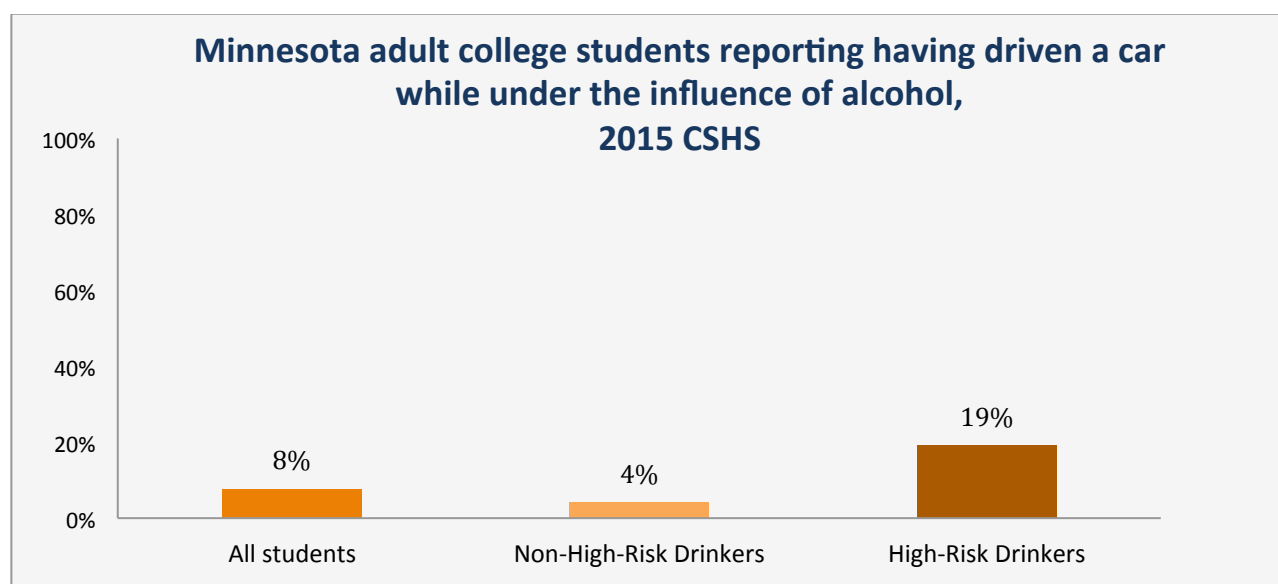
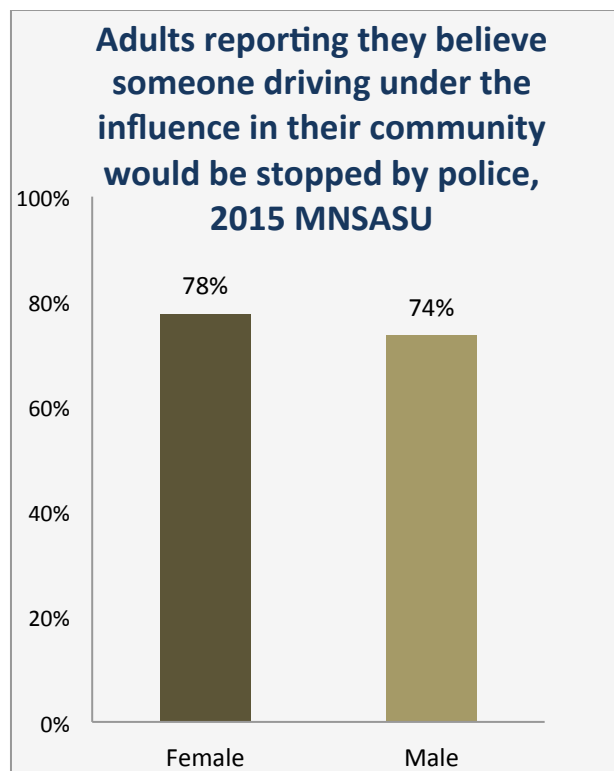
*Persons of Hispanic ethnicity can be of any race. UCR ceased using the Hispanic category after 2014.

St. Paul Police Department does not submit Part II arrest data to the BCA. Includes only arrests where the most serious offense was the Driving Under the Influence offense. Juveniles are defined as persons aged 17 and under; adults are defined as persons aged 18 and older.

Note: In this table, for example, 1.9% for juveniles in 2009 indicates that 1.9% of all DUI arrests were of juveniles. It does not mean that 1.9% of all juveniles were arrested for DUI.

Alcohol: Consequences

Data Source: CSHS and MNSASU



NOTE: High-risk drinkers are defined as adult students who have engaged in binge-drinking (5 or more drinks in one sitting) in the past 2 weeks.

Alcohol-Related Negative Consequences

About the Indicator

The number and severity of negative consequences experienced by drinkers may have an effect on consumption patterns. The College Student Health Survey, administered by the University of Minnesota to 17 colleges and universities in Minnesota, asks adult students about any negative consequences they may have experienced in the past year due to alcohol use. The available negative consequence responses on the survey are:

- Arrested for a DWI/DUI
- Criticized by Someone I Know
- Damaged Property, Pulled Fire Alarm, etc.
- Done Something I Later Regretted
- Driven a Car While Under the Influence
- Got Into an Argument or Fight
- Got Nauseated or Vomited
- Had a Hangover
- Had a Memory Loss
- Have Been Taken Advantage of Sexually
- Have Taken Advantage of Another Sexually
- Hurt or Injured
- Missed a Class
- Performed Poorly on a Test or Important Project
- Seriously Thought About Suicide
- Seriously Tried to Commit Suicide
- Thought I Might Have a Drinking Problem
- Tried Unsuccessfully to Stop Using
- Trouble with Police, Residence Hall, or Other University/College Authorities

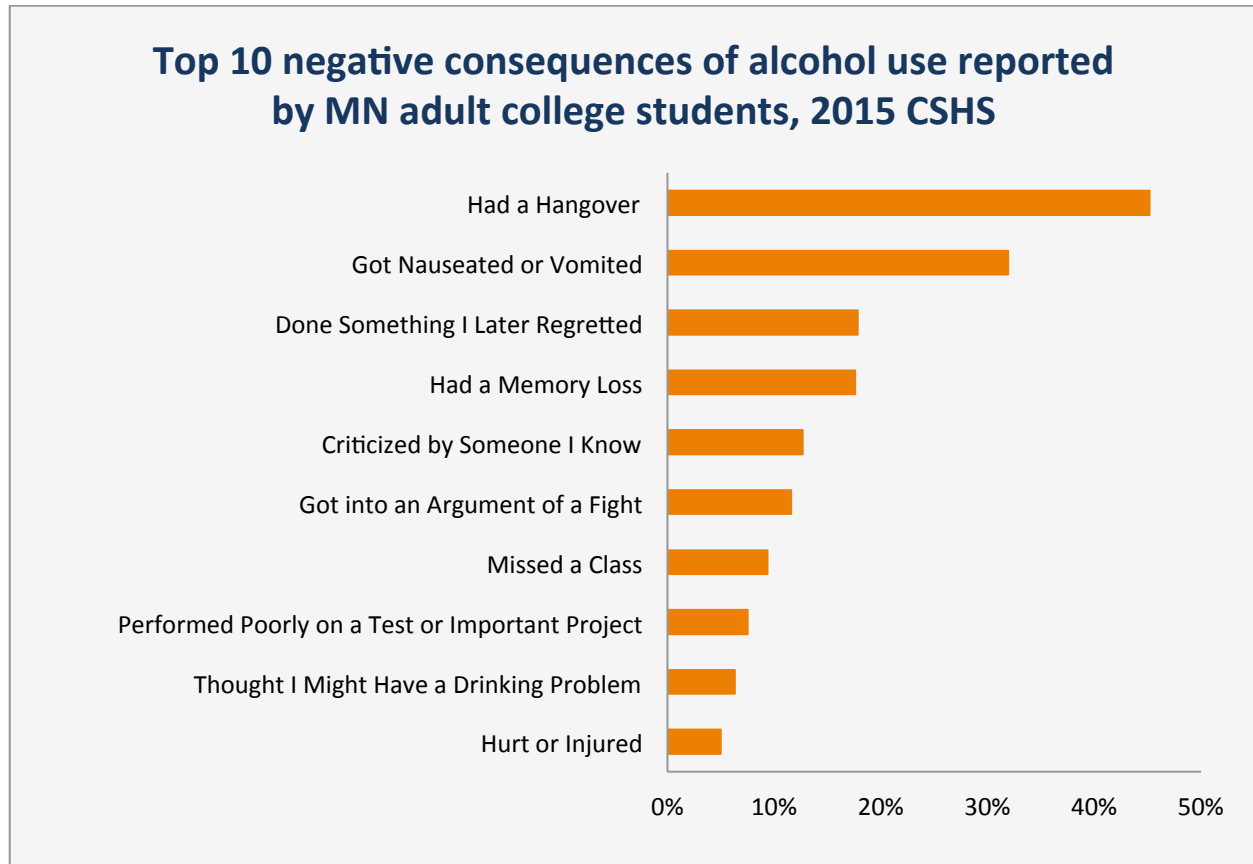
Data Source(s)

College Student Health Survey (CSHS)

Section Summary

- The most frequently reported negative consequence was a hangover.
- While not in the top 10 negative consequences, driving after drinking was reported by 7.6% of students.

Data Source: CSHS



Alcohol-Related Boating Citations

About the Indicator

In Minnesota, the Department of Natural Resources conservation officers and county sheriffs are charged with enforcing boating laws and regulations. Operating a motorboat while under the influence of alcohol, a controlled substance or other illegal chemical is unlawful. As on the roadways, on-water enforcement officers may administer sobriety and/or chemical tests to determine the influence of alcohol on the operator. The alcohol concentration for impaired operation is now 0.08.

As boating is a recreational activity, boating citation levels demonstrate a more elastic response to circumstances such as weather, water levels, and gas prices; therefore, boating citation levels vary more widely than citations for road vehicles.

These data are from all reporting agencies combined.

Citations do not include tickets for underage consumption, or those for which BAC was found to be under 0.08.

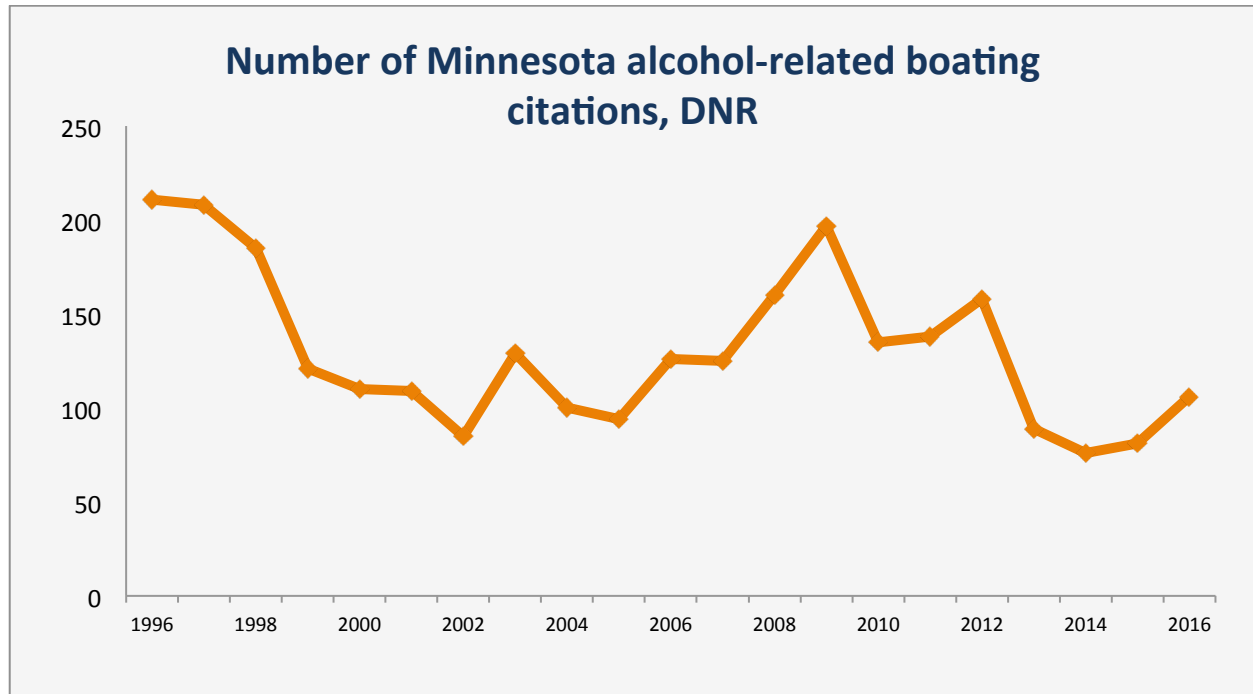
Data Source(s)

Minnesota Department of Natural Resources, Boat & Water Safety Section (obtained by request)

Section Summary

- The number of alcohol-related boating citations in Minnesota declined between 2007 and 2014, but then rose again in 2015 and 2016.

Data Source: Boat & Water Safety Section, DNR



Number of Minnesota Alcohol-Related Boating Citations

| Year | 2007 | 2008 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|
| Number of Citations | 125 | 160 | 160 | 197 | 135 | 138 | 158 | 89 | 76 | 81 | 106 |

Liquor Law Arrests

About the Indicator

With the exception of drunkenness and driving under the influence (DUI), all state or local liquor law violations are placed in this class. Liquor laws include manufacturing, selling, transporting and furnishing, as in maintaining unlawful drinking places. Bootlegging, operating a still, furnishing liquor to a minor and the using of a vehicle for illegal transportation of liquor are also included.

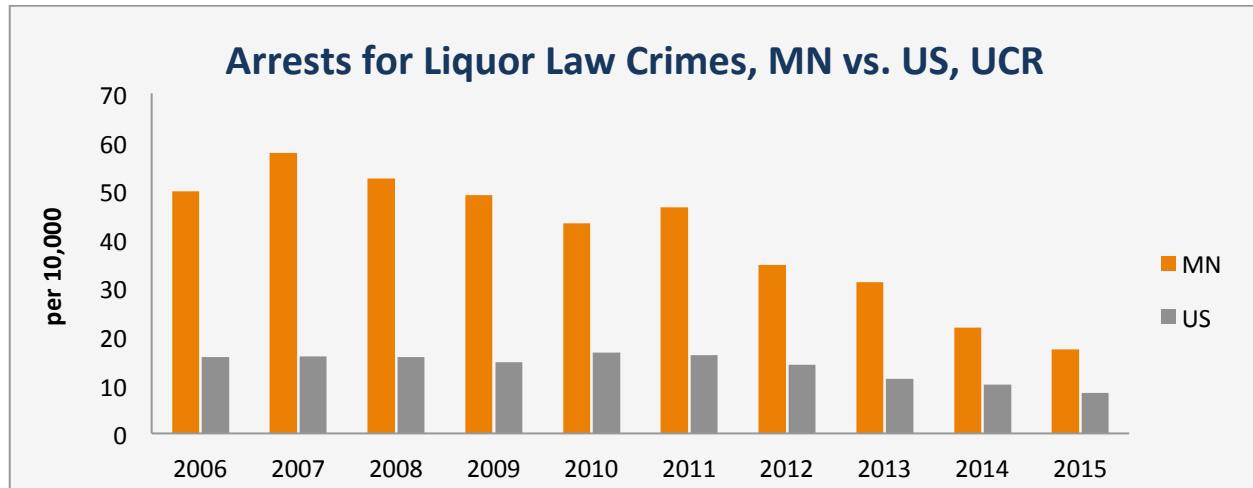
Data Source(s)

Uniform Crime Reports (UCR)

Section Summary

- Minnesota's liquor law arrest rate has been consistently higher than the U.S. average, but has been decreasing.
- The percent of liquor law arrestees in Minnesota who are juveniles has hovered near 21% for the last 5 years.

Data Source: UCR



Arrests for Liquor Law Crimes per 10,000 Population

| Minnesota* | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Liquor law arrests | 29,932 | 27,458 | 25,784 | 23,060 | 24,832 | 18,667 | 16,858 | 11,841 | 9,889 |
| Rate per 10,000 population | 57.7 | 52.5 | 49 | 43.2 | 46.6 | 34.7 | 31.1 | 21.8 | 17.3 |
| United States | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Liquor law arrests | 478,671 | 478,800 | 447,496 | 512,790 | 500,648 | 441,532 | 354,872 | 321,125 | 266,250 |
| Rate per 10,000 population | 15.9 | 15.7 | 14.6 | 16.6 | 16.1 | 14.1 | 11.2 | 10.0 | 8.3 |
| | 2007 | 2008 | 2008 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| MN:US | 3.63 | 3.34 | 3.36 | 2.6 | 2.89 | 2.46 | 2.78 | 2.19 | 2.08 |

St. Paul Police Department does not submit Part II arrest data to the BCA. Includes only arrests where the most serious offense was the liquor law offense.

Arrests for Liquor Law Crimes in Minnesota by Gender, Age, and Race/Ethnicity

| | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | |
|-----------|------------------|--------|------|--------|------|--------|------|--------|------|-------|------|
| | | N (#) | % | N (#) | % | N (#) | % | N (#) | % | N (#) | % |
| Age | Juvenile | 4,398 | 21.3 | 3,979 | 21.3 | 2,799 | 19.8 | 2,555 | 21.6 | 2,088 | 21.1 |
| | Adult | 16,262 | 78.7 | 14,688 | 78.7 | 11,347 | 80.2 | 9,286 | 78.4 | 7,801 | 78.9 |
| Race | White | 16,599 | 80.3 | 14,305 | 76.6 | 10,854 | 76.7 | 9,480 | 80.1 | 8,003 | 80.9 |
| | African American | 2,495 | 12.1 | 2,859 | 15.3 | 2,228 | 15.8 | 1,552 | 13.1 | 1,186 | 12.0 |
| | Indian/Alaskan | 1,188 | 5.8 | 1,073 | 5.7 | 819 | 5.8 | 485 | 4.1 | 494 | 5.0 |
| | Asian | 378 | 1.8 | 430 | 2.0 | 245 | 1.7 | 194 | 1.6 | 204 | 2.1 |
| | Hispanic | 1,111 | 5.4 | 953 | 5.1 | 772 | 5.5 | 711 | 6.0 | N/A | N/A |
| Ethnicity | Non-Hispanic | 19,549 | 94.6 | 17,714 | 94.9 | 13,374 | 94.5 | 11,130 | 94.0 | N/A | N/A |

Note: Persons of Hispanic ethnicity can be of any race. St. Paul Police Department does not submit Part II arrest data to the BCA.

Homicide

About the Indicator

Homicide is closely associated with alcohol abuse. The International Classification of Diseases (ICD-10) measures all homicides, many of which are attributable to substance abuse.

The Centers for Disease Control and Prevention (CDC) provides a measure of Alcohol-Attributable Fractions (AAFs). AAFs are based on direct observations about the relationship between alcohol and a given health outcome. The AAF for homicide for both males and females is 47%.

In order to provide comprehensive data on homicides, both measures are presented.

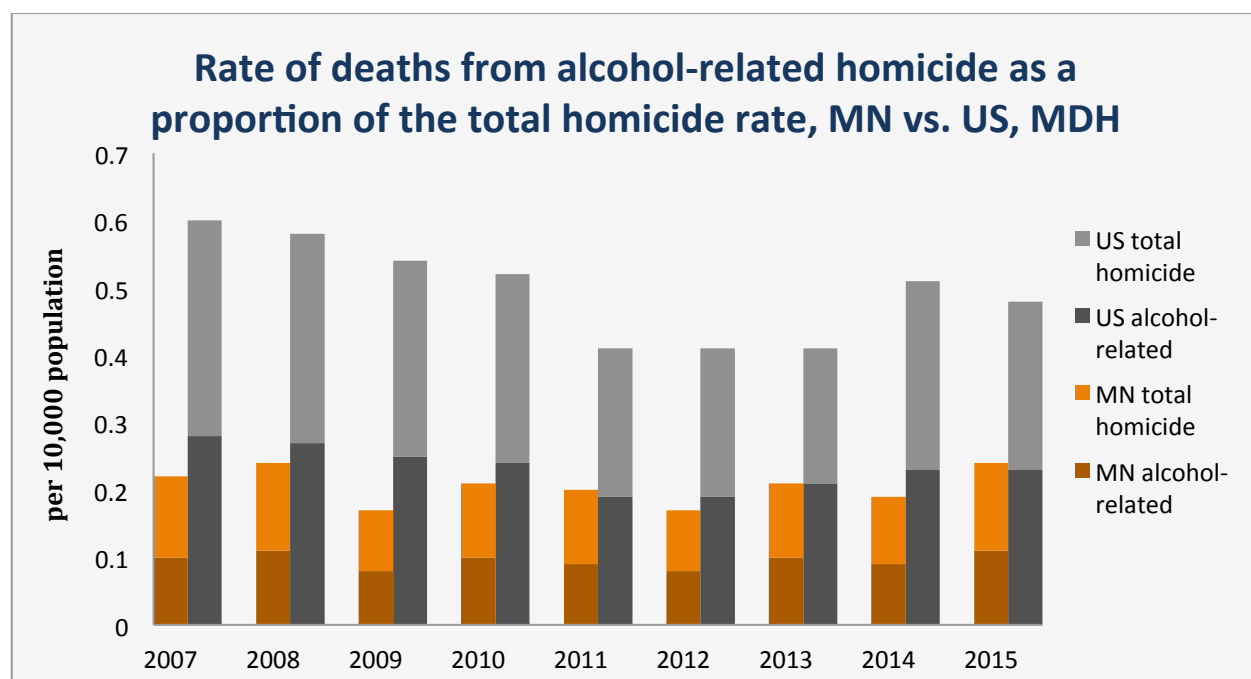
Data Source(s)

Minnesota Center for Health Statistics, Minnesota Department of Health, CDC Wonder Compressed Mortality Data, and the Alcohol-Related Disease Impact

Section Summary

- Minnesota's homicide rate is generally less than half that of the national average.
- The Minnesota homicide rate has stayed relatively stable between 2007 and 2015.

Data Source: Minnesota Department of Health and CDC Wonder



Deaths from Alcohol-Related* Homicide per 10,000 Population

| Minnesota | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Deaths from alcohol-related* Homicide | 55 | 60 | 42 | 51 | 49 | 43 | 52 | 47 | 61 |
| Rate per 10,000 population | 0.10 | 0.11 | 0.08 | 0.10 | 0.09 | 0.08 | 0.10 | 0.09 | 0.11 |
| United States | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Deaths from alcohol-related* Homicide | 8,630 | 8,263 | 7,779 | 7,524 | 5,952 | 6,000 | 6,672 | 7,430 | 7,377 |
| Rate per 10,000 population | 0.28 | 0.27 | 0.25 | 0.24 | 0.19 | 0.19 | 0.21 | 0.23 | 0.23 |
| MN:US** | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| MN:US** | 0.38 | 0.43 | 0.31 | 0.40 | 0.47 | 0.42 | 0.48 | 0.37 | 0.48 |

*= Alcohol-related homicide data are calculated using the AAF for homicide, 47%

Alcohol in Minnesota: Intervening Variables

Perception of Harm

About the Indicator

The Minnesota Student Survey (MSS) has asked students about their perceptions of the harm from alcohol use since 2007, and the same question was then added to the Minnesota Survey on Adult Substance Use (MNSASU) in 2010.

Both the adults and students taking these surveys were asked how much they thought people risked harming themselves physically or in other ways if they have 5 or more alcoholic drinks in a row on one occasion, once or twice per week. The statistics presented here show the number and percent of respondents who answered either “great risk” or “moderate risk” of harm. The other two selection options on the survey were “slight risk” and “no risk.”

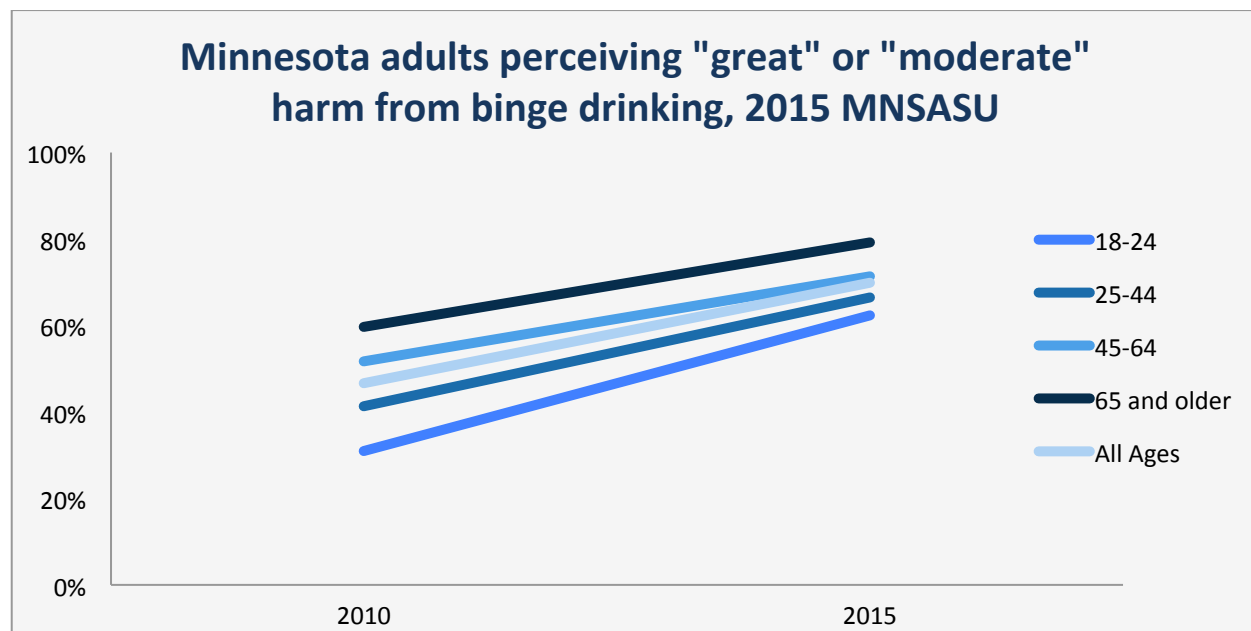
Data Source(s)

Minnesota Survey on Adult Substance Use (MNSASU), Minnesota Student Survey (MSS)

Section Summary

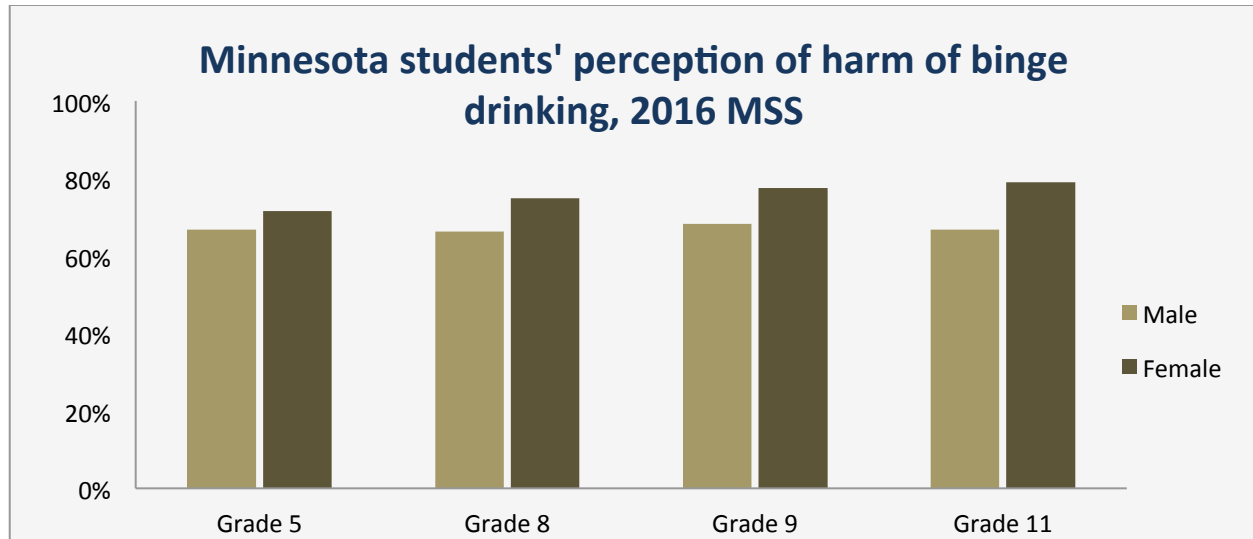
- Female students are more likely than male students to report that they believed people risked harming themselves by frequently binge drinking.
- Perception of harm from binge drinking is highest among 9th graders, but 11th grade girls are the most likely overall to perceive harm.

Data Source: MNSASU



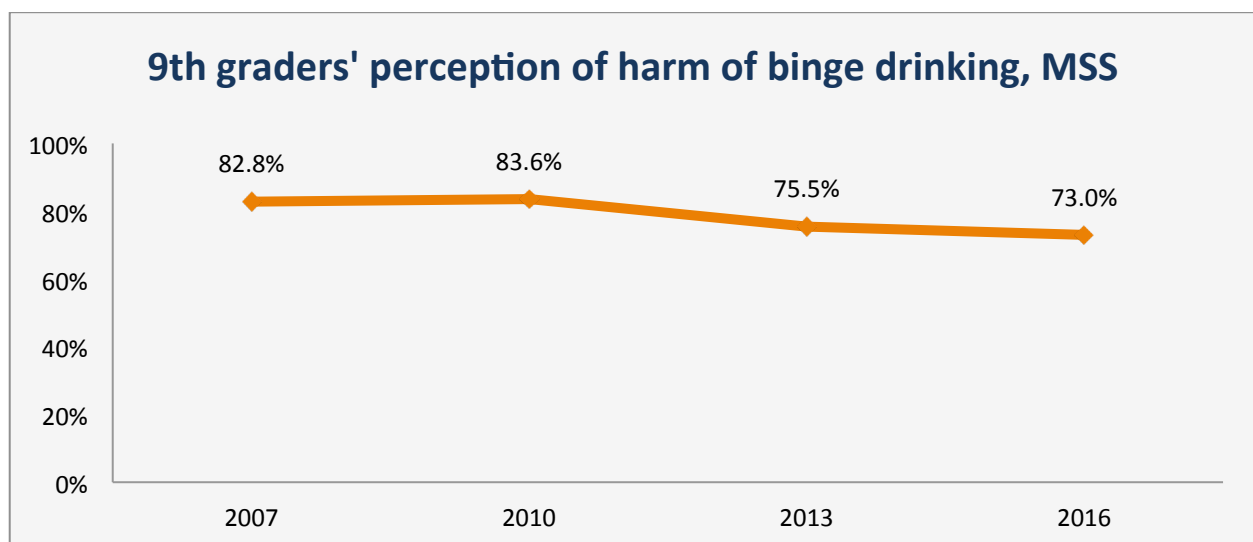
| Percent of Minnesota adults reporting a "great" or "moderate" perception of harm of binge drinking once or twice a week, 2015 MNSASU | | |
|--|---|-------|
| | | 2015 |
| Age | Ages 18 thru 24 | 62.4% |
| | Ages 25 thru 44 | 66.5% |
| | Ages 45 thru 64 | 71.3% |
| | Ages 65 and over | 79.2% |
| Race/Ethnicity | African American or Black | 75.9% |
| | American Indian | 62.6% |
| | Asian American/ Pacific Islander | 71.5% |
| | Hispanic/Latino | 79.7% |
| | Bi-Racial/Multi-Racial | 65.4% |
| | White | 69.3% |
| Gender | Male | 63.6% |
| | Female | 75.8% |
| | Total | 69.8% |
| Sexual Orientation | Lesbian, Gay, Bisexual, and Transgender | 73.0% |
| | Heterosexual | 70.0% |

Data Source: MSS



Students reporting they think people put themselves at "great" or "moderate" risk of harming themselves physically or in other ways if they have five or more drinks of an alcoholic beverage once or twice a week, 2016 MSS

| | Male | | Female | | Total | |
|----------|--------|-------|--------|-------|--------|-------|
| | N (#) | % | N (#) | % | N (#) | % |
| Grade 5 | 12,567 | 66.8% | 13,199 | 71.5% | 25,766 | 65.1% |
| Grade 8 | 13,063 | 66.3% | 14,949 | 74.8% | 28,012 | 72.1% |
| Grade 9 | 13,047 | 68.3% | 15,235 | 77.6% | 28,282 | 75.5% |
| Grade 11 | 10,469 | 66.8% | 12,705 | 79.0% | 23,174 | 74.7% |



Perception of Disapproval

About the Indicator

In 2010, students were asked how they thought their parents or guardians would feel if they drank alcohol. Students were also asked how they thought their parents or guardians would feel if they drank alcohol. The statistics presented here show the number and percent of students responding that their close friends would either “greatly disapprove” or “disapprove.” The other two selection options on the survey were “would not care at all” and “would approve.”

In the previous Minnesota Profile the students were asked how their close friends would feel about the same two questions, but if they had 5 or more alcoholic drinks in a row on one occasion, once or twice per week. If you would like to see those data, they are available on the SUMN.org website.

Data Source(s)

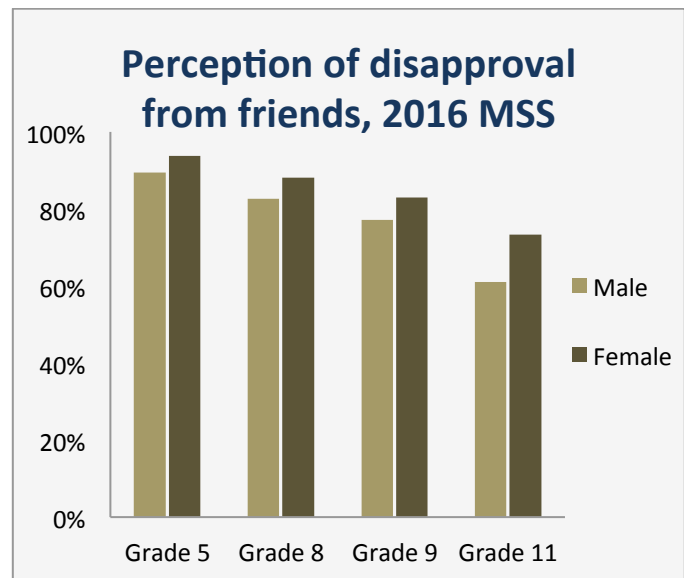
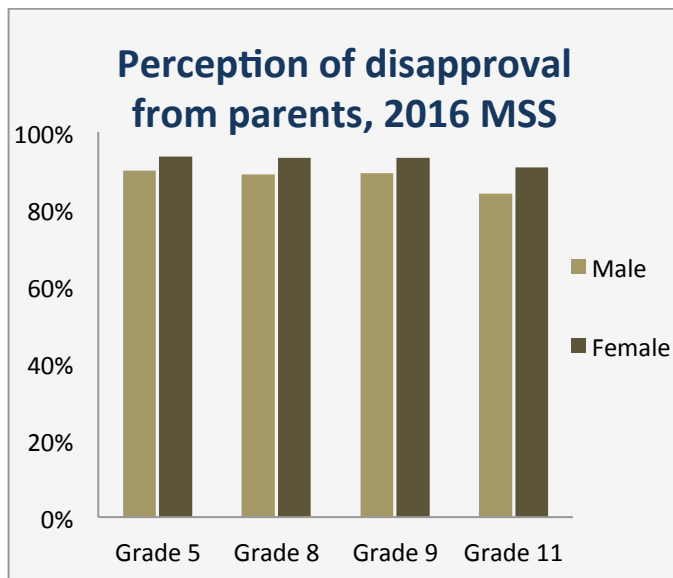
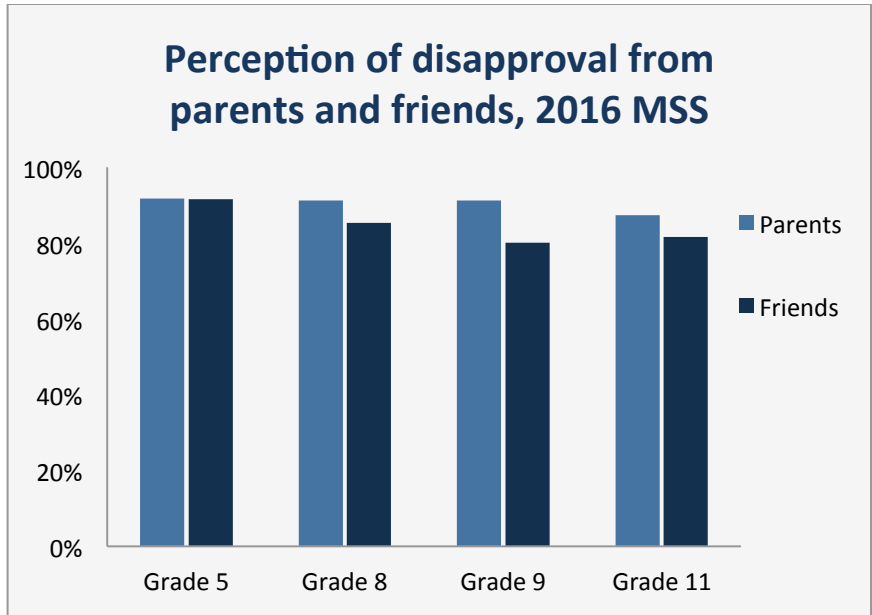
Minnesota Student Survey (MSS)

Section Summary

- Females were more likely than males to report that they believed their parents or guardians would disapprove of them drinking alcohol.
- Perception of parents’ or guardians’ disapproval decreased slightly with increasing grade level, while friends’ disapproval decreased substantially, for both male and female students.

Data Source: MSS

Perception of disapproval:
Students reported thinking their friends or parents would feel it was “very wrong” or “wrong” for them to have one or two drinks of an alcoholic beverage nearly every day



Social Norms and Use Perceptions

About the Indicator

Misperceptions about peer use may lead to skewed social norms: students who perceive their peers to be binge drinkers are more likely to be binge drinkers themselves. The association may work in both directions: those who binge-drink may be more likely to over-estimate others' binge drinking; and those who over-estimate levels of binge-drinking may be more likely to participate in the behavior themselves.

Adult college students were asked to estimate the percentage of students at their institution they thought had five or more drinks in a sitting, in the past 2 weeks (this behavior is referred to as "binge drinking" here). Comparisons were made between high-risk drinkers (those students that had engaged in binge drinking in the past 2 weeks); non-high-risk drinkers (those students that reported past 30-day alcohol use, but not binge drinking); and all students (drinkers and non-drinkers alike).

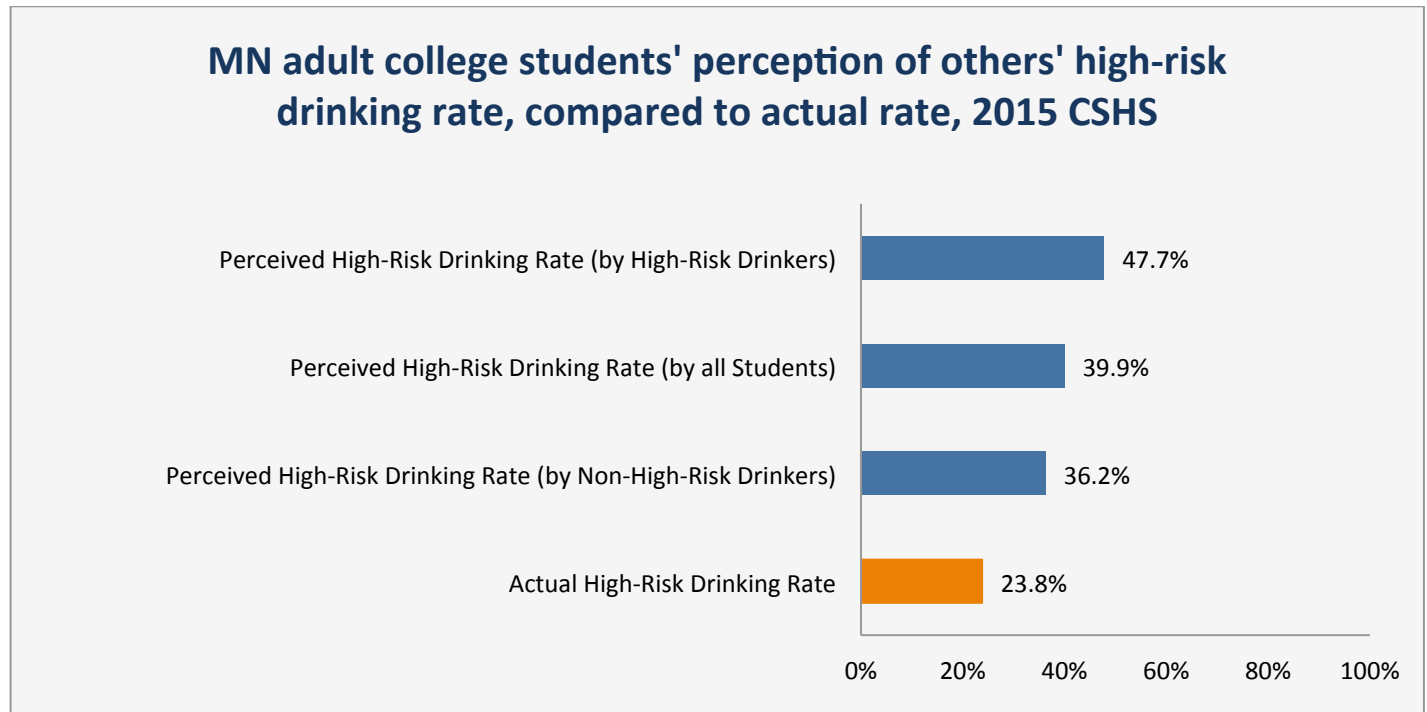
Data Source(s)

College Student Health Survey (CSHS)

Section Summary

- All categories of students over-estimated the percentage of students who binge drink.
- High-risk drinkers over-estimated the percentage of binge drinkers to be more than twice the actual rate.

Data Source: CSHS



2017



Substance Abuse in Minnesota: A State Epidemiological Profile

Section 4.

Tobacco and Nicotine:

Use, Consequences, and Intervening Variables

Prepared by: EpiMachine, LLC

**for the Minnesota Department of Human Services, Alcohol and
Drug Abuse Division**

Substance Abuse in Minnesota

Section 4. Tobacco and Nicotine:

Use, Consequences, and Intervening Variables

The 2017 Minnesota State EpiProfile is divided into seven parts:

- 1. Introduction (which includes a profile overview, population snapshot, and acknowledgements)**
- 2. Executive Summary**
- 3. Alcohol: Use, Consequences, and Intervening Variables**
- 4. Tobacco and Nicotine: Use, Consequences, and Intervening Variables**
- 5. Drugs: Use, Consequences, and Intervening Variables**
- 6. Mental Health and Shared Factors**
- 7. Appendix (which includes technical notes and data sources)**

Tobacco and Nicotine In Minnesota: Use

Adults Reporting Tobacco and Nicotine Use

About the Indicator

Current cigarette use is defined here as adults reporting smoking cigarettes on one or more days within the past 30 days. Daily cigarette use is defined as persons 18 and over having smoked 100 or more cigarettes in their lifetime, and who now smoke cigarettes every day.

MNSASU asked about e-cigarette use for the first time in 2015.

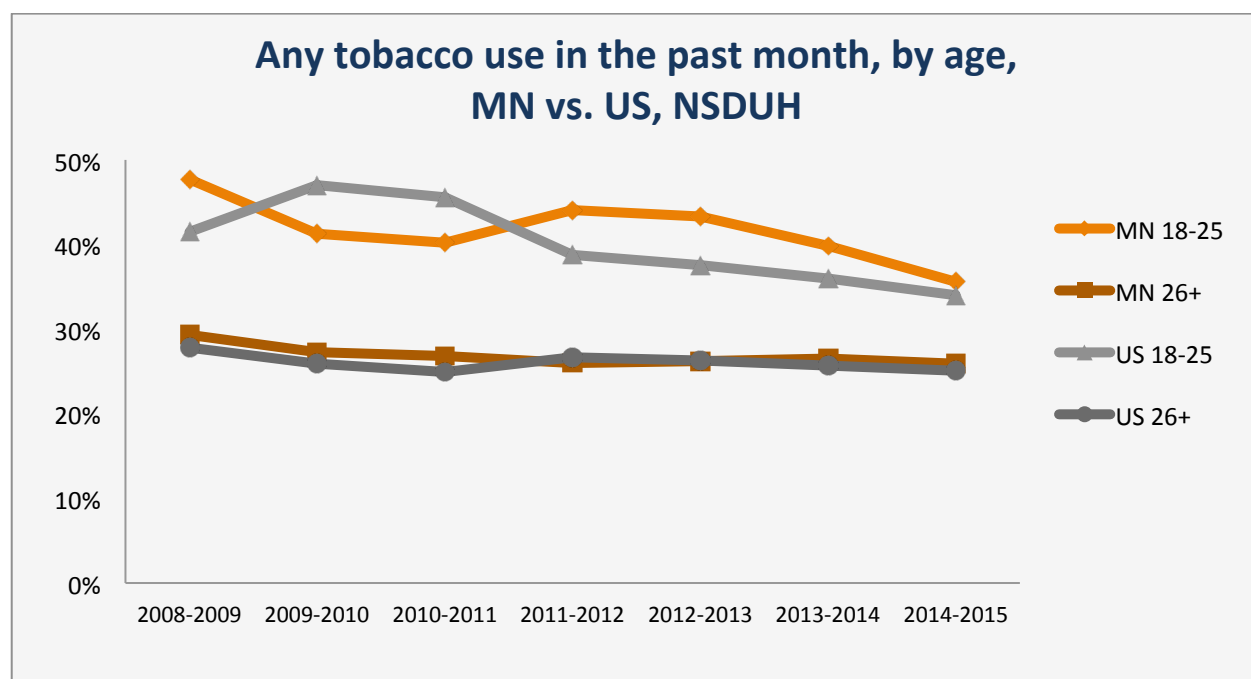
Data Source(s)

National Survey on Drug Use and Health (NSDUH), Behavioral Risk Factor Surveillance System (BRFSS) and the Minnesota Survey of Adult Substance Use (MNSASU)

Section Summary

- While reported cigarette smoking has declined substantially among 12 to 25 year-olds in Minnesota, rates have been nearly flat for adults age 26 and older.
- Minnesotans' smoking rates are on par with the national average.
- Young Minnesotans are more likely to smoke.
- Most adults using e-cigarettes report using them as a cigarette-cessation strategy.

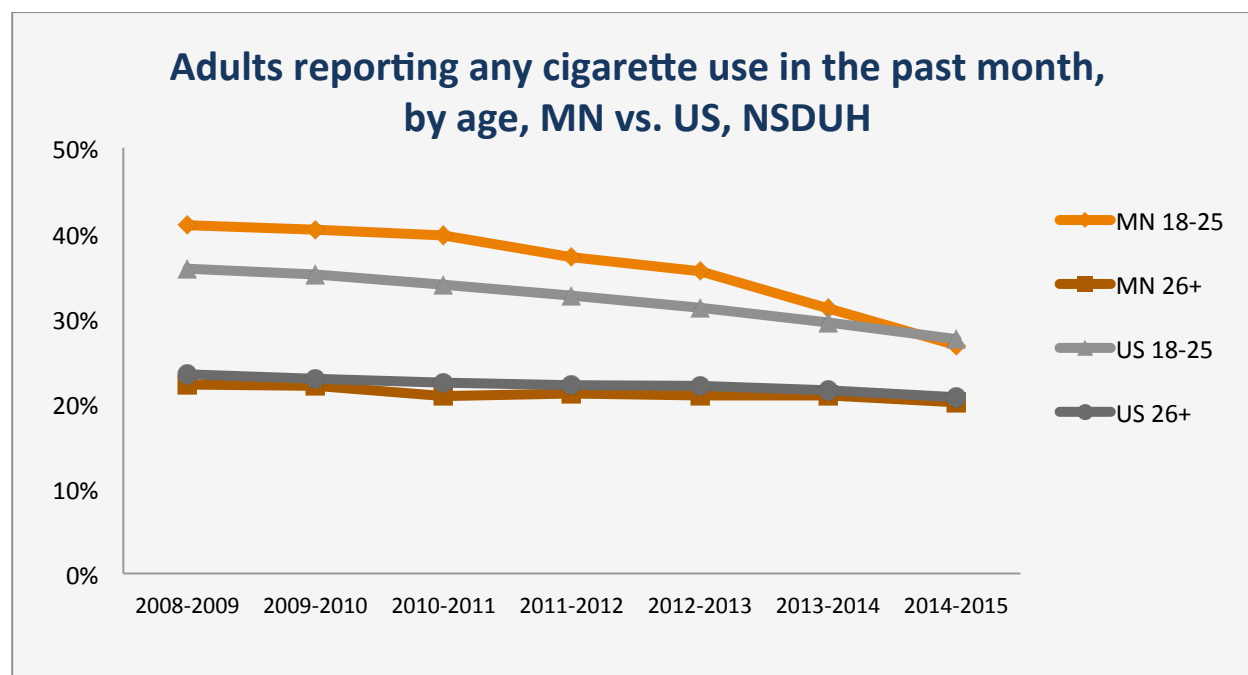
Data source: NSDUH



Adults Reporting any Tobacco Product Use in the Past Month, NSDUH

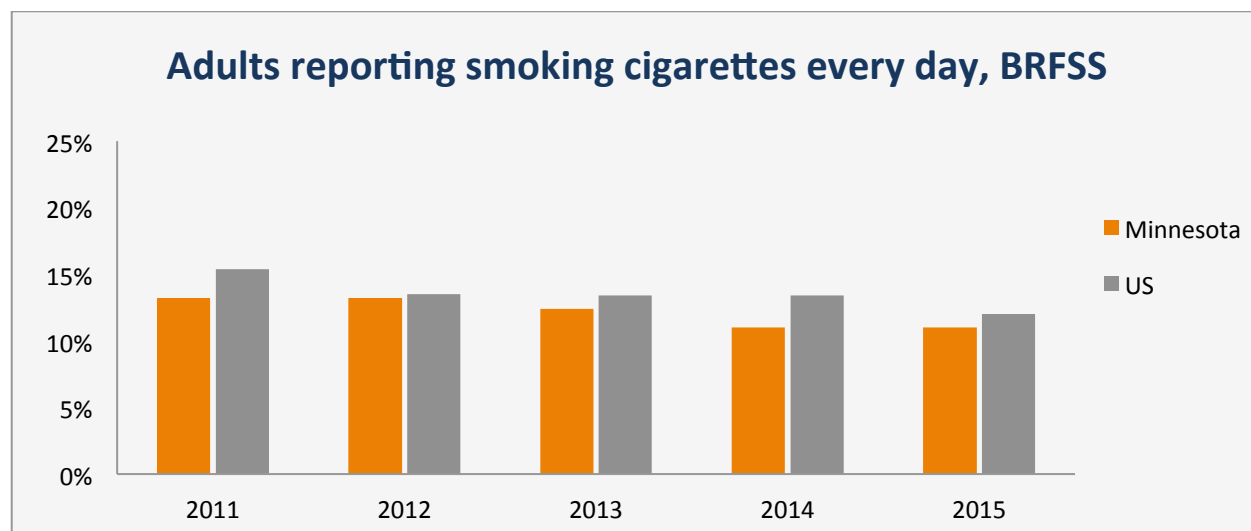
| Minnesota | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Tobacco use 12+ | 29.9% | 27.6% | 27.0% | 26.8% | 27.0% | 26.4% | 25.3% |
| Ages 12 thru 17 | 12.1% | 11.3% | 10.3% | 10.6% | 8.9% | 7.5% | 6.7% |
| Ages 18 thru 25 | 47.7% | 41.3% | 40.2% | 44.0% | 43.3% | 39.8% | 35.6% |
| Ages 26 and Over | 29.3% | 27.3% | 26.8% | 26.0% | 26.2% | 26.5% | 25.9% |
| United States | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Tobacco use 12+ | 28.0% | 27.3% | 26.3% | 26.6% | 26.1% | 25.4% | 24.6% |
| Ages 12 thru 17 | 11.5% | 11.2% | 10.4% | 9.3% | 8.2% | 7.4% | 6.5% |
| Ages 18 thru 25 | 41.5% | 47.0% | 45.6% | 38.8% | 37.6% | 36.0% | 34.0% |
| Ages 26 and Over | 27.8% | 25.9% | 24.9% | 26.7% | 26.3% | 25.7% | 25.1% |
| MN:US rate ratio | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Tobacco use 12+ | 1.05 | 1.01 | 1.03 | 1.01 | 1.03 | 1.04 | 1.03 |

Data Source: NSDUH

**Adults Reporting any Cigarette Use in the Past Month, NSDUH**

| Minnesota | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Cigarette use 12+ | 23.5% | 23.2% | 22.1% | 22.0% | 21.5% | 20.7% | 19.5% |
| Ages 12 thru 17 | 9.7% | 8.9% | 8.7% | 8.9% | 7.0% | 5.5% | 4.7% |
| Ages 18 thru 25 | 40.9% | 40.4% | 39.7% | 37.1% | 35.5% | 31.1% | 26.8% |
| Ages 26 and Over | 22.2% | 22.0% | 20.8% | 21.1% | 20.9% | 20.9% | 20.1% |
| United States | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Cigarette use 12+ | 23.6% | 23.2% | 22.5% | 22.1% | 21.7% | 21.1% | 20.1% |
| Ages 12 thru 17 | 9.0% | 8.7% | 8.1% | 7.2% | 6.1% | 5.2% | 4.5% |
| Ages 18 thru 25 | 35.8% | 35.1% | 33.9% | 32.7% | 31.2% | 29.5% | 27.5% |
| Ages 26 and Over | 23.4% | 22.9% | 22.4% | 22.1% | 22.0% | 21.5% | 20.7% |
| MN:US rate ratio | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Tobacco use 12+ | 1.00 | 1.00 | 0.98 | 0.99 | 0.99 | 0.98 | 0.97 |

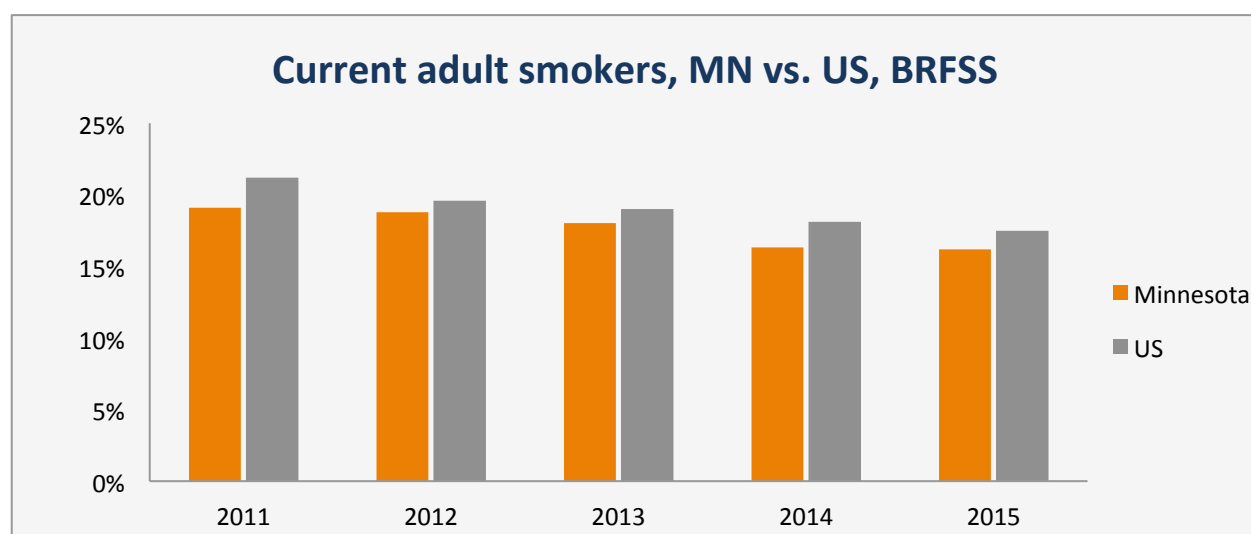
Data Source: BRFSS



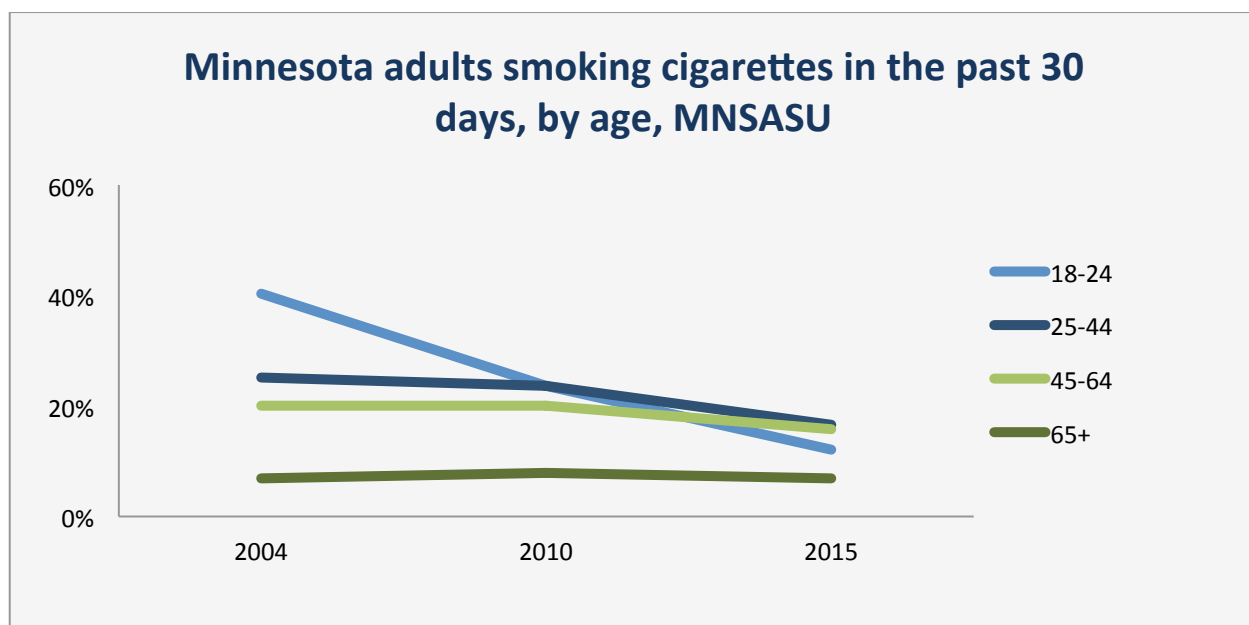
Adults Reporting Smoking Cigarettes Every Day, BRFSS

| | 2011 | 2012 | 2013 | 2014 | 2015 |
|---------------|-------------|-------------|-------------|-------------|-------------|
| Minnesota | 13% | 13% | 12% | 11% | 11% |
| US | 15% | 14% | 13% | 13% | 12% |
| MN:US* | 0.87 | 0.93 | 0.92 | 0.85 | 0.92 |

NOTE: In 2011, BRFSS changed the definition for current smokers, from those who had smoked more than 100 cigarettes in their lifetimes and are now daily smokers, to those who are currently daily smokers. Therefore, the data from 2011 and later are not comparable with those from 2010 and earlier. Between 2004 and 2010, Minnesota's rate of smokers steadily dropped from 15% to 11%. The rate for Minnesota remained below that of the US for the entire period, with rate ratios between 0.86 and 0.96.

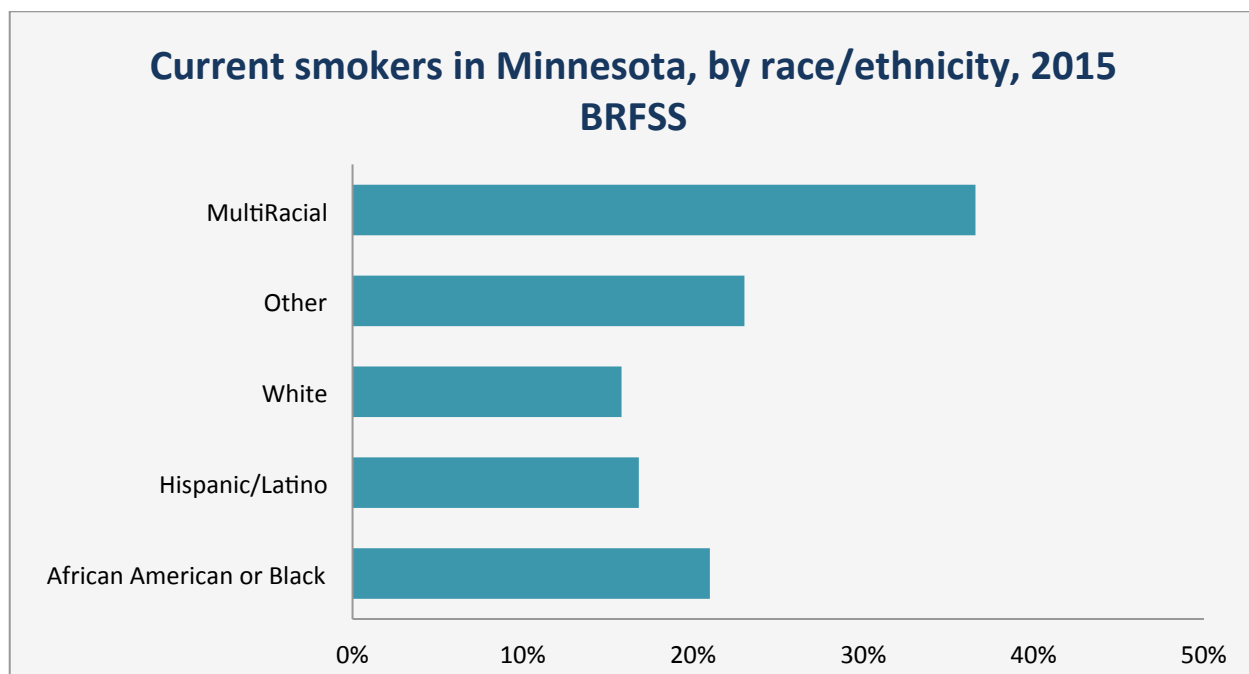


Data Source: MNSASU



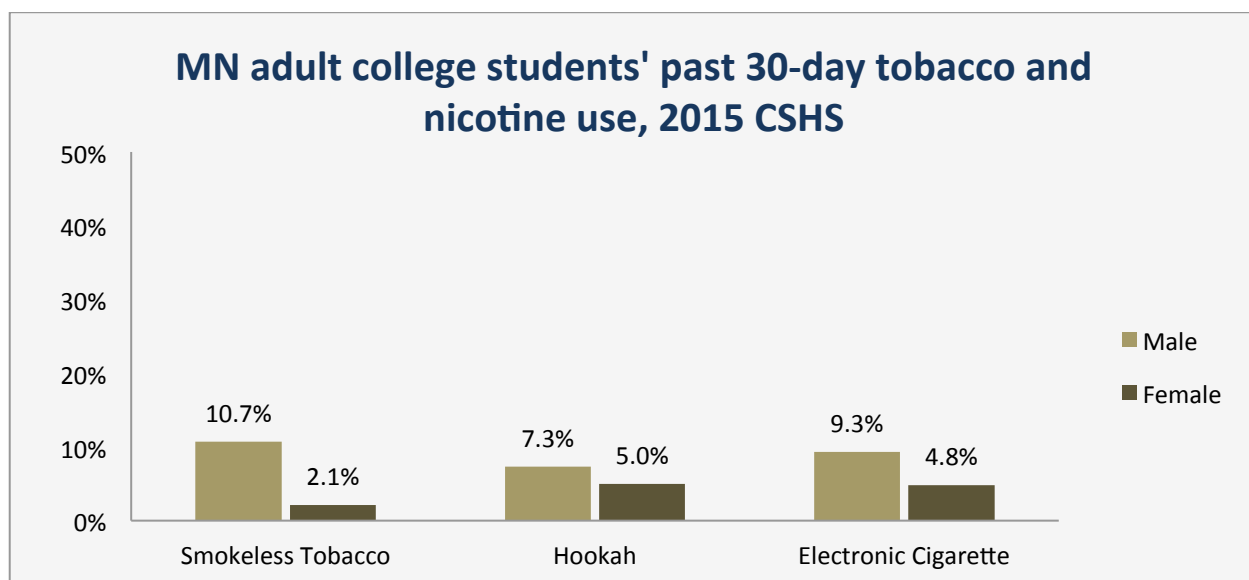
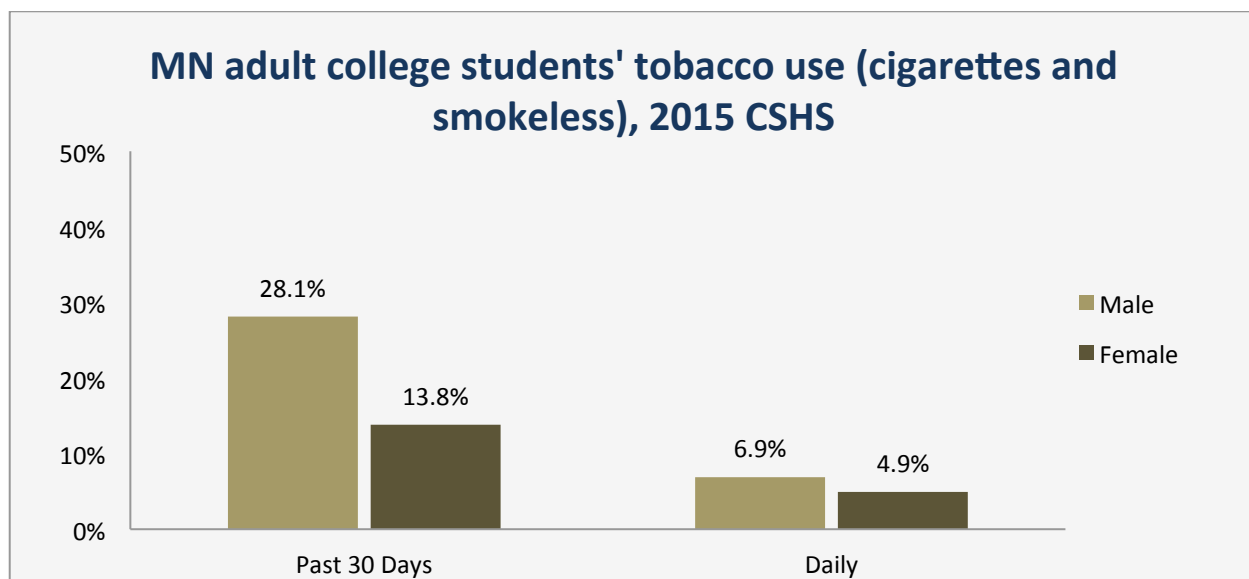
| Minnesota adults reporting smoking cigarettes within the past 30 days, MNSASU | | 2004 | 2010 | 2015 |
|---|---------------------------------|-------|-------|-------|
| Age | Ages 18 thru 24 | 40.3% | 23.7% | 12.1% |
| | Ages 25 thru 44 | 25.1% | 23.7% | 16.6% |
| | Ages 45 thru 64 | 20.0% | 20.0% | 15.8% |
| | Ages 65 and over | 6.9% | 7.9% | 6.9% |
| Race/Ethnicity | African American or Black | 27.1% | 26.3% | 18.1% |
| | American Indian | 54.2% | 58.9% | 46.1% |
| | Asian American/Pacific Islander | 18.2% | 11.8% | 11.4% |
| | Hispanic/Latino | 23.5% | 18.3% | 11.0% |
| | Bi-Racial/Multi-Racial | 46.9% | 38.4% | 25.9% |
| | White | 22.2% | 19.2% | 15.4% |
| Gender | Male | 24.2% | 21.0% | 16.6% |
| | Female | 21.3% | 18.7% | 14.9% |
| | Total | 22.7% | 19.8% | 15.8% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | N/A | N/A | 21.4% |
| | Heterosexual | N/A | N/A | 15.6% |

Data Source: BRFSS

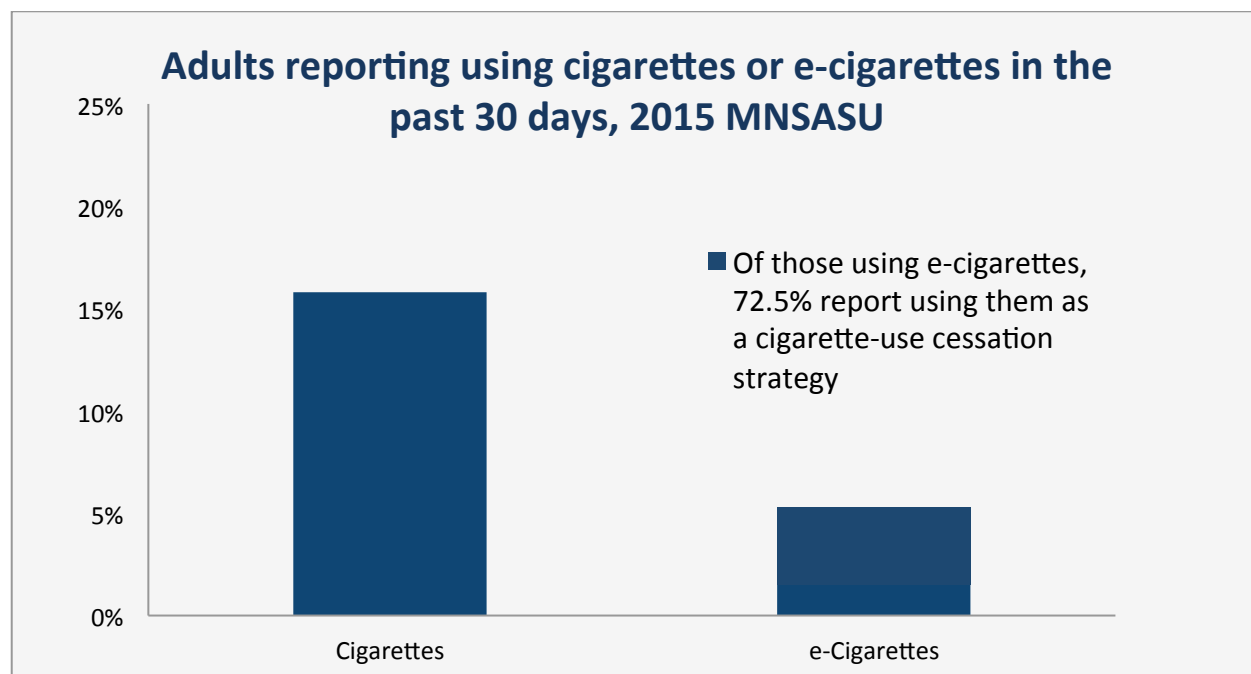


| Cigarette Use: Current smokers in Minnesota, BRFSS | | | | | | |
|--|---------------------------|-------|-------|-------|-------|-------|
| | | 2011 | 2012 | 2013 | 2014 | 2015 |
| Age | Ages 18 thru 24 | 24.7% | 20.6% | 21.9% | 16.1% | 17.3% |
| | Ages 25 thru 44 | 22.7% | 24.2% | 22.9% | 32.8% | 30.7% |
| | Ages 45 thru 64 | 18.9% | 18.3% | 18.3% | 44.5% | 45.9% |
| | Ages 65 and over | 8.6% | 8.8% | 9.3% | 8.1% | 7.4% |
| | | | | | | |
| Race/Ethnicity | African American or Black | 29.8% | 29.4% | 22.2% | 22.3% | 21.0% |
| | Hispanic/Latino | 20.1% | 18.5% | 16.9% | 14.3% | 16.8% |
| | White | 18.2% | 18.0% | 18.0% | 15.9% | 15.8% |
| | Other | 22.3% | 21.3% | 16.9% | 15.6% | 23.0% |
| | MultiRacial | 40.2% | 30.6% | 35.7% | 29.8% | 36.6% |
| | | | | | | |
| Gender | Male | 21.2% | 21.7% | 19.4% | 17.9% | 17.6% |
| | Female | 17.0% | 16.0% | 16.7% | 14.8% | 14.8% |
| | Total | 19.1% | 18.8% | 17.0% | 16.3% | 16.2% |

Data Source: MNSASU



Data Source: MNSASU



| Adults reporting use of e-cigarettes on one or more days within the past 30 days, 2015 MNSASU | | |
|---|----------------------------------|-------|
| | | 2015 |
| Age | Ages 18 thru 24 | 11.5% |
| | Ages 25 thru 44 | 6.7% |
| | Ages 45 thru 64 | 3.9% |
| | Ages 65 and over | 1.1% |
| Race/Ethnicity | African American or Black | 3.8% |
| | American Indian | 11.9% |
| | Asian American/ Pacific Islander | 6.0% |
| | Hispanic/Latino | 4.1% |
| | Bi-Racial/Multi-Racial | 11.0% |
| | White | 5.2% |
| Gender | Male | 6.0% |
| | Female | 4.6% |
| | Total | 5.3% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | 10.2% |
| | Heterosexual | 5.2% |

Mothers Reporting Smoking During Pregnancy

About the Indicator

Smoking can increase a woman's risk of having a low-birthweight baby. Low-birthweight babies face an increased risk of serious health problems during the newborn period, and chronic lifelong disabilities. Smoking during pregnancy is also associated with a number of pregnancy complications.

Minnesota's maternal smoking prevalence was 9.7% in 2014 as compared to the nation's 8.4%.

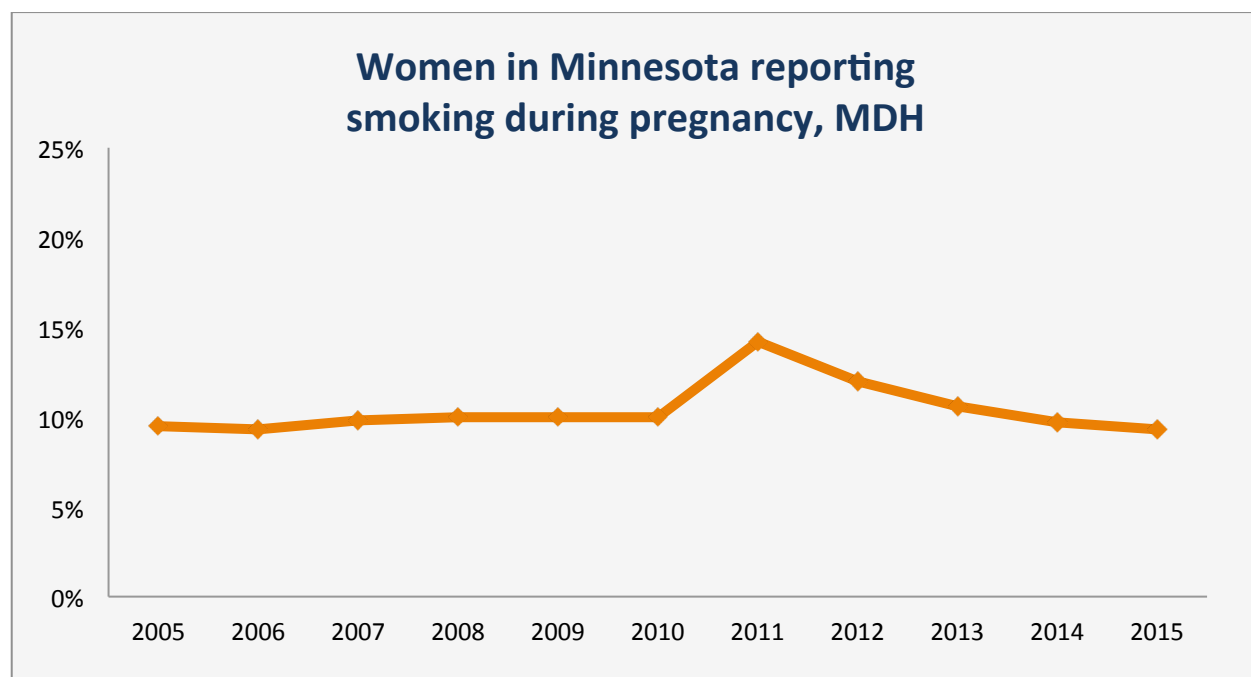
Data Source(s)

Minnesota Health Statistics Annual Summary, Minnesota Department of Health

Section Summary

- Over the 12-year period from 2005 to 2015, an average of 10.4% of mothers reported smoking during pregnancy.

Data Source: MDH

**Women in Minnesota Reporting Smoking during Pregnancy**

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---------|------|------|------|-------|-------|-------|-------|-------|-------|------|------|
| Percent | 9.5% | 9.3% | 9.8% | 10.0% | 10.0% | 10.0% | 14.2% | 12.0% | 10.6% | 9.7% | 9.3% |

Youth Reporting Current Tobacco and Nicotine Use

About the Indicator

Reported tobacco use within the past 30 days (“30-day use”) is a frequent measure of current use, especially among youth. Youth tobacco use is presented here using 5 statistics: smoking a cigarette on one or more days, smoking cigarettes on 20 or more days, and use of chewing tobacco or snuff.

Data Source(s)

Minnesota Student Survey (MSS), Monitoring the Future (MTF)

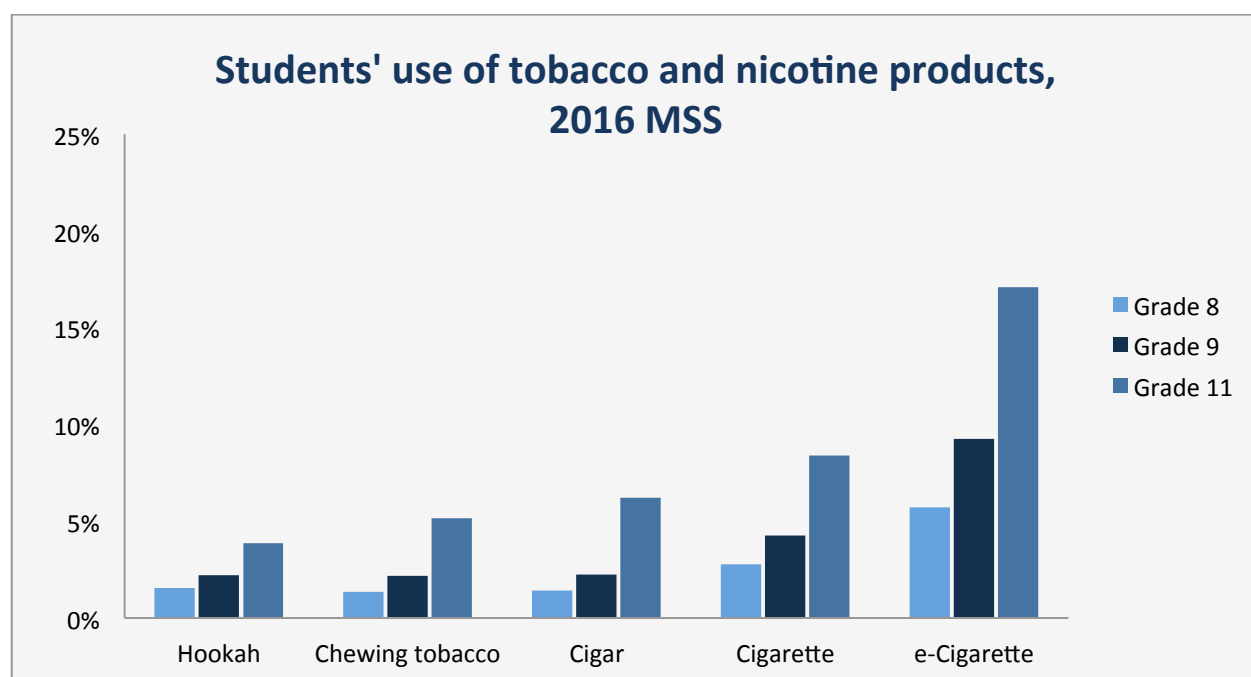
Section Summary

- Reported 30-day cigarette smoking dropped dramatically for 9th grade students from 1998 to 2016 (from 23% down to 4%).
- Older students are more likely to use tobacco or nicotine.
- Male students are much more likely to use chewing tobacco; male and female students smoke at similar rates.
- Minnesota students’ use of tobacco and nicotine is generally on par with, or slightly lower than, use by students nationally.

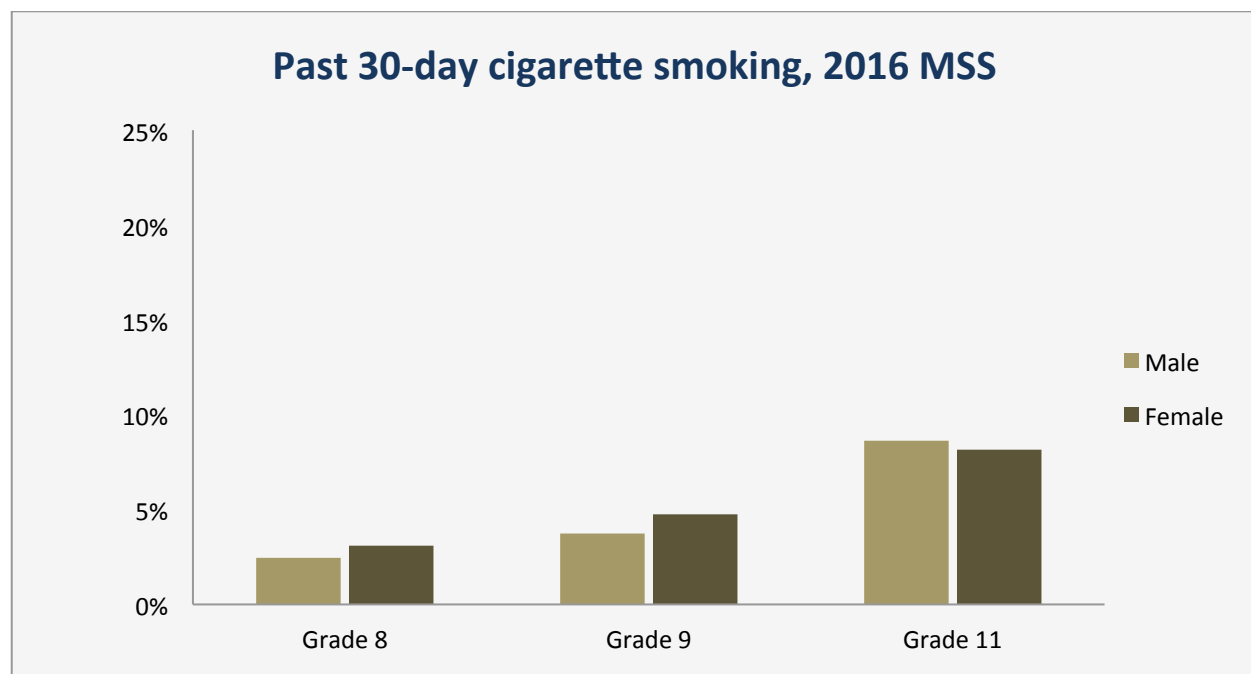
Data Source: MSS

While use of traditional nicotine products by students continues to fall nationwide, e-cigarette and hookah use are on the rise.

Questions about these methods of tobacco and nicotine use were added to the Minnesota Student Survey in 2016.



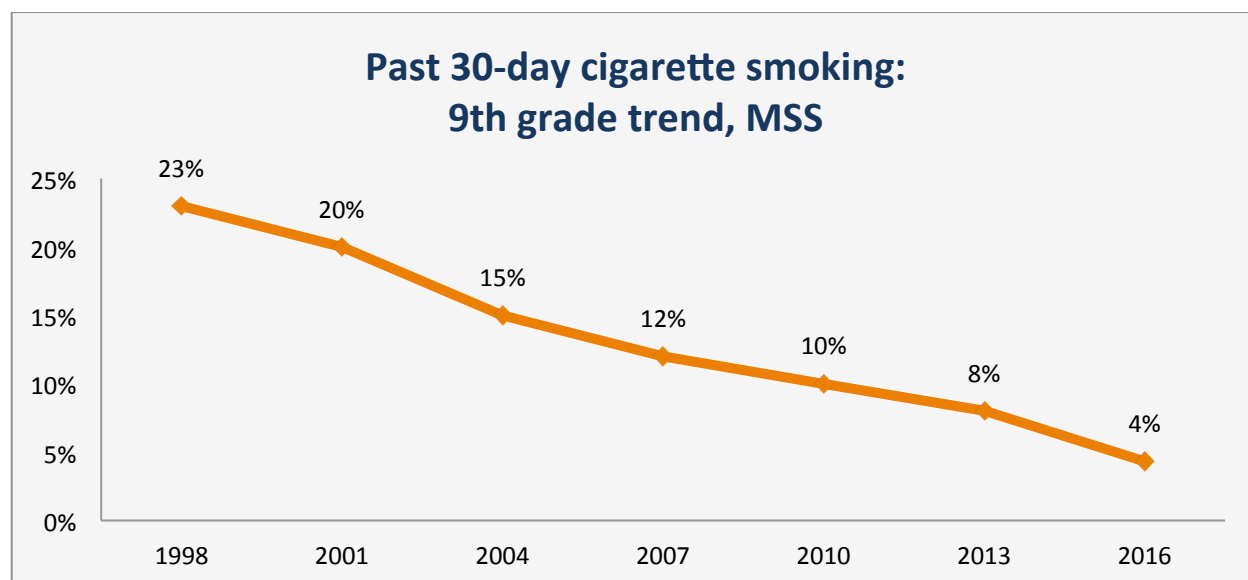
Data Source: MSS



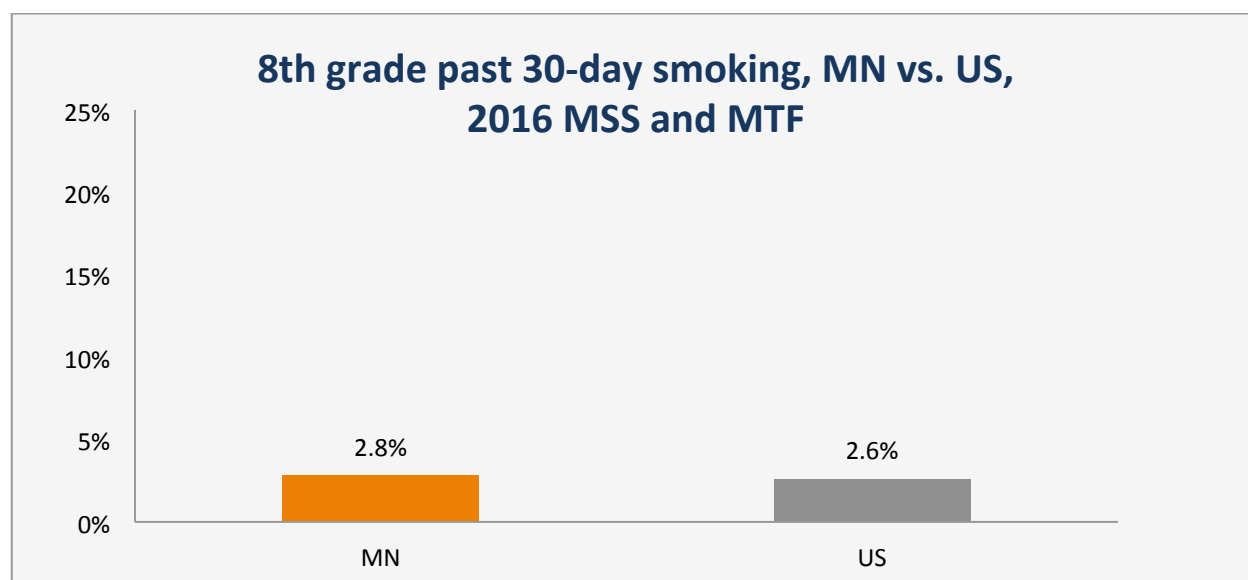
Students Reporting Smoking a Cigarette on One or More Days in the Past 30 Days, 2016 MSS

| | | Male | | Female | | Total | |
|-------|-------|-------|------|--------|------|-------|------|
| | | N (#) | % | N (#) | % | N (#) | % |
| Grade | 8th | 513 | 2.5% | 656 | 3.1% | 1,169 | 2.8% |
| | 9th | 776 | 3.7% | 1,010 | 4.8% | 1,786 | 4.3% |
| | 11th | 1,449 | 8.6% | 1,398 | 8.2% | 2,847 | 8.4% |
| | Total | 2,738 | 4.7% | 3,064 | 5.1% | 5,802 | 4.9% |

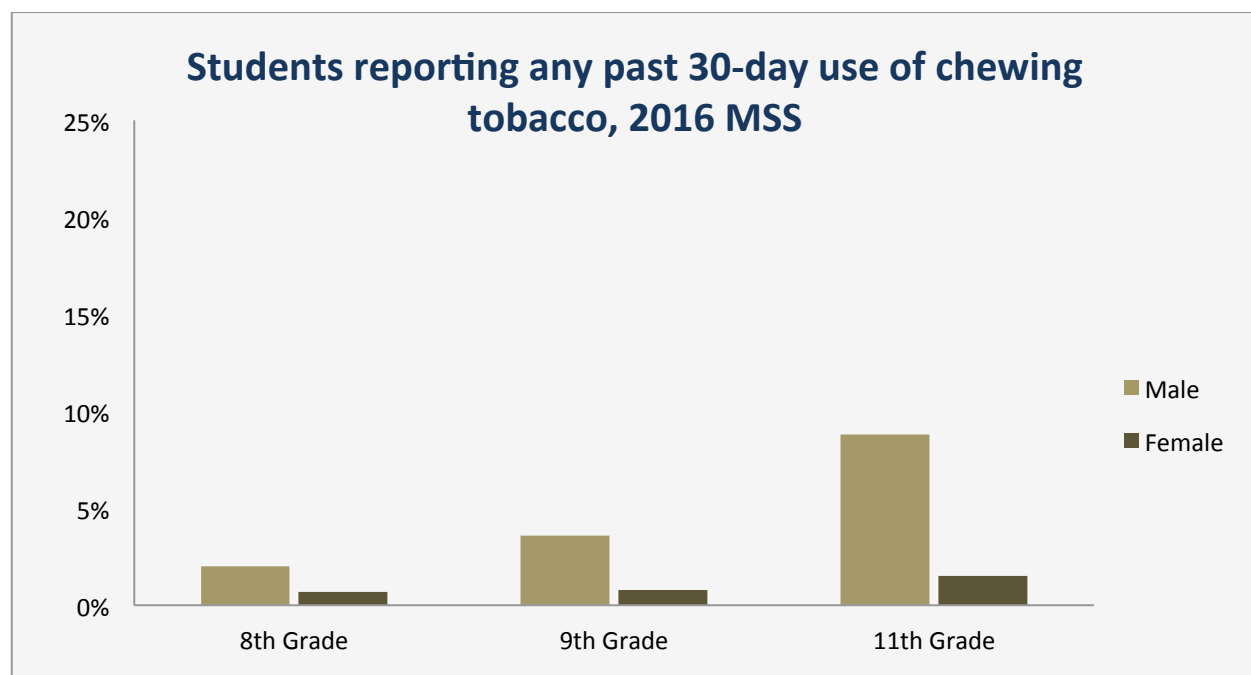
Data Source: MSS and MTF



*9th graders' past 30-day smoking rates
continue to decrease.
The level for 8th graders is slightly below the 8th
grade national average.*



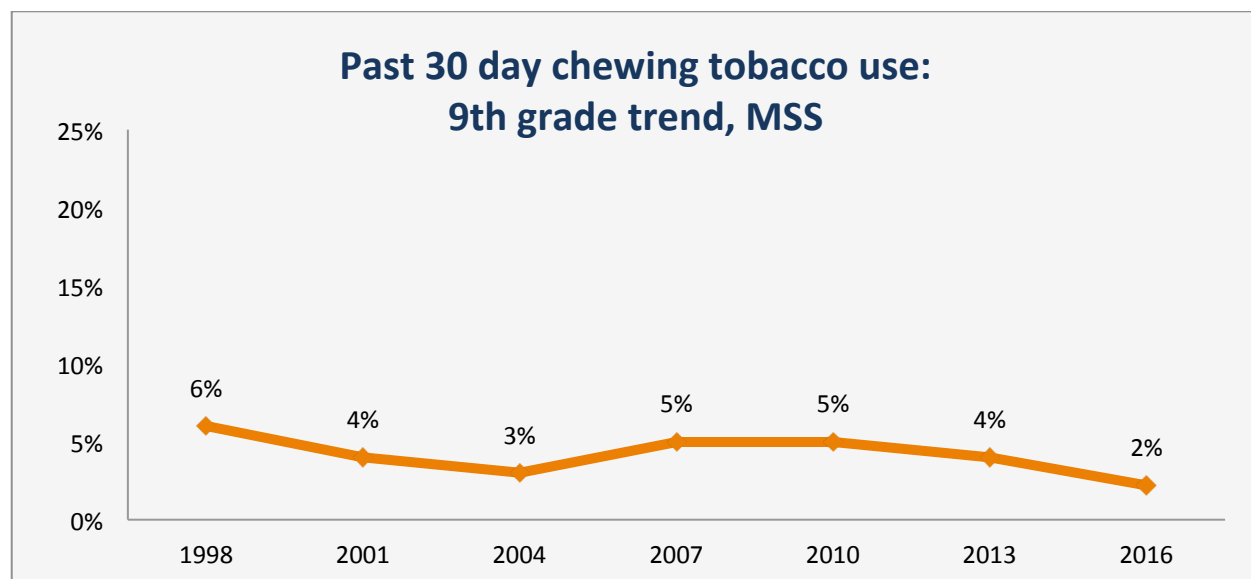
Data Source: MSS



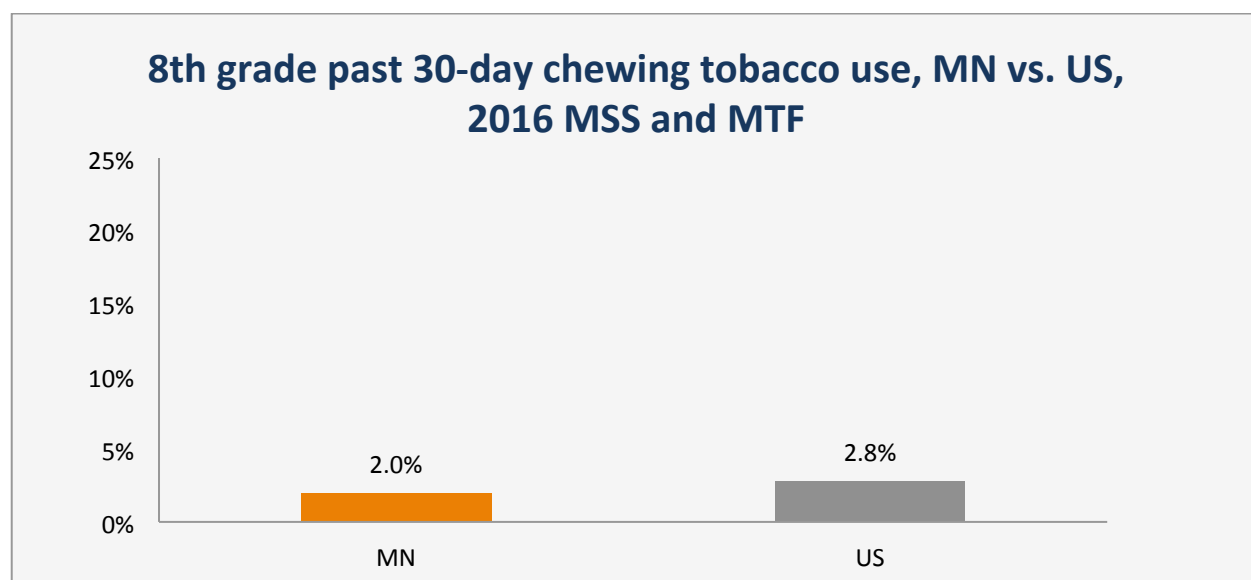
Students Reporting Use of Chewing Tobacco on One or More Days within the Past 30 Days, 2016 MSS

| | | Male | | Female | | Total | |
|-------|-------|-------|------|--------|------|-------|------|
| | | N (#) | % | N (#) | % | N (#) | % |
| Grade | 8th | 426 | 2.0% | 146 | 0.7% | 572 | 1.4% |
| | 9th | 741 | 3.6% | 177 | 0.8% | 918 | 2.2% |
| | 11th | 1,476 | 8.8% | 263 | 1.5% | 1,739 | 5.1% |
| | Total | 2,643 | 4.5% | 586 | 1.0% | 3,229 | 2.7% |

Data Source: MSS and MTF

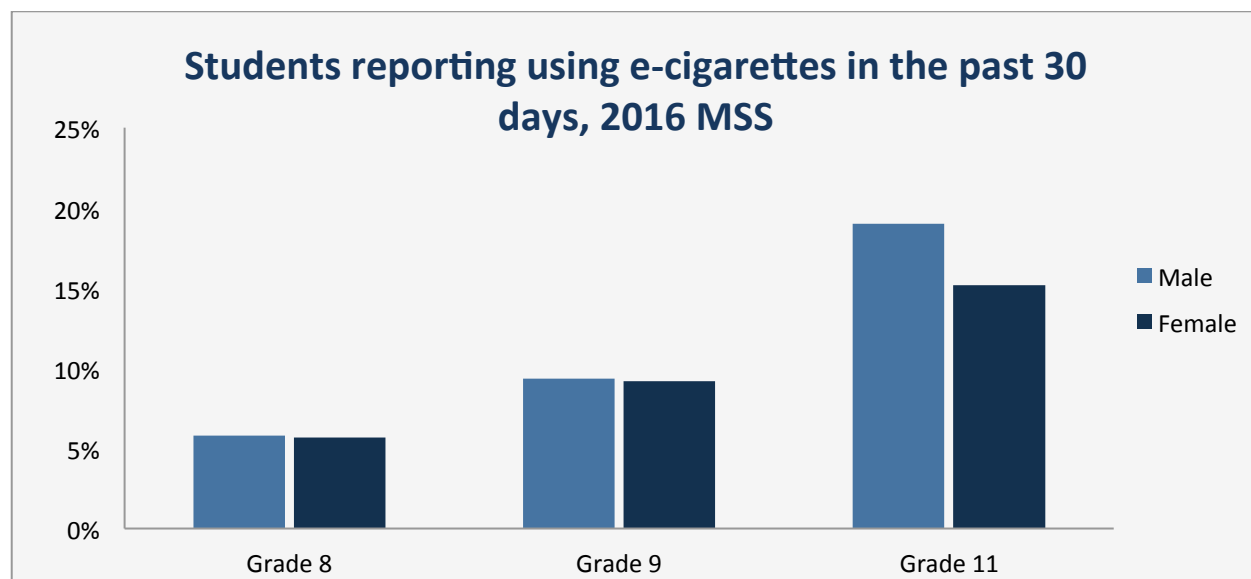


*9th graders' past 30-day chewing tobacco use
has decreased over time.
The level for 8th graders is slightly below the
8th grade national average.*



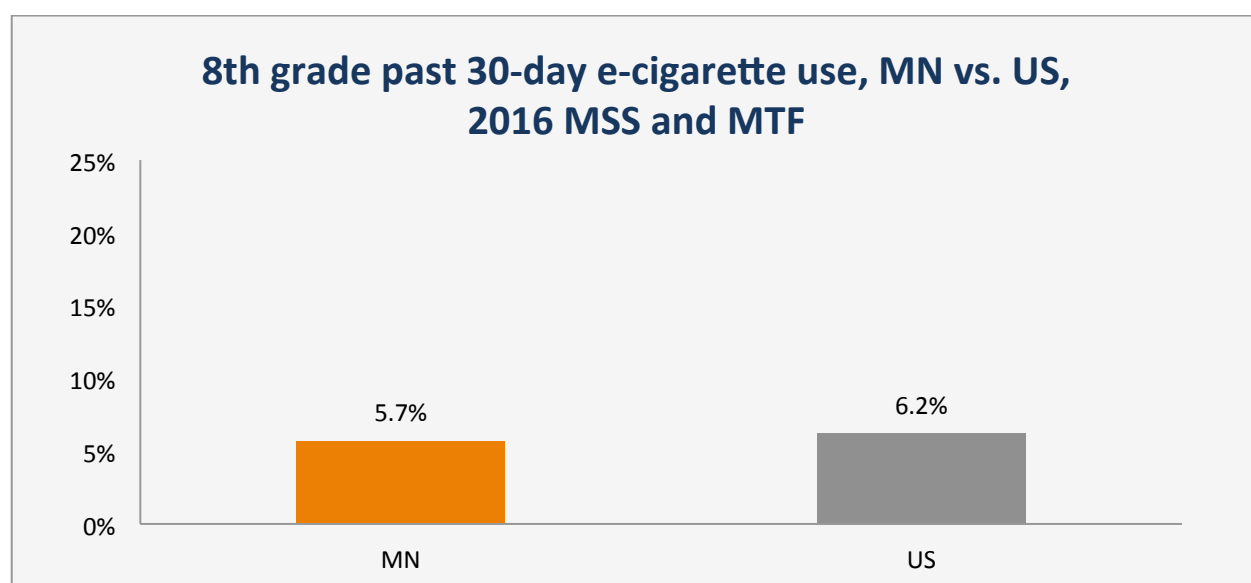
Note: The wording of the MTF (US) survey is "smokeless tobacco," while the MSS (MN) survey asks about "chewing tobacco."

Data Source: MSS and MTF



Minnesota Students Reporting Use of e-Cigarettes in the Past 30 Days, by Grade, 2016 MSS

| | | Male | | Female | | Total | |
|-------|-------|-------|-------|--------|-------|--------|-------|
| | | N (#) | % | N (#) | % | N (#) | % |
| Grade | 8th | 1,205 | 5.8% | 1,201 | 5.7% | 2,406 | 5.7% |
| | 9th | 1,935 | 9.3% | 1,948 | 9.2% | 3,883 | 9.3% |
| | 11th | 3,188 | 19.0% | 2,598 | 15.2% | 5,786 | 17.1% |
| | Total | 6,328 | 10.8% | 5,747 | 9.7% | 12,075 | 10.2% |



Tobacco In Minnesota: Consequences

Tobacco-Related Mortality

About the Indicator

Smoking is a risk factor for many causes of death in Minnesota.

Lung cancer is the most common cause of cancer deaths, for both men and women. The risk of lung cancer increases in proportion to the duration of smoking and the numbers of cigarettes smoked.

In addition to lung cancer rates, the disease impact of smoking can be assessed using Smoking Attributable Mortality figures calculated by the Centers for Disease Control and Prevention (CDC).

Data Source(s)

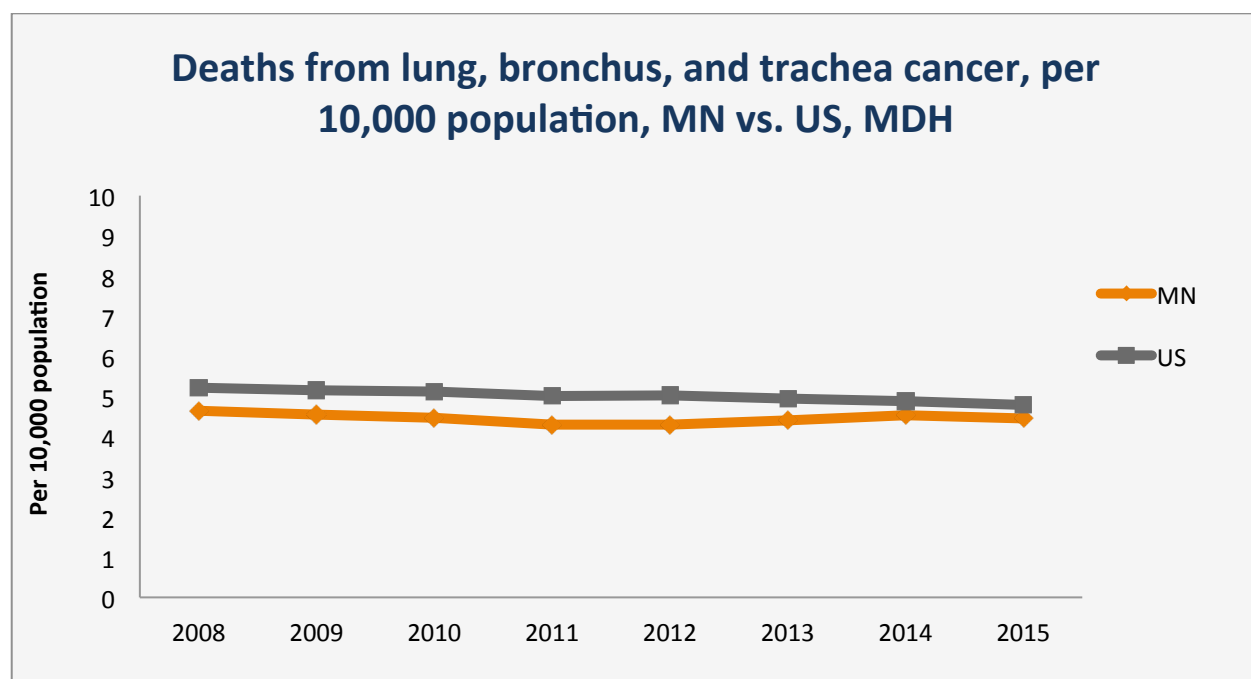
Minnesota Department of Health, CDC Wonder, and SAMMEC

Section Summary

- Lung, bronchus and trachea cancer death rates have declined slightly over time, both in Minnesota and nationally.
- Rates in Minnesota have been consistently slightly lower than nationwide rates.
- In 2004, the smoking-attributable mortality (SAM) rate for Minnesota was 201.2 per 100,000 population. This includes deaths from cancers, cardiovascular diseases and respiratory diseases.

Tobacco and Nicotine: Consequences

Data source: Minnesota Department of Health and CDC Wonder



Deaths from Lung, Bronchus, and Trachea Cancer Per 10,000 Population, MDH and CDC

| Minnesota | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|
| Deaths from lung, bronchus, trachea cancer | 2,433 | 2,401 | 2,373 | 2,316 | 2,330 | 2,386 | 2,473 | 2,384 |
| Rate per 10,000 population | 4.64 | 4.55 | 4.47 | 4.30 | 4.30 | 4.40 | 4.53 | 4.46 |
| United States | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Deaths from lung, bronchus, trachea cancer | 158,656 | 158,158 | 158,318 | 156,131 | 157,499 | 156,252 | 155,610 | 153,819 |
| Rate per 10,000 population | 5.22 | 5.16 | 5.13 | 5.01 | 5.02 | 4.94 | 4.88 | 4.79 |
| MN:US rate ratio | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Deaths from lung, bronchus, trachea cancer | 0.89 | 0.88 | 0.87 | 0.86 | 0.86 | 0.89 | 0.93 | 0.93 |

Tobacco and Nicotine: Consequences

Data Source: SAMMEC

2004 Age-Adjusted Smoking-Attributable Mortality (SAM) Rate per 100,000*

| Disease Category | Minnesota | | | United States | | |
|--------------------------------|--------------|--------------|--------------|---------------|--------------|--------------|
| | Male | Female | Total | Male | Female | Total |
| Malignant Neoplasms | | | | | | |
| Lip, Oral Cavity, Pharynx | 4.3 | 1.3 | 2.6 | 5.5 | 1.3 | 3.2 |
| Esophagus | 11.8 | 1.4 | 5.9 | 10.6 | 1.9 | 5.7 |
| Stomach | 2.8 | 0.5 | 1.5 | 2.8 | 0.6 | 1.5 |
| Pancreas | 4.6 | 3.2 | 3.9 | 4.6 | 4.2 | 4.4 |
| Larynx | 2.6 | 0.4 | 1.3 | 3.6 | 0.6 | 1.9 |
| Trachea, Lung, Bronchus | 101.3 | 49.8 | 71.6 | 119.0 | 56.0 | 82.8 |
| Cervix Uteri | 0.0 | 0.3 | 0.1 | 0.0 | 0.5 | 0.3 |
| Kidney and Renal Pelvis | 4.4 | 0.1 | 2.0 | 4.2 | 0.2 | 1.9 |
| Urinary Bladder | 6.6 | 0.9 | 3.2 | 6.6 | 1.2 | 3.4 |
| Acute Myeloid Leukemia | 1.7 | 0.4 | 0.9 | 1.3 | 0.4 | 0.8 |
| Sub-total | 140.1 | 58.3 | 93.0 | 158.2 | 66.9 | 105.9 |
| Cardiovascular Diseases | | | | | | |
| Ischemic Heart Disease | 47.3 | 13.2 | 28.0 | 69.5 | 28.8 | 46.5 |
| Other Heart Disease | 18.4 | 6.2 | 10.8 | 19.9 | 8.2 | 12.9 |
| Cerebrovascular Disease | 8.9 | 5.8 | 7.0 | 10.8 | 8.3 | 9.3 |
| Atherosclerosis | 1.2 | 0.1 | 0.5 | 1.9 | 0.5 | 1.0 |
| Aortic Aneurysm | 9.2 | 3.7 | 5.9 | 8.0 | 2.9 | 5.0 |
| Other Arterial Disease | 0.6 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 |
| Sub-total | 85.6 | 29.7 | 52.9 | 110.8 | 49.5 | 75.5 |
| Respiratory Diseases | | | | | | |
| Pneumonia, Influenza | 6.9 | 2.2 | 3.9 | 9.5 | 4.2 | 6.2 |
| Bronchitis, Emphysema | 6.6 | 3.6 | 4.8 | 10.8 | 6.4 | 8.1 |
| Chronic Airway Obstruction | 64.7 | 35.3 | 46.6 | 66.0 | 43.6 | 52.1 |
| Sub-total | 78.2 | 41.1 | 55.3 | 86.3 | 54.2 | 66.4 |
| Total | 303.9 | 129.1 | 201.2 | 355.3 | 170.6 | 247.8 |

*Among adults aged 35 years and older. Does not include burn or second hand smoke deaths.

Tobacco and Nicotine: Consequences

Data Source: SAMMEC

Maternal and Child Smoking-Attributable Health Outcomes, 2004

| | Minnesota | | United State | |
|---|-------------|---------------|--------------|---------------|
| Maternal Smoking Prevalence | 9.8 | | 10.2 | |
| | | | | |
| | Male | Female | Male | Female |
| Smoking-Attributable Fraction (SAF) | | | | |
| Short Gestation/Low Birth Weight | 7.52% | 7.52% | 7.81% | 7.81% |
| Sudden Infant Death Syndrome | 11.22% | 11.22% | 11.63% | 11.63% |
| Respiratory Distress (Syndrome)—newborn | 2.86% | 2.86% | 2.97% | 2.97% |
| Other Respiratory Conditions—perinatal | 3.86% | 3.86% | 4.01% | 4.01% |
| Smoking-Attributable Mortality (SAM) | | | | |
| Short Gestation/Low Birth Weight | 1 | 1 | 206 | 156 |
| Sudden Infant Death Syndrome | 2 | 1 | 154 | 107 |
| Respiratory Distress (Syndrome)—newborn | 0 | 0 | 15 | 11 |
| Other Respiratory Conditions—perinatal | 0 | 0 | 28 | 20 |
| Smoking-Attributable Years of Potential Life Lost (YPLL) | | | | |
| Short Gestation/Low Birth Weight | 75 | 80 | 15,491 | 12,542 |
| Sudden Infant Death Syndrome | 150 | 80 | 11,581 | 8,603 |
| Respiratory Distress (Syndrome)—newborn | 0 | 0 | 1,128 | 884 |
| Other Respiratory Conditions—perinatal | 0 | 0 | 2,106 | 1,608 |

Note: Smoking status is obtained through maternal self-reports, and the prevalence of maternal smoking may be substantially understated

Tobacco In Minnesota: Intervening Variables

Tobacco Retailer Noncompliance

About the Indicator

The Synar Amendment requires states to have laws prohibiting the sale of tobacco products to those younger than 18 and to conduct annual random, unannounced inspections of a valid sample of tobacco retailers to ensure compliance. Statistics presented are the retailer violation rates (RVR) by Federal Fiscal Year (FFY).

Data Source(s)

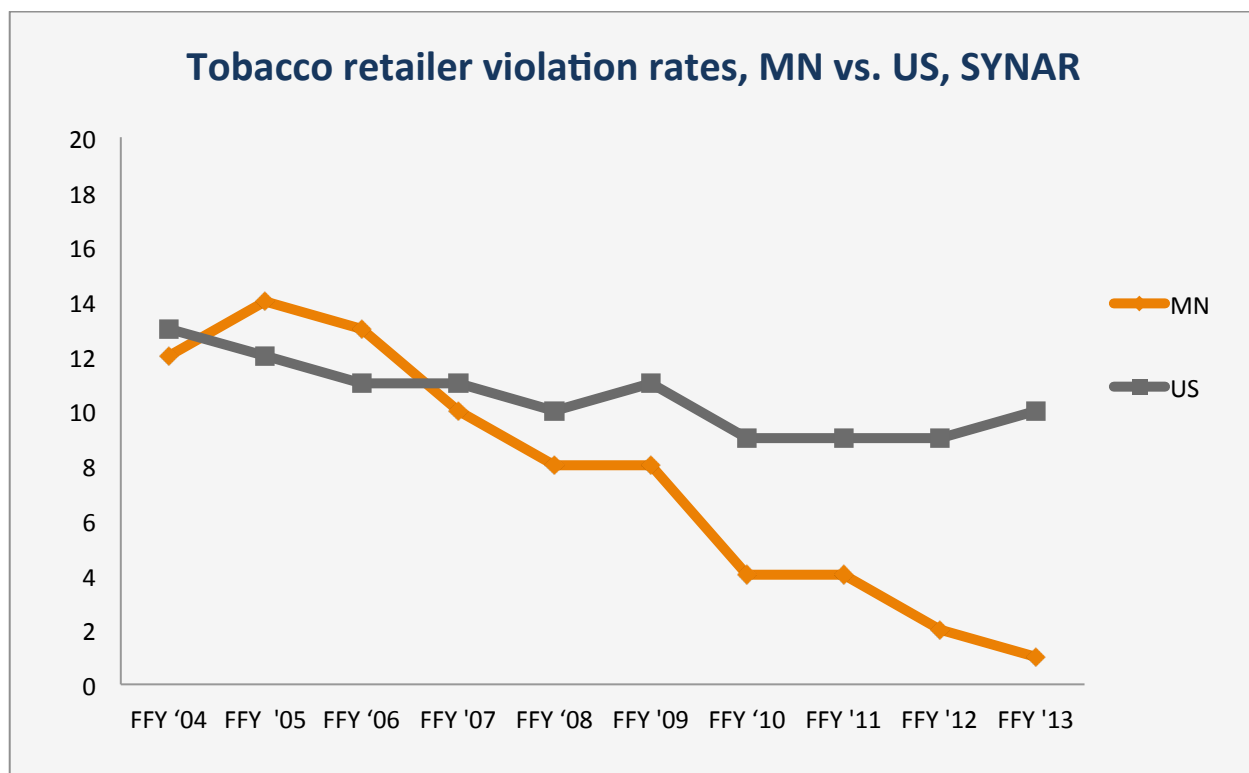
Center for Substance Abuse Prevention (CSAP)

Section Summary

- Minnesota retailer violation rates have steadily declined, from 16% in Federal Fiscal Year 2003 to 1% in Federal Fiscal Year 2013.
- Minnesota's retailer violation rates have been lower than the national average since Federal Fiscal Year 2007. In FFY 2013, Minnesota (along with Nevada) had the lowest RVR in the country.

Tobacco and Nicotine: Intervening Variables

Data source: SYNAR



SYNAR Tobacco Retailer Violation Rates (RVR)

| | FFY '04 | FFY '05 | FFY '06 | FFY '07 | FFY '08 | FFY '09 | FFY '10 | FFY '11 | FFY '12 | FFY '13 |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Minnesota | 12% | 14% | 13% | 10% | 8% | 8% | 4% | 4% | 2% | 1% |
| United States | 13% | 12% | 11% | 11% | 10% | 11% | 9% | 9% | 9% | 10% |
| MN:US | 0.92 | 1.17 | 1.18 | 0.91 | 0.80 | 0.73 | 0.44 | 0.48 | 0.22 | 0.10 |

Note: RVR are reported in Federal Fiscal Years. National RVRs were calculated by weighting each state's reported DVR by that state's population.

Perceptions of Disapproval and Harm

About the Indicator

Perception of Harm

Adults were asked about their perceptions of harm of cigarettes and e-cigarettes on the Minnesota Survey of Adult Substance Use (MNSASU) for the first time in 2015. Students on the Minnesota Student Survey (MSS) have been asked about their perceptions since 2007.

For both groups, respondents were asked how much they thought people risked harming themselves physically or in other ways by smoking one or more packs of cigarettes per day. The data show the number and percent of respondents answering either “great risk” or “moderate risk” of harm. The other two options on the survey were “slight risk” and “no risk.”

Perception of Disapproval

Also in 2007, students were asked how they thought their parents or guardians would feel if they smoked one or more packs of cigarettes a day. The statistics presented here for 2007-2010 show the number and percent of students responding that their close friends would either “greatly disapprove” or “disapprove.” The other two selection options on the survey were “would not care at all” and “would approve.” In 2010, the question changed to encompass any smoking at all by students, rather than specifying one or 2 packs a day. In 2013, the wording used to indicate disapproval was changed: students were asked whether others would feel it is “wrong” or “very wrong” for them to smoke cigarettes.

For more information on these data, see the SUMN.org website.

Data Source(s)

Minnesota Survey of Adult Substance Use (MNSASU), Minnesota Student Survey (MSS), Monitoring the Future (MTF)

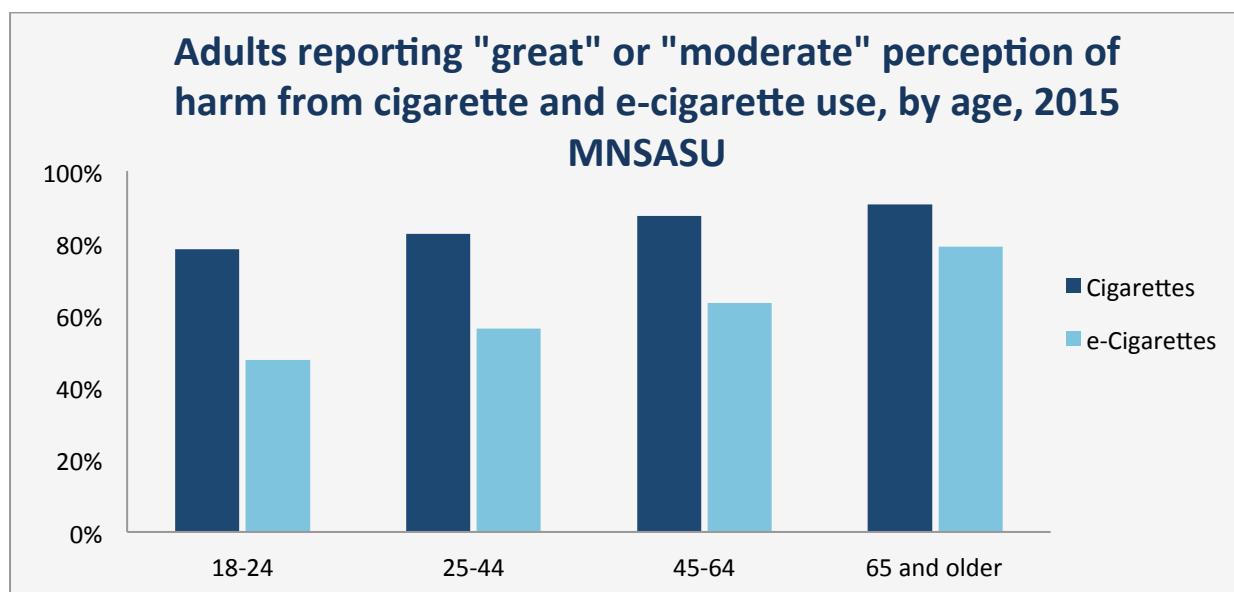
Section Summary

- Perception of harm of smoking is higher among female students than among male students.
- In 2016, perception of harm increased with grade level.
- Female students perceive a greater level of disapproval than male students, from both friends and parents or guardians, for all grade levels.
- Adults perceive e-cigarettes to be much less harmful than cigarettes.

Tobacco and Nicotine: Intervening Variables

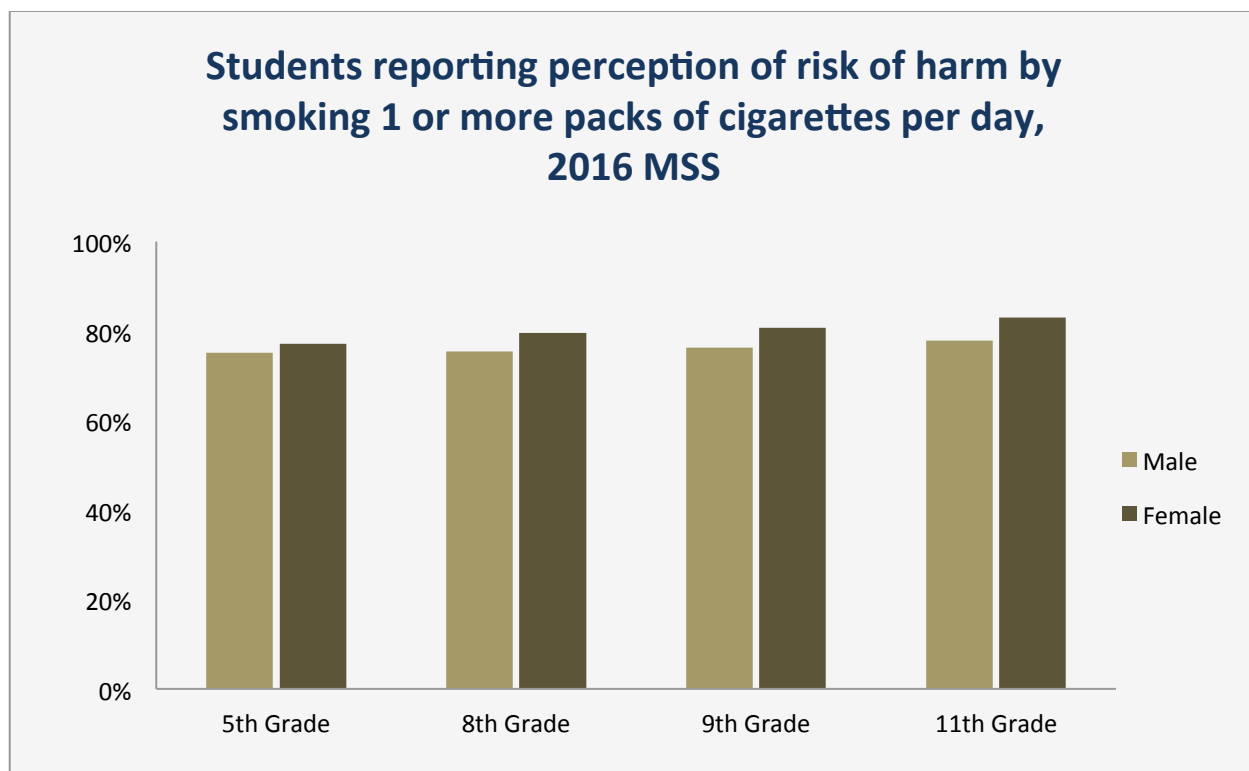
Data source: MNSASU

| Minnesota adults reporting perception of "great" or "moderate" harm from cigarette and e-cigarette use, 2015 MNSASU | | | |
|---|---------------------------------|------------|--------------|
| | | Cigarettes | e-Cigarettes |
| Age | Ages 18 thru 24 | 78.3% | 47.7% |
| | Ages 25 thru 44 | 82.6% | 56.3% |
| | Ages 45 thru 64 | 87.5% | 63.5% |
| | Ages 65 and over | 90.7% | 79.0% |
| Race/Ethnicity | African American or Black | 82.7% | 66.9% |
| | American Indian | 78.8% | 57.3% |
| | Asian American/Pacific Islander | 82.5% | 67.9% |
| | Hispanic/Latino | 86.4% | 73.7% |
| | Bi-Racial/Multi-Racial | 80.3% | 59.8% |
| | White | 85.6% | 59.7% |
| Gender | Male | 83.1% | 59.4% |
| | Female | 87.0% | 62.1% |
| | Total | 85.2% | 60.9% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | 86.1% | 50.6% |
| | Heterosexual | 85.4% | 60.9% |



Tobacco and Nicotine: Intervening Variables

Data source: MSS

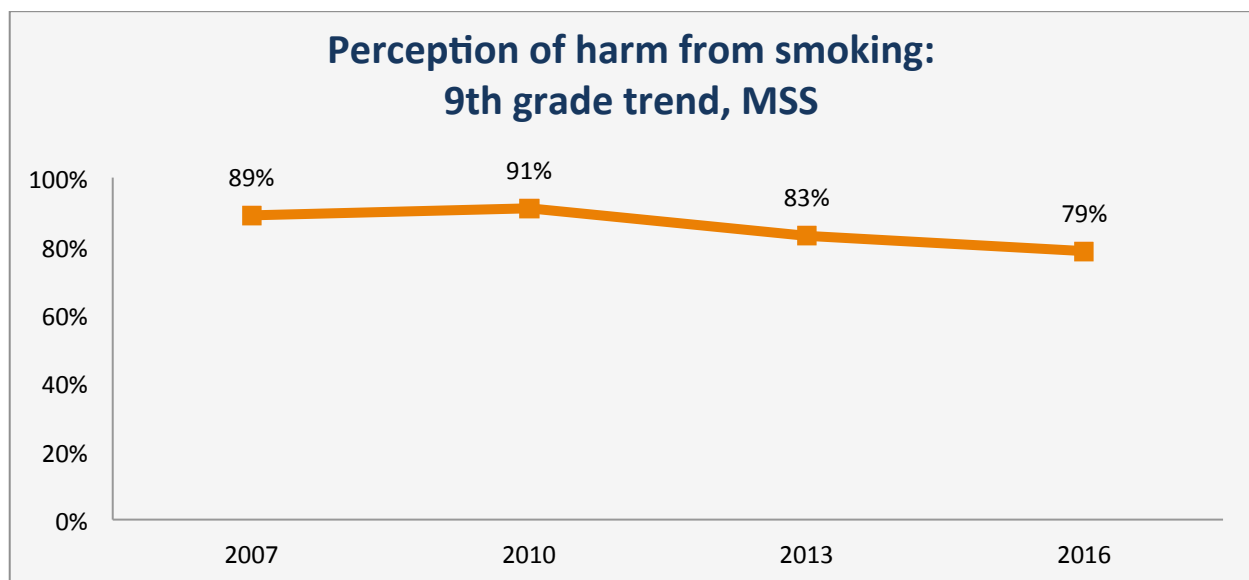


Students reporting they think people put themselves at "great" or "moderate" risk of harming themselves physically or in other ways by smoking 1 or more packs of cigarettes per day, 2016 MSS

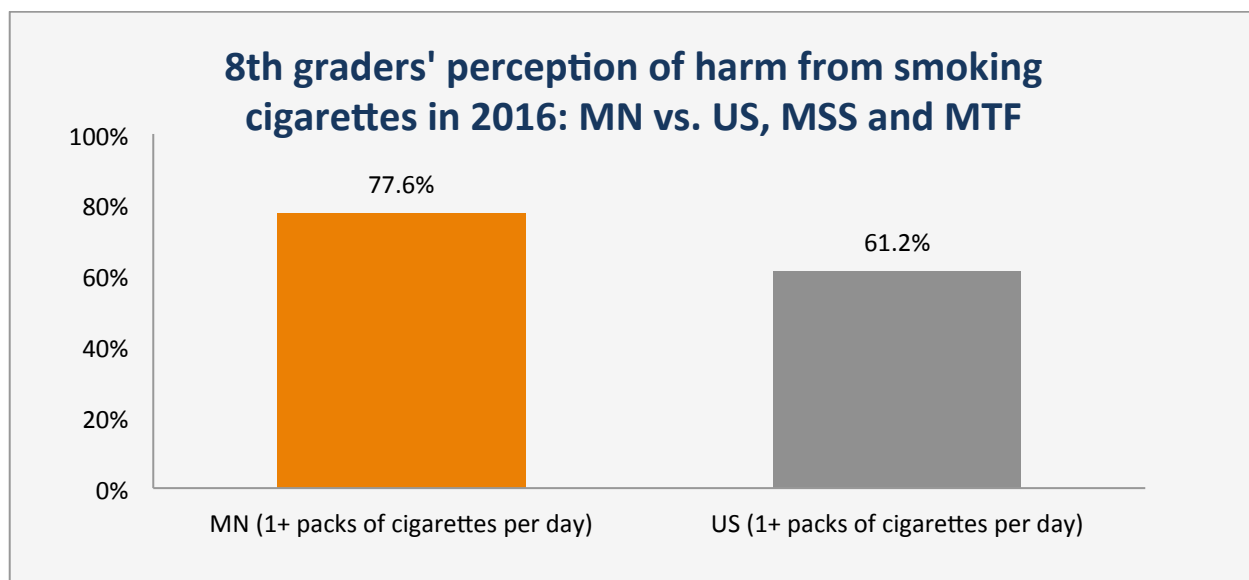
| | Male | | Female | | Total | |
|------------|--------|-------|--------|-------|---------|-------|
| | N (#) | % | N (#) | % | N (#) | % |
| 5th Grade | 14,153 | 75.1% | 14,291 | 77.2% | 28,444 | 76.1% |
| 8th Grade | 14,880 | 75.4% | 15,932 | 79.6% | 30,812 | 77.6% |
| 9th Grade | 14,586 | 76.3% | 15,837 | 80.7% | 30,423 | 78.5% |
| 11th Grade | 12,212 | 77.9% | 13,356 | 83.0% | 25,568 | 80.5% |
| Total | 55,831 | 76.1% | 59,416 | 80.0% | 115,247 | 78.1% |

Tobacco and Nicotine: Intervening Variables

Data source: MSS and MTF



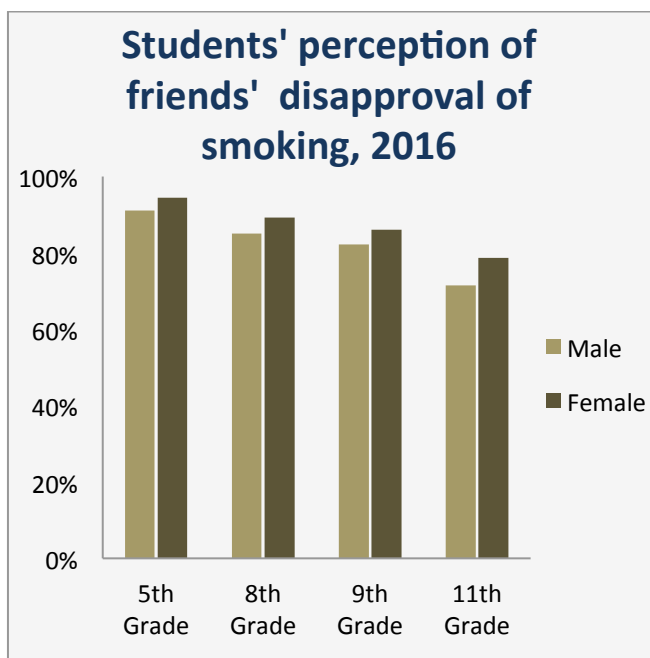
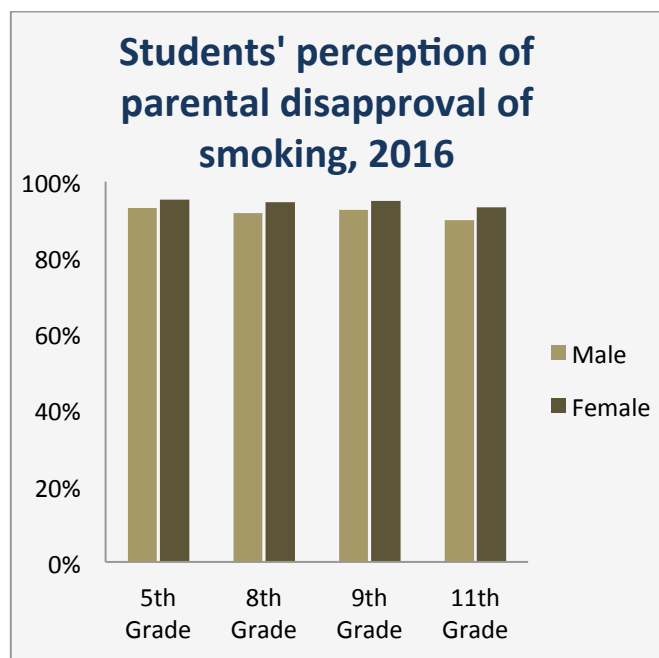
Minnesota's 8th graders' perception of risk of harm from smoking cigarettes is higher than the US average, and Minnesota 9th graders' perception of risk is even higher than that of the 8th graders'.



NOTE: US number is taken from the MTF survey, and represents students who responded that smoking puts a person at "great risk" of harm. Other risk categories included "no risk," slight risk," and "moderate risk."

Tobacco and Nicotine: Intervening Variables

Data source: MSS



Minnesota students reporting their parents or guardians would feel it is "wrong" or "very wrong" for them to smoke cigarettes, 2016

| | Male | | Female | | Total | |
|------------|--------|-------|--------|-------|---------|-------|
| | N (#) | % | N (#) | % | N (#) | % |
| 5th Grade | 17,735 | 93.1% | 17,944 | 95.2% | 35,679 | 94.1% |
| 8th Grade | 18,133 | 91.8% | 19,023 | 94.6% | 37,156 | 93.2% |
| 9th Grade | 17,677 | 92.5% | 18,601 | 94.9% | 36,278 | 93.7% |
| 11th Grade | 14,100 | 89.8% | 15,004 | 93.2% | 29,104 | 91.5% |
| Total | 67,645 | 91.9% | 70,572 | 94.5% | 138,217 | 93.2% |

Minnesota students reporting their friends would feel it is "wrong" or "very wrong" for them to smoke cigarettes, 2016

| | Male | | Female | | Total | |
|------------|--------|-------|--------|-------|---------|-------|
| | N (#) | % | N (#) | % | N (#) | % |
| 5th Grade | 17,191 | 91.1% | 17,689 | 94.5% | 34,880 | 92.8% |
| 8th Grade | 16,753 | 85.1% | 17,884 | 89.2% | 34,637 | 87.2% |
| 9th Grade | 15,613 | 82.2% | 16,825 | 86.1% | 32,438 | 84.2% |
| 11th Grade | 11,179 | 71.5% | 12,641 | 78.7% | 23,820 | 75.1% |
| Total | 60,736 | 83.0% | 65,039 | 87.5% | 125,775 | 85.2% |

2017



Substance Abuse in Minnesota: A State Epidemiological Profile

Section 5.

Drugs: Use, Consequences, and Intervening Variables

Prepared by: EpiMachine, LLC

**for the Minnesota Department of Human Services, Alcohol and
Drug Abuse Division**

Substance Abuse in Minnesota

Section 5. Drugs: Use, Consequences, and Intervening Variables

The 2017 Minnesota State EpiProfile is divided into seven parts:

- 1. Introduction (which includes a profile overview, population snapshot, and acknowledgements)**
- 2. Executive Summary**
- 3. Alcohol: Use, Consequences, and Intervening Variables**
- 4. Tobacco and Nicotine: Use, Consequences, and Intervening Variables**
- 5. Drugs: Use, Consequences, and Intervening Variables**
- 6. Mental Health and Shared Factors**
- 7. Appendix (which includes technical notes and data sources)**

Illicit Drugs in Minnesota: Use Marijuana Use

About the Indicator

Current marijuana use is often assessed by reported use in the past 30 days (30-day use). Past 12-month use is also included.

Data Source(s)

Adults

National Survey on Drug Use and Health (NSDUH) and the Minnesota Survey of Adult Substance Use (MNSASU)

Youth

Minnesota Student Survey (MSS) and Monitoring the Future (MTF)

Section Summary

Adults

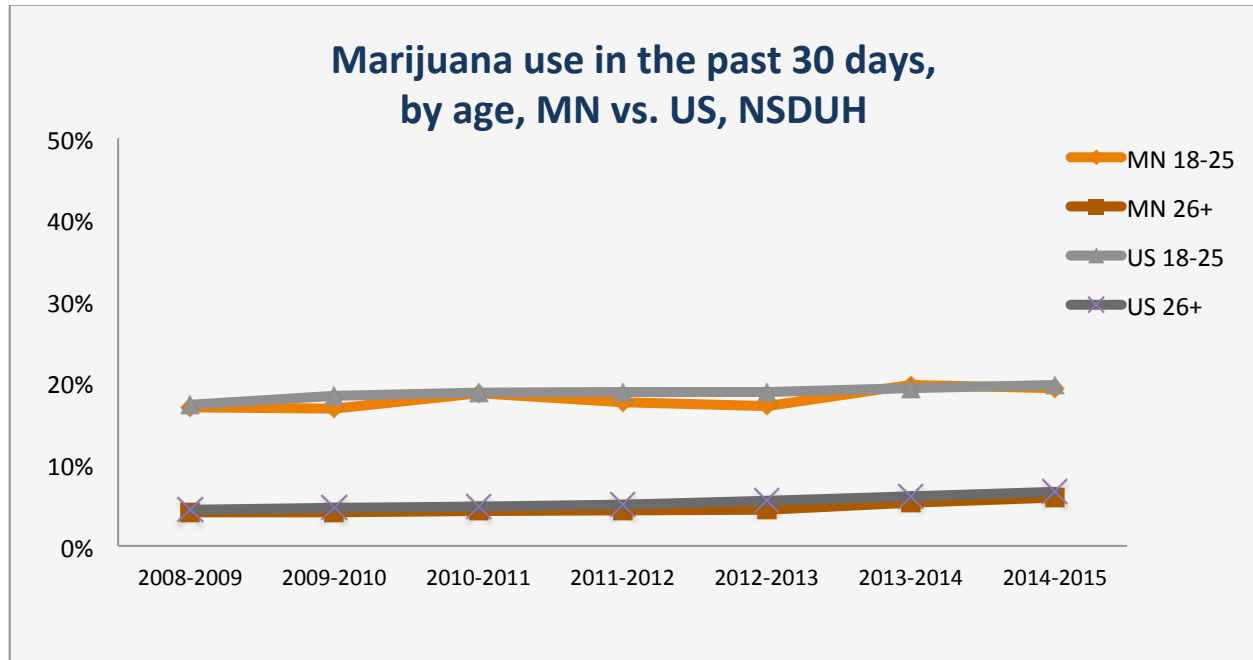
- Since 2008-2009, Minnesota's rates of marijuana use have remained relatively flat (NSDUH), with a slight increase after 2012-2013.
- Males, young adults, American Indians and bi- or multiracial individuals reported higher levels of past 30-day marijuana use (MNSASU).

Youth

- The use of marijuana by 9th grade students decreased from 14% in 2001 to 6.7% in 2016.
- Almost 16% of 11th graders reported past 30-day marijuana use in 2016. Almost 23% reported past-year usage.

Illicit Drug Use: Marijuana

Data source: NSDUH



Adults Reporting Marijuana Use in the Past 30 Days, NSDUH

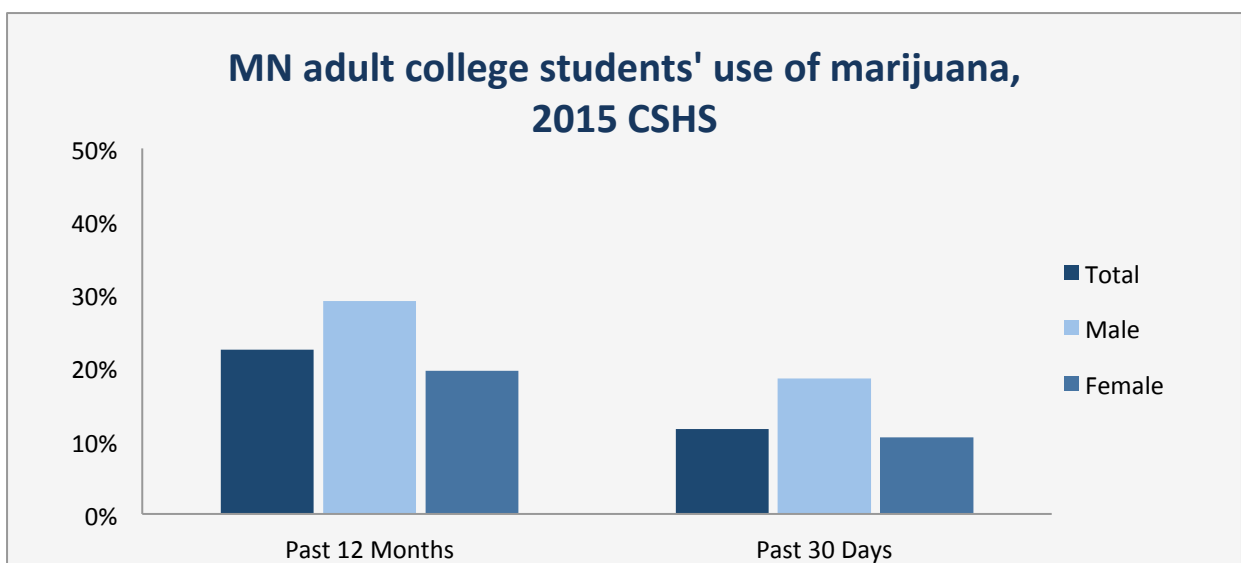
| Minnesota | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Marijuana use 12+ | 6.0% | 5.9% | 6.4% | 6.3% | 6.2% | 7.3% | 7.6% |
| Ages 12 thru 17 | 5.6% | 6.1% | 6.8% | 7.3% | 6.7% | 6.8% | 6.2% |
| Ages 18 thru 25 | 17.0% | 16.8% | 18.7% | 17.6% | 17.1% | 19.7% | 19.3% |
| Ages 26 and Over | 4.1% | 4.1% | 4.3% | 4.3% | 4.4% | 5.3% | 5.9% |
| United States | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Marijuana use 12+ | 6.4% | 6.8% | 6.9% | 7.1% | 7.4% | 8.0% | 8.3% |
| Ages 12 thru 17 | 7.0% | 7.4% | 7.6% | 7.6% | 7.2% | 7.2% | 7.2% |
| Ages 18 thru 25 | 17.3% | 18.4% | 18.8% | 18.9% | 18.9% | 19.3% | 19.7% |
| Ages 26 and Over | 4.4% | 4.7% | 4.8% | 5.1% | 5.5% | 6.1% | 6.6% |
| MN:US rate ratio | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Marijuana use 12+ | 0.94 | 0.88 | 0.93 | 0.89 | 0.84 | 0.91 | 0.92 |

NOTE: Total percent represents the total number of survey respondents reporting use divided by the total number of survey respondents who answered the question. Percent within an age group, for example, represents the total number of survey respondents in the age group reporting use, divided by the total number of survey respondents in that age group who answered the question. Estimates are based on a survey-weighted hierarchical Bayes estimation approach.

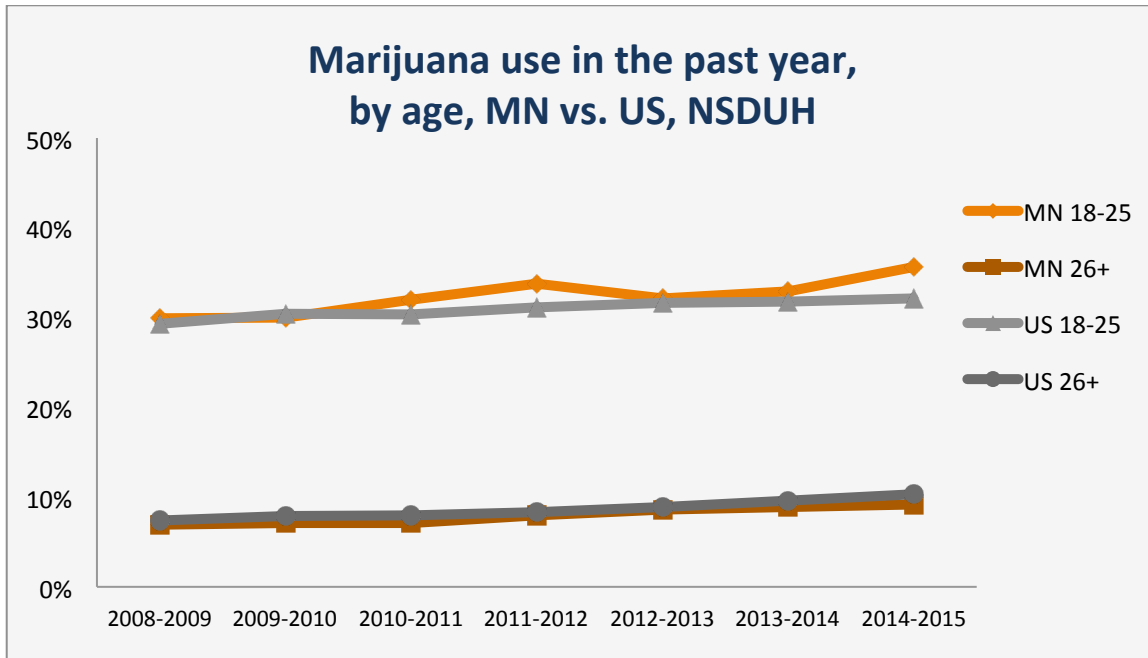
Illicit Drug Use: Marijuana

Data Source: MNSASU and CSHS

| Percent of Minnesota adults reporting marijuana use within the past 30 days, MNSASU | | | | |
|---|---------------------------------|--------|--------|--------|
| | | 2004 | 2010 | 2015 |
| Age | Ages 18 thru 24 | 22.40% | 23.30% | 13.00% |
| | Ages 25 thru 44 | 6.20% | 9.80% | 5.90% |
| | Ages 45 thru 64 | 3.80% | 4.90% | 3.10% |
| | Ages 65 and over | * | * | 0.60% |
| Race/Ethnicity | African American or Black | 9.60% | 12.20% | 5.50% |
| | American Indian | 21.00% | 20.50% | 9.90% |
| | Asian American/Pacific Islander | * | 4.00% | 2.80% |
| | Hispanic/Latino | 4.70% | 7.10% | 3.10% |
| | Bi-Racial/Multi-Racial | 18.10% | 24.80% | 7.60% |
| | White | 6.40% | 7.90% | 4.80% |
| Gender | Male | 8.90% | 10.60% | 6.10% |
| | Female | 4.50% | 5.80% | 3.60% |
| | Total | 6.70% | 8.10% | 4.80% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | N/A | N/A | * |
| | Heterosexual | N/A | N/A | * |



Data Source: NSDUH



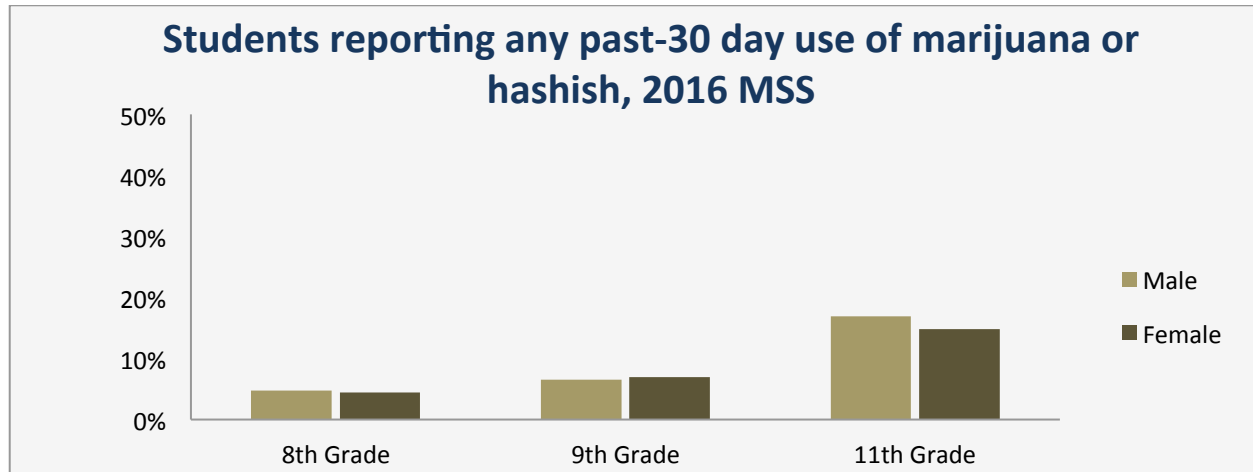
Adults Reporting Marijuana Use in the Past Year, NSDUH

| Minnesota | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
|--------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Marijuana use 12+ | 10.4% | 10.6% | 10.9% | 11.8% | 11.9% | 12.2% | 12.7% |
| Ages 12 thru 17 | 11.3% | 11.9% | 13.2% | 13.6% | 12.0% | 11.6% | 11.4% |
| Ages 18 thru 25 | 29.9% | 30.0% | 32.0% | 33.8% | 32.1% | 32.9% | 35.6% |
| Ages 26 and Over | 6.9% | 7.1% | 7.1% | 8.0% | 8.6% | 8.9% | 9.2% |
| United States | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Marijuana use 12+ | 10.9% | 11.5% | 11.6% | 11.8% | 12.3% | 12.9% | 13.4% |
| Ages 12 thru 17 | 13.4% | 13.8% | 14.1% | 13.9% | 13.5% | 13.3% | 12.9% |
| Ages 18 thru 25 | 29.3% | 30.4% | 30.4% | 31.1% | 31.6% | 31.8% | 32.1% |
| Ages 26 and Over | 7.4% | 7.9% | 8.0% | 8.3% | 8.9% | 9.6% | 10.3% |
| MN:US rate ratio | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Marijuana use 12+ | 0.95 | 0.92 | 0.94 | 1.00 | 0.97 | 0.95 | 0.95 |

NOTE: Total percent represents the total number of survey respondents reporting use divided by the total number of survey respondents who answered the question. Percent within an age group, for example, represents the total number of survey respondents in the age group reporting use, divided by the total number of survey respondents in that age group who answered the question.

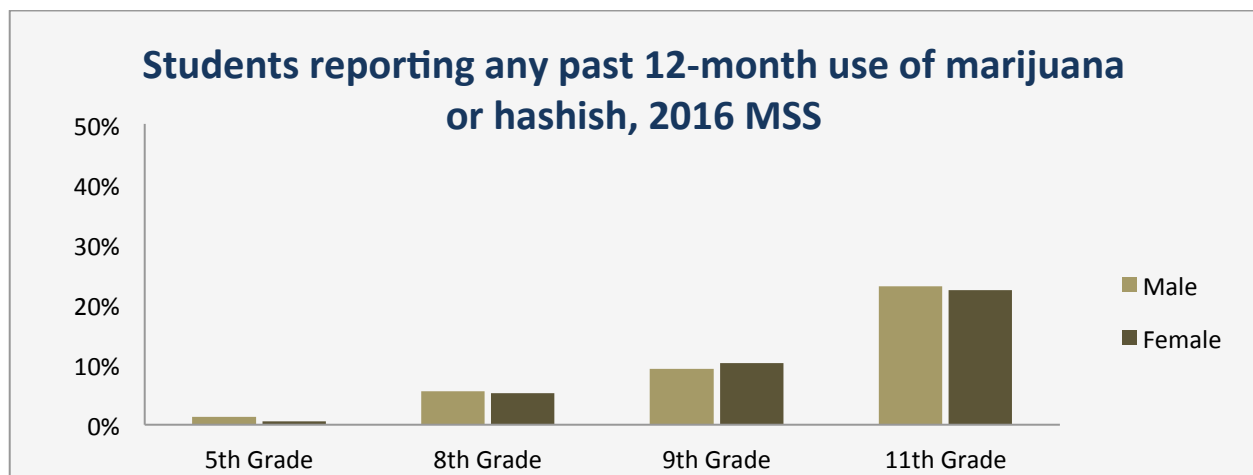
Illicit Drug Use: Marijuana

Data Source: MSS



Minnesota Students Reporting Marijuana Use in the Past 30 Days by Gender and Grade, 2016 MSS

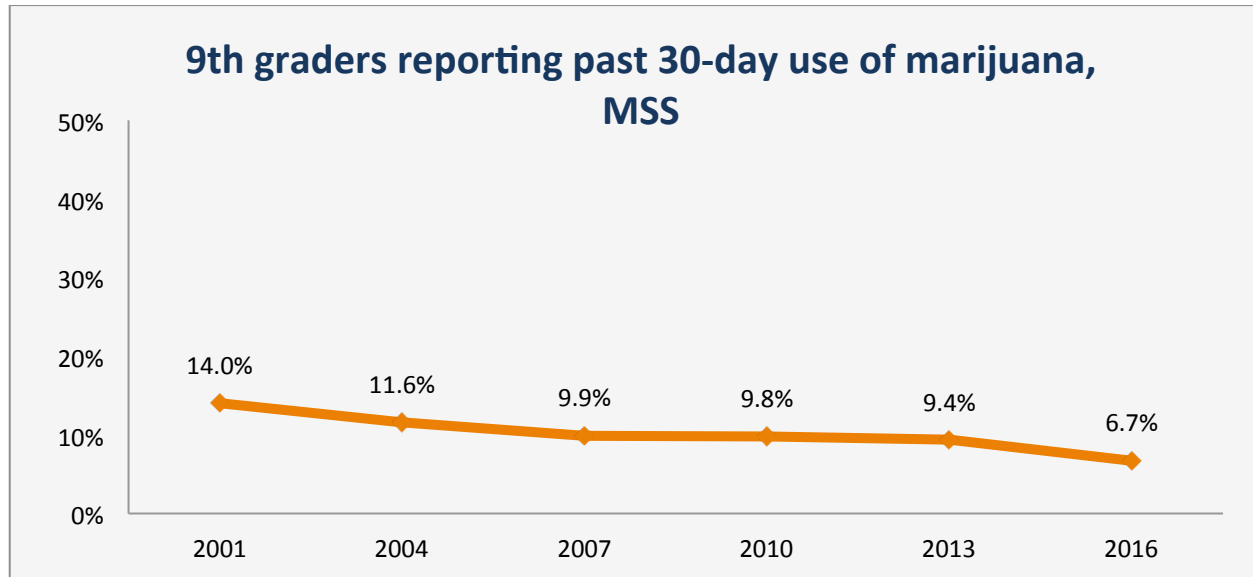
| | | Male | | Female | | Total | |
|-------|------------------|-------|-------|--------|-------|-------|-------|
| | | N (#) | % | N (#) | % | N (#) | % |
| Grade | 8 th | 972 | 4.8% | 892 | 4.4% | 1,864 | 4.6% |
| | 9 th | 1,283 | 6.5% | 1,386 | 6.9% | 2,669 | 6.7% |
| | 11 th | 2,712 | 16.9% | 2,413 | 14.8% | 5,125 | 15.8% |
| | Total | 4,967 | 8.9% | 4,691 | 8.6% | 9,658 | 8.3% |



Minnesota Students Reporting Marijuana Use in the Past 12 Months by Gender and Grade, 2016 MSS

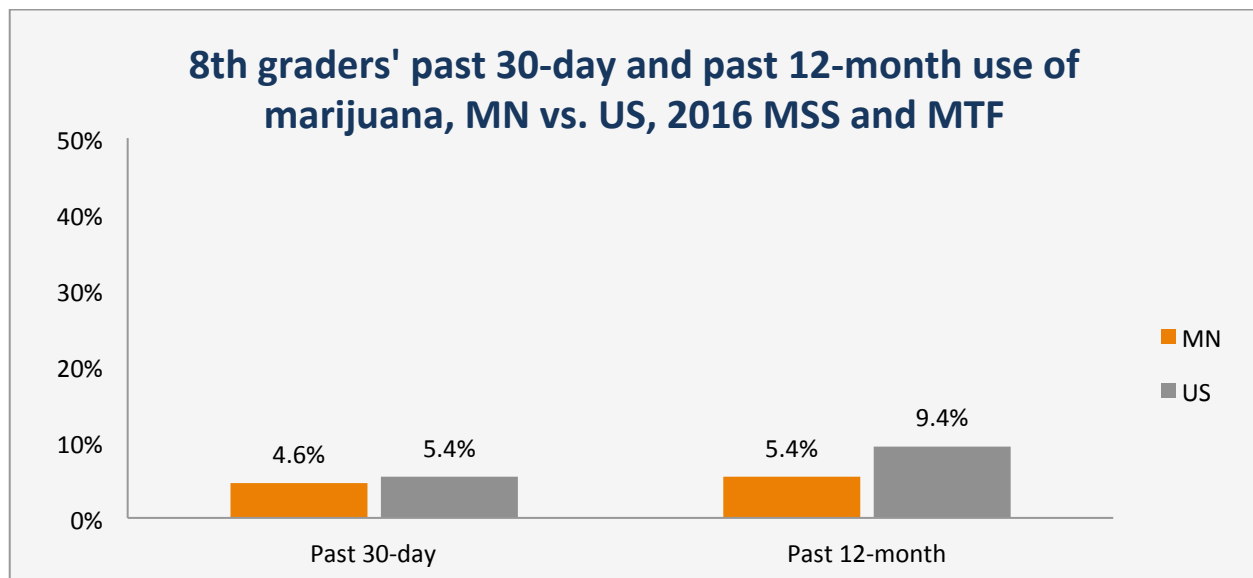
| | | Male | | Female | | Total | |
|-------|------------------|-------|-------|--------|-------|-------|-------|
| | | N (#) | % | N (#) | % | N (#) | % |
| Grade | 5 th | 253 | 1.3% | 118 | 0.6% | 371 | 0.9% |
| | 8 th | 1,177 | 5.6% | 1,102 | 5.2% | 2,279 | 5.4% |
| | 9 th | 1,921 | 9.3% | 2,150 | 10.2% | 4,071 | 9.8% |
| | 11 th | 3,840 | 23.0% | 3,821 | 22.4% | 7,661 | 22.7% |

Data Source: MSS and MTF



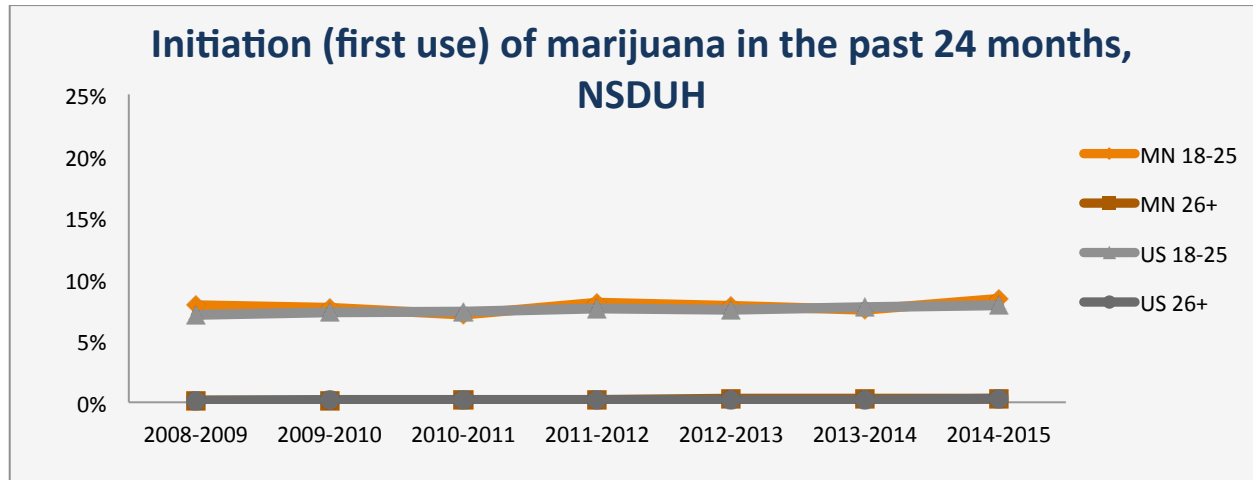
Both the past 30-day and 12-month use of marijuana is lower for Minnesota 8th graders than the national average.

Past 30-day use for 9th graders continues to decrease.



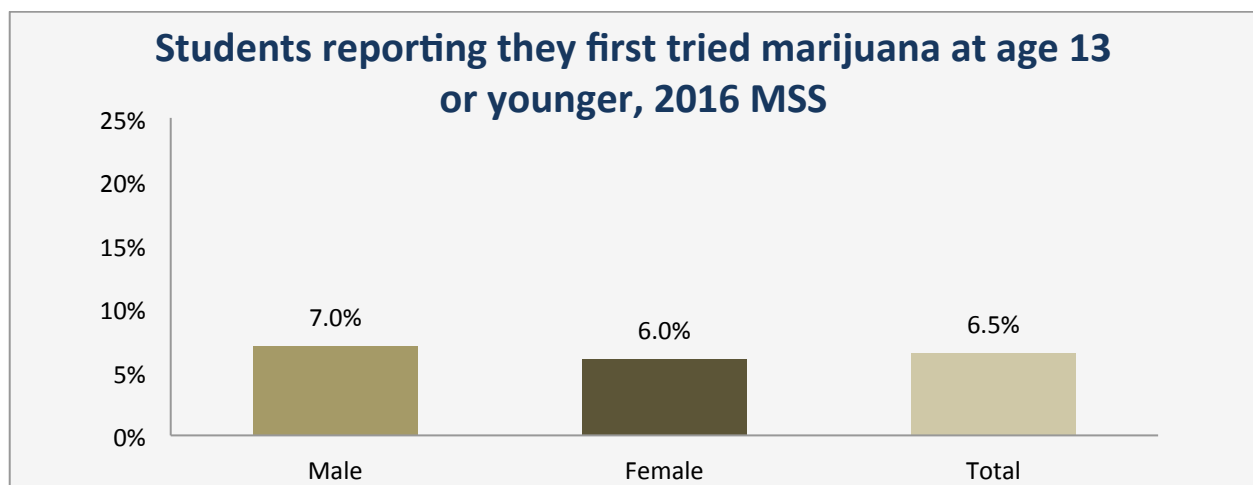
Illicit Drug Use: Marijuana

Data Source: NSDUH and MSS



First Use of Marijuana in the Past 24 Months, NSDUH

| Minnesota | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Initiated 12+ | 1.8% | 1.9% | 1.8% | 1.9% | 1.8% | 1.8% | 1.8% |
| Ages 12 thru 17 | 4.9% | 5.4% | 5.9% | 5.6% | 4.8% | 4.7% | 4.4% |
| Ages 18 thru 25 | 7.9% | 7.7% | 7.1% | 8.1% | 7.8% | 7.5% | 8.4% |
| Ages 26 and Over | 0.1% | 0.1% | 0.2% | 0.2% | 0.3% | 0.3% | 0.3% |
| United States | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Initiated 12+ | 1.8% | 1.8% | 1.9% | 1.9% | 1.9% | 1.9% | 2.0% |
| Ages 12 thru 17 | 5.7% | 5.9% | 6.1% | 6.0% | 5.8% | 5.6% | 5.4% |
| Ages 18 thru 25 | 7.1% | 7.3% | 7.3% | 7.6% | 7.5% | 7.7% | 7.9% |
| Ages 26 and Over | 0.1% | 0.2% | 0.2% | 0.2% | 0.2% | 0.2% | 0.3% |
| MN:US rate ratio | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Initiated 12+ | 1.00 | 1.06 | 0.95 | 1.00 | 0.95 | 0.95 | 0.90 |



Other Illicit Drug Use

About the Indicator

Illicit drug use is measured here using reported 12-month use of any illicit drug other than marijuana.

Adults

- Any illicit drug use
- Non-medicinal use of prescription medications

Youth

- Inhalants
- Methamphetamine
- MDMA/ecstasy
- Crack/cocaine
- Psychedelics
- Heroin
- Over-the-counter drugs
- Synthetic drugs
- Misuse of prescription drugs

Data Source(s)

Adults National Survey on Drug Use and Health (NSDUH), the Minnesota Survey of Adult Substance Use (MNSASU), the College Student Health Survey (CSHS)

Youth Minnesota Student Survey (MSS)

Section Summary

Adults

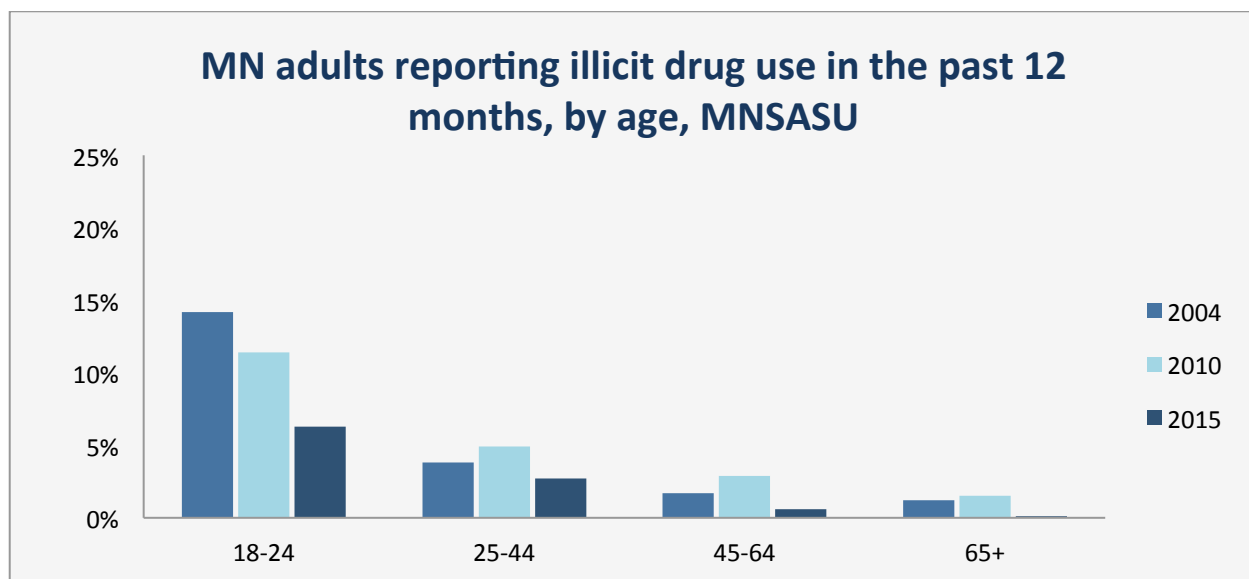
- Current illicit drug use in Minnesota has remained stable in recent years and is below national rates.
- Current illicit drug use is most common among adults age 18-25.
- Synthetic marijuana use was included on the MNSASU in 2015, but only 0.1% of respondents reported using the substance.

Youth

- There has been an overall decrease in reported use of inhalants, methamphetamine, MDMA/Ecstasy, crack/cocaine and psychedelics since 2001.
- Students were most likely to misuse prescription pain relievers, ADD/ADHD medications, and over-the-counter medications.

Illicit Drug Use: Other Drugs

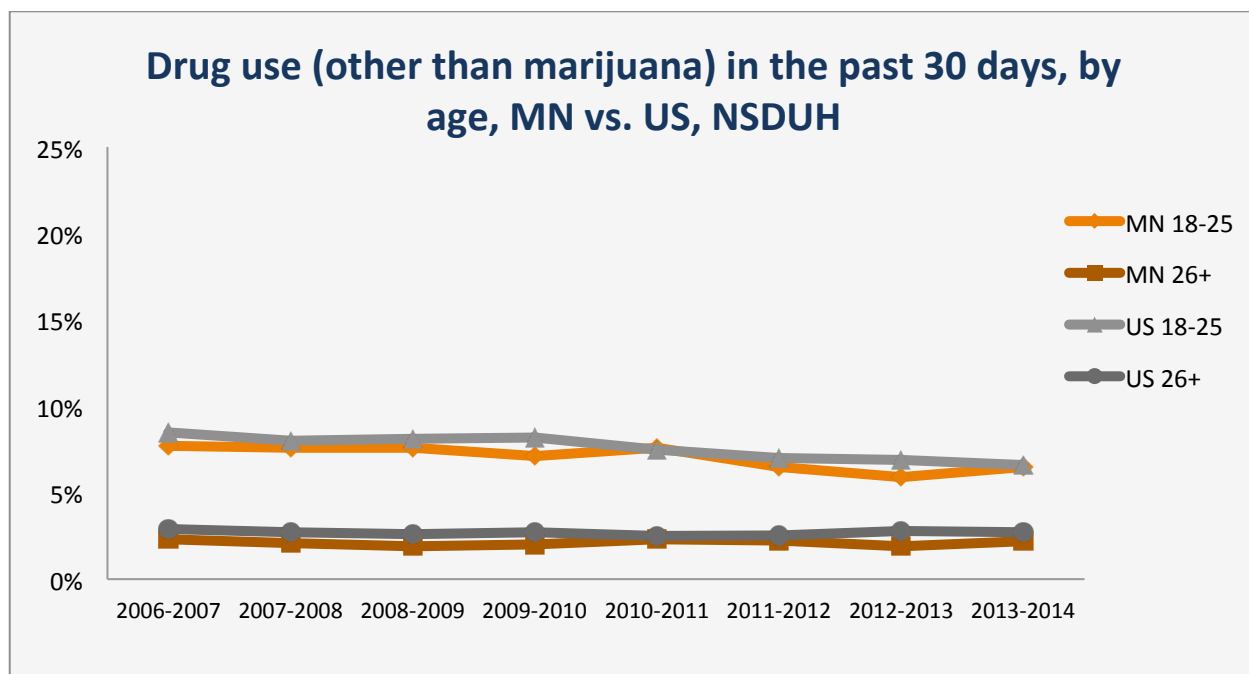
Data Source: MNSASU



| Percent of Minnesota adults reporting any illicit drug use other than marijuana within the past 12 months, MNSASU | | | | |
|---|---------------------------------|--------|--------|-------|
| | | 2004 | 2010 | 2015 |
| Age | Ages 18 thru 24 | 14.20% | 11.40% | 6.30% |
| | Ages 25 thru 44 | 3.80% | 4.90% | 2.70% |
| | Ages 45 thru 64 | 1.70% | 2.90% | 0.60% |
| | Ages 65 and over | 1.20% | 1.50% | 0.10% |
| Race/Ethnicity | African American or Black | 6.30% | 5.10% | * |
| | American Indian | 16.60% | 11.10% | * |
| | Asian American/Pacific Islander | 1.70% | 3.70% | * |
| | Hispanic/Latino | 8.00% | 7.80% | * |
| | Bi-Racial/Multi-Racial | 12.10% | 12.70% | * |
| | White | 3.90% | 4.30% | 1.90% |
| Gender | Male | 4.90% | 5.30% | 2.50% |
| | Female | 3.50% | 3.90% | 1.40% |
| | Total | 4.20% | 4.60% | 1.90% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | N/A | N/A | 6.60% |
| | Heterosexual | N/A | N/A | 1.80% |

Illicit Drug Use: Other Drugs

Data Source: NSDUH



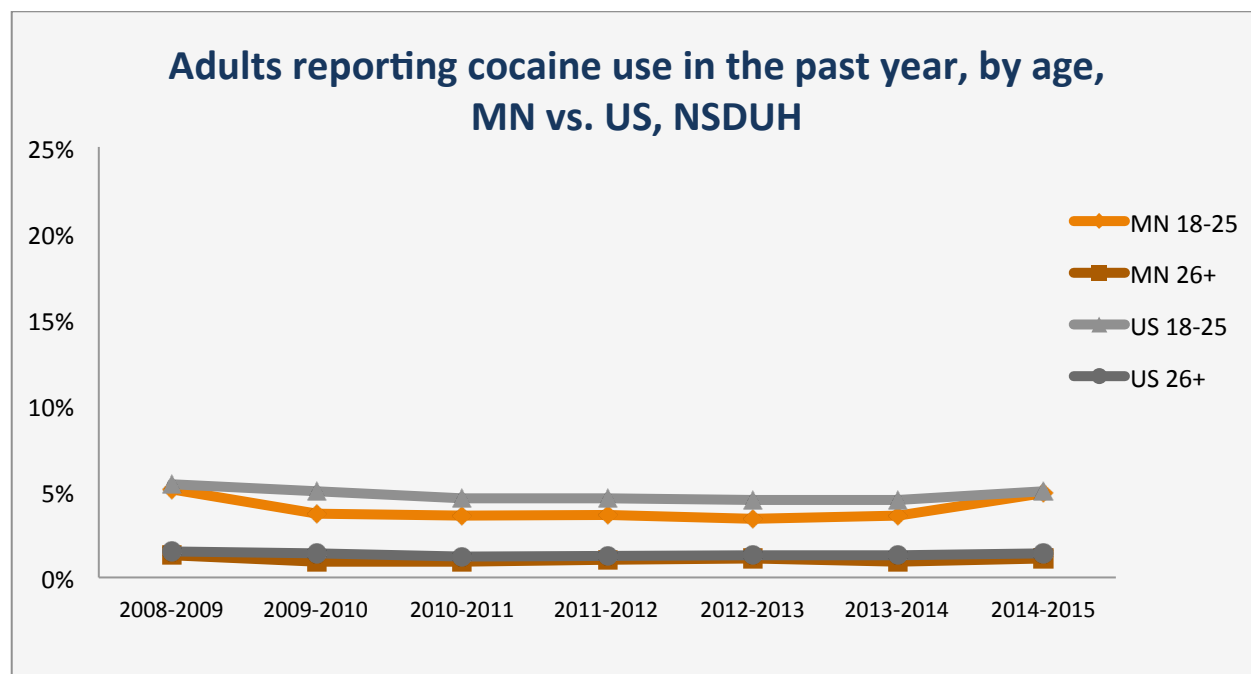
Percent of Population Reporting Drug Use (Other than Marijuana) in the Past 30 Days, NSDUH

| Minnesota | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Drug use 12+ | 3.2% | 3.1% | 2.8% | 2.8% | 3.2% | 2.9% | 2.5% | 2.8% |
| Ages 12 thru 17 | 4.6% | 4.3% | 3.7% | 3.6% | 3.8% | 3.5% | 2.5% | 2.8% |
| Ages 18 thru 25 | 7.7% | 7.6% | 7.6% | 7.1% | 7.6% | 6.5% | 5.9% | 6.5% |
| Ages 26 and Over | 2.3% | 2.1% | 1.9% | 2.0% | 2.3% | 2.3% | 1.9% | 2.2% |
| United States | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
| Drug use 12+ | 3.8% | 3.6% | 3.5% | 3.6% | 3.3% | 3.3% | 3.4% | 3.3% |
| Ages 12 thru 17 | 4.8% | 4.5% | 4.5% | 4.5% | 4.3% | 3.9% | 3.4% | 3.3% |
| Ages 18 thru 25 | 8.5% | 8.0% | 8.1% | 8.2% | 7.5% | 7.0% | 6.9% | 6.6% |
| Ages 26 and Over | 2.9% | 2.7% | 2.6% | 2.7% | 2.5% | 2.5% | 2.8% | 2.7% |
| MN:US rate ratio | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
| Drug use 12+ | 0.84 | 0.86 | 0.80 | 0.79 | 0.95 | 0.88 | 0.74 | 0.85 |

NOTE: This indicator was not measured on the survey after 2013-2014.

Total percent represents the total number of survey respondents reporting use divided by the total number of survey respondents who answered the question. Percent within an age group, for example, represents the total number of survey respondents in the age group reporting use, divided by the total number of survey respondents in that age group who answered the question. Estimates are based on a survey-weighted hierarchical Bayes estimation approach.

Data Source: NSDUH

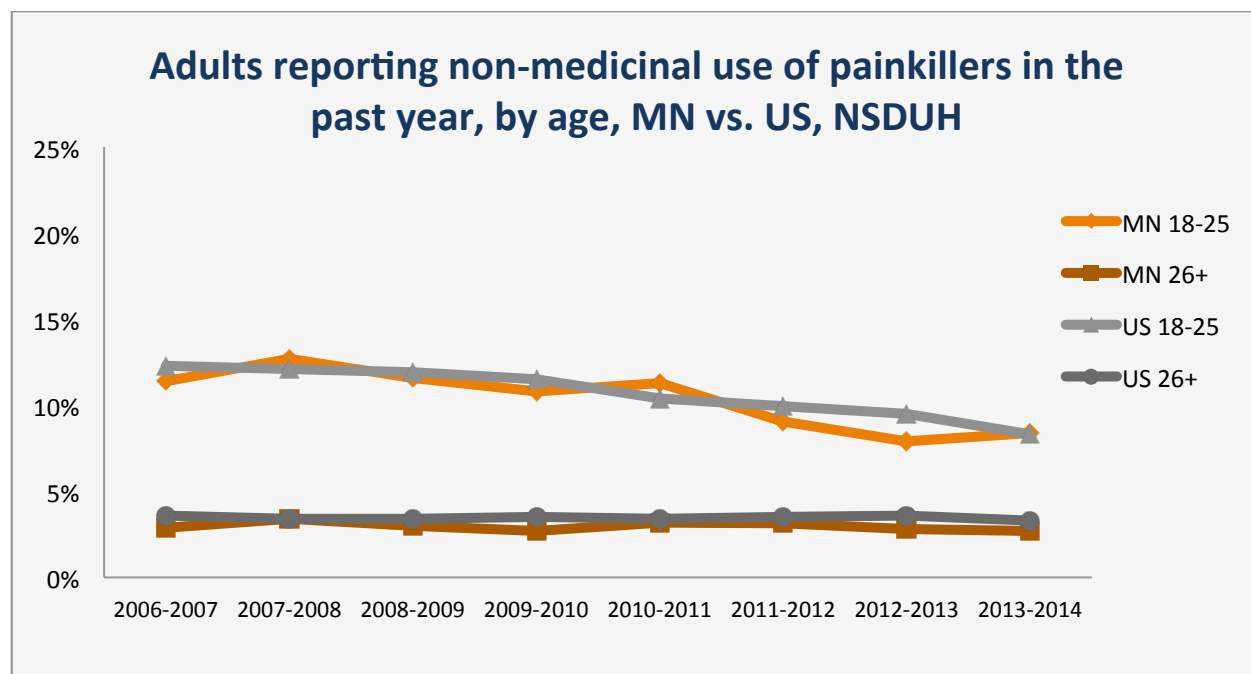


Adults Reporting Any Cocaine Use in the Past Year, NSDUH

| Minnesota | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Cocaine use 12+ | 1.8% | 1.3% | 1.3% | 1.3% | 1.3% | 1.2% | 1.5% |
| Ages 12 thru 17 | 1.1% | 0.9% | 0.8% | 0.6% | 0.5% | 0.5% | 0.6% |
| Ages 18 thru 25 | 5.1% | 3.7% | 3.6% | 3.6% | 3.4% | 3.6% | 4.9% |
| Ages 26 and Over | 1.3% | 0.9% | 0.9% | 1.0% | 1.1% | 0.9% | 1.1% |
| United States | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Cocaine use 12+ | 2.0% | 1.9% | 1.6% | 1.7% | 1.7% | 1.7% | 1.8% |
| Ages 12 thru 17 | 1.1% | 1.0% | 1.0% | 0.8% | 0.6% | 0.6% | 0.6% |
| Ages 18 thru 25 | 5.4% | 5.0% | 4.6% | 4.6% | 4.5% | 4.5% | 5.0% |
| Ages 26 and Over | 1.5% | 1.4% | 1.2% | 1.2% | 1.3% | 1.3% | 1.4% |
| MN:US rate ratio | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| Cocaine use 12+ | 0.90 | 0.68 | 0.77 | 0.76 | 0.76 | 0.71 | 0.83 |

Illicit Drug Use: Other Drugs

Data Source: NSDUH



Adults Reporting Non-Medical Use of Painkillers in the Past Year, NSDUH

| Minnesota | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Painkiller use 12+ | 4.4% | 4.9% | 4.4% | 4.1% | 4.6% | 4.1% | 3.6% | 3.6% |
| Ages 12 thru 17 | 5.8% | 6.5% | 6.1% | 5.7% | 6.2% | 5.2% | 4.0% | 4.0% |
| Ages 18 thru 25 | 11.4% | 12.7% | 11.6% | 10.8% | 11.3% | 9.1% | 7.9% | 8.4% |
| Ages 26 and Over | 2.9% | 3.4% | 3.0% | 2.7% | 3.2% | 3.2% | 2.8% | 2.7% |
| United States | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
| Painkiller use 12+ | 5.1% | 4.9% | 4.8% | 4.9% | 4.6% | 4.6% | 4.5% | 4.1% |
| Ages 12 thru 17 | 6.9% | 6.6% | 6.5% | 6.4% | 6.1% | 5.6% | 5.0% | 4.7% |
| Ages 18 thru 25 | 12.3% | 12.1% | 11.9% | 11.5% | 10.4% | 10.0% | 9.5% | 8.3% |
| Ages 26 and Over | 3.6% | 3.4% | 3.4% | 3.5% | 3.4% | 3.5% | 3.6% | 3.3% |
| MN:US rate ratio | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
| Painkiller use 12+ | 0.86 | 1.00 | 0.92 | 0.84 | 1.00 | 0.89 | 0.80 | 0.88 |

NOTE: This indicator was not measured on the survey after 2013-2014.

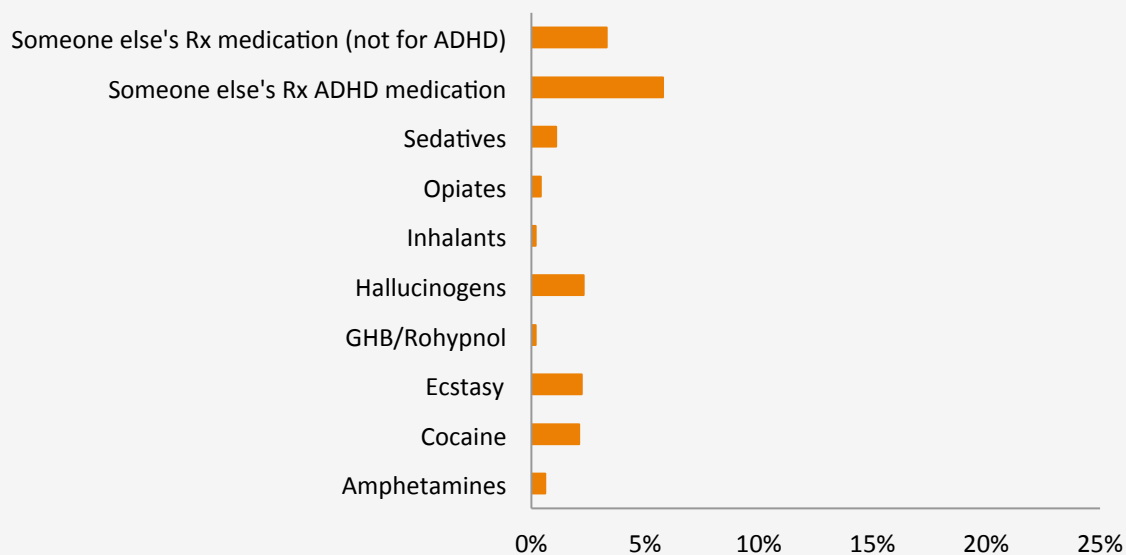
Illicit Drug Use: Other Drugs

Data Source: MNSASU and CSHS

Percent of Minnesota adults reporting use of prescription drugs outside their prescribed use, within the past year, 2015 MNSASU

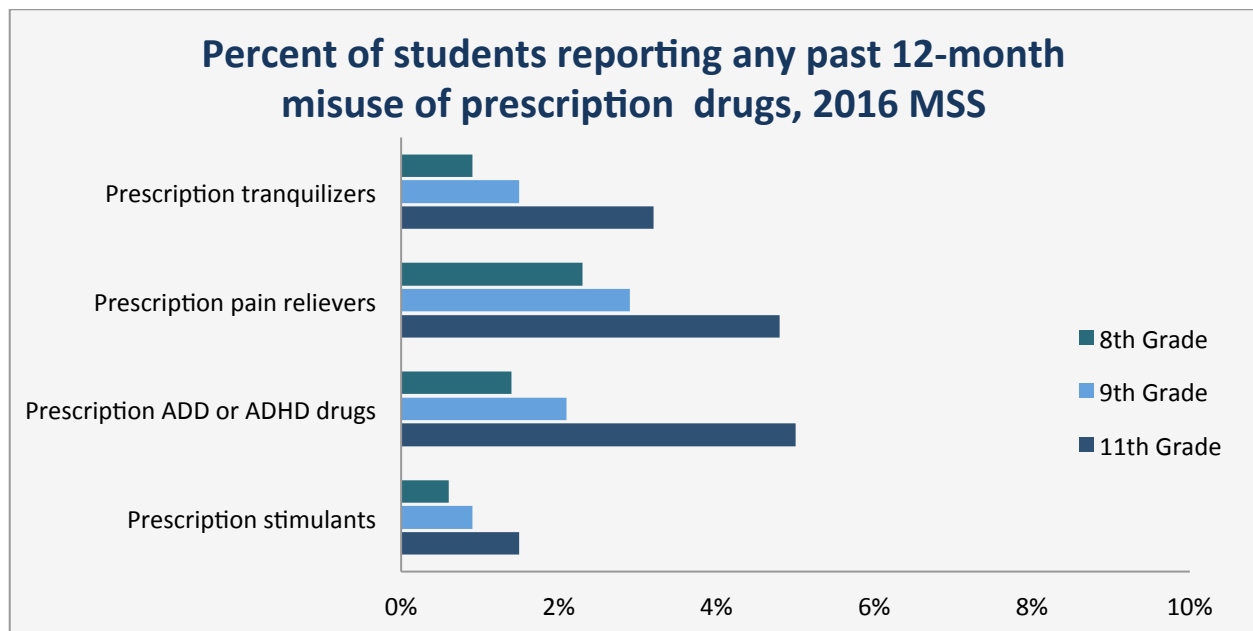
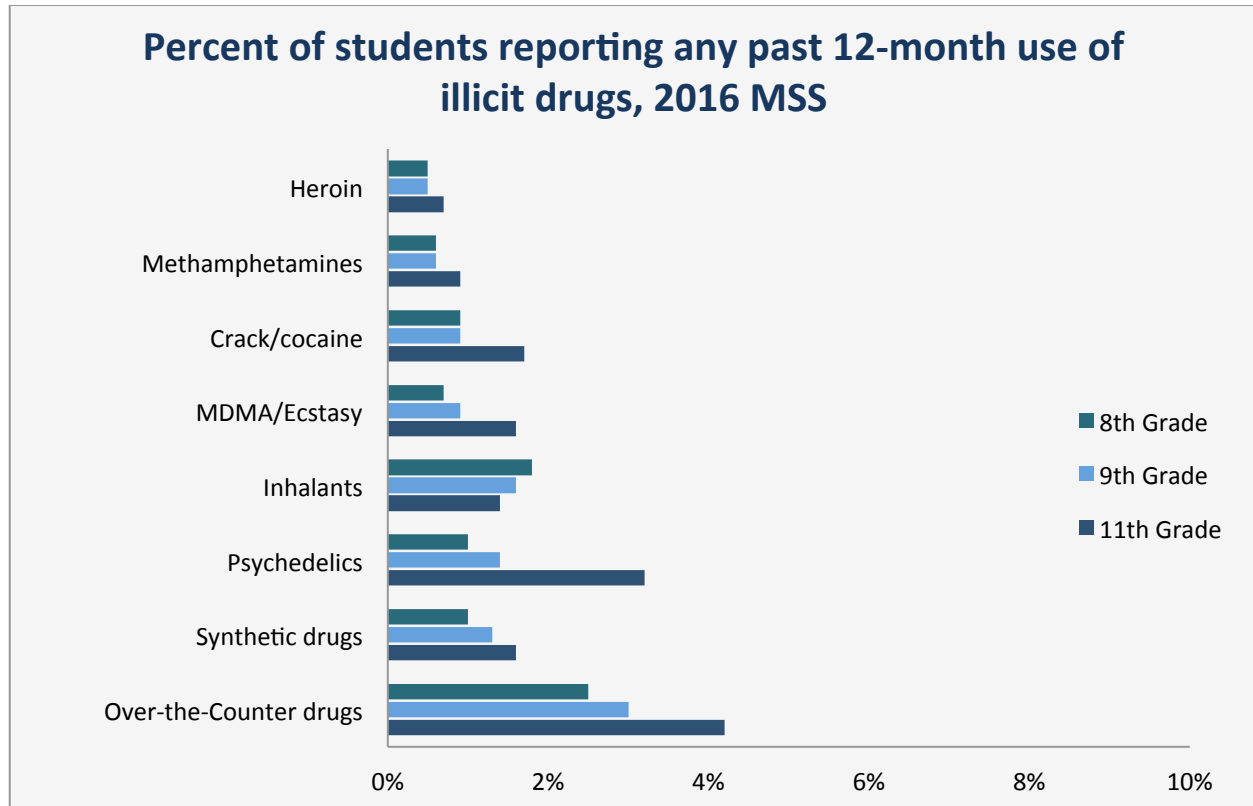
| | | 2015 |
|---------------------------|----------------------------------|-------|
| Age | Ages 18 thru 24 | 0.70% |
| | Ages 25 thru 44 | 3.60% |
| | Ages 45 thru 64 | 1.50% |
| | Ages 65 and over | 0.80% |
| Race/Ethnicity | African American or Black | * |
| | American Indian | 9.20% |
| | Asian American/ Pacific Islander | * |
| | Hispanic/Latino | 2.70% |
| | Bi-Racial/Multi-Racial | * |
| | White | 2.80% |
| Gender | Male | 3.10% |
| | Female | 2.50% |
| | Total | 3.20% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | 8.90% |
| | Heterosexual | 2.50% |

MN adult college students' drug use (other than marijuana), past 12 months, 2015 CSHS



Illicit Drug Use: Other Drugs

Data Source: MSS



Illicit Drug Use: Other Drugs

Data Source: MSS

Percent of Students Reporting any Past 12-Month Use of Illicit Drugs, by Gender, 2016 MSS

| | Total (8 th , 9 th , and 11 th Grades) | | | | | |
|----------------------------------|---|------|--------|------|-------|------|
| | Male | | Female | | Total | |
| | N (#) | % | N (#) | % | N (#) | % |
| Inhalants | 997 | 1.7% | 906 | 1.5% | 1,903 | 1.6% |
| Psychedelics | 1,231 | 2.1% | 836 | 1.4% | 2,067 | 1.8% |
| MDMA/Ecstasy | 733 | 1.3% | 464 | 0.8% | 1,197 | 1.0% |
| Crack/cocaine | 822 | 1.4% | 482 | 0.8% | 1,304 | 1.1% |
| Heroin | 458 | 0.8% | 195 | 0.3% | 653 | 0.6% |
| Methamphetamines | 514 | 0.9% | 280 | 0.5% | 794 | 0.7% |
| Over-the-Counter drugs | 1,753 | 3.0% | 1,914 | 3.3% | 3,667 | 3.1% |
| Synthetic drugs | 791 | 1.4% | 697 | 1.2% | 1,488 | 1.3% |
| Rx pain relievers (misuse) | 1,747 | 3.0% | 1,997 | 3.4% | 3,667 | 3.2% |
| ADD/ADHD drugs (misuse) | 1,663 | 2.9% | 1,456 | 2.5% | 3,119 | 2.7% |
| Tranquilizers/Sedatives (misuse) | 990 | 1.7% | 1,064 | 1.8% | 2,054 | 1.8% |
| Stimulants/Diet Pills (misuse) | 559 | 1.0% | 545 | 0.9% | 1,104 | 0.9% |

Illicit Drug Use: Other Drugs

Data Source: MSS

Percent of Students Reporting any Past 12-Month Use of Illicit Drugs, by Gender and Grade, 2016 MSS

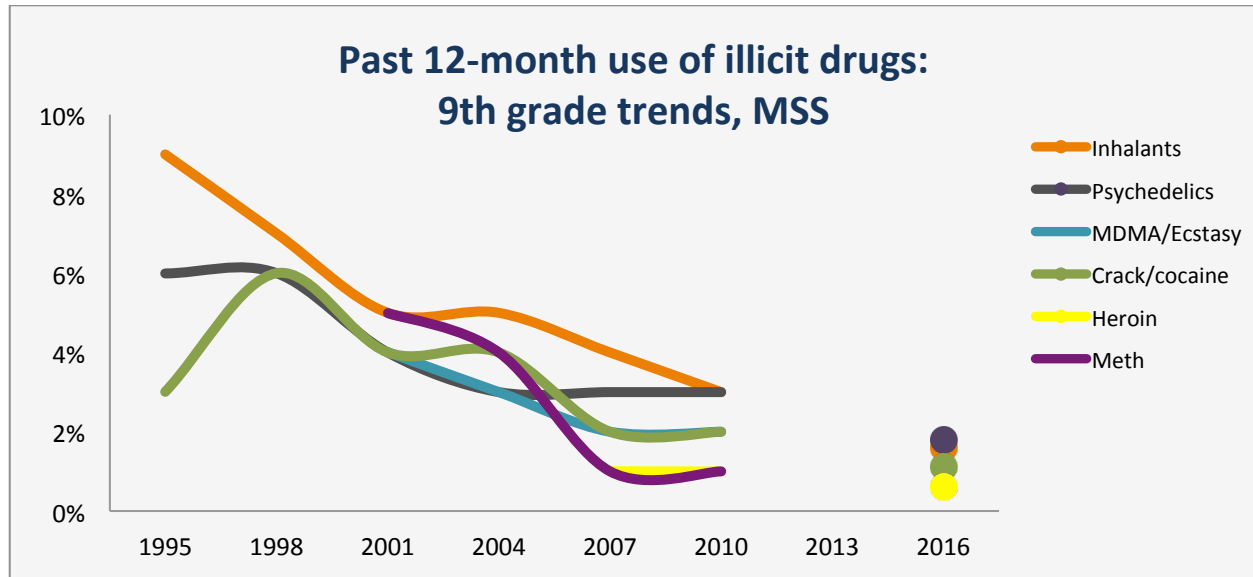
| | Male | | Female | | Total | |
|----------------------------------|-------|------|--------|------|-------|------|
| | N (#) | % | N (#) | % | N (#) | % |
| 8th Grade | | | | | | |
| Inhalants | 383 | 1.7% | 389 | 1.5% | 772 | 1.6% |
| Psychedelics | 250 | 2.1% | 170 | 1.4% | 420 | 1.8% |
| MDMA/Ecstasy | 186 | 1.3% | 107 | 0.8% | 293 | 1.0% |
| Crack/cocaine | 241 | 1.4% | 133 | 0.8% | 374 | 1.1% |
| Heroin | 139 | 0.8% | 73 | 0.3% | 212 | 0.6% |
| Methamphetamines | 163 | 0.9% | 86 | 0.5% | 249 | 0.7% |
| Over-the-Counter drugs | 493 | 3.0% | 544 | 3.3% | 1,037 | 3.1% |
| Synthetic drugs | 232 | 1.4% | 198 | 1.2% | 430 | 1.3% |
| Rx pain relievers (misuse) | 443 | 3.0% | 502 | 3.4% | 945 | 3.2% |
| ADD/ADHD drugs (misuse) | 337 | 2.9% | 227 | 2.5% | 564 | 2.7% |
| Tranquilizers/Sedatives (misuse) | 177 | 1.7% | 180 | 1.8% | 357 | 1.8% |
| Stimulants/Diet Pills (misuse) | 114 | 1.0% | 120 | 0.9% | 234 | 0.9% |

| | | | | | | |
|----------------------------------|-----|------|-----|------|-------|------|
| 9th Grade | | | | | | |
| Inhalants | 324 | 1.8% | 329 | 1.8% | 653 | 1.8% |
| Psychedelics | 318 | 1.2% | 255 | 0.8% | 573 | 1.0% |
| MDMA/Ecstasy | 204 | 0.9% | 158 | 0.5% | 362 | 0.7% |
| Crack/cocaine | 213 | 1.2% | 140 | 0.6% | 353 | 0.9% |
| Heroin | 150 | 0.7% | 56 | 0.3% | 206 | 0.5% |
| Methamphetamines | 156 | 0.8% | 89 | 0.4% | 245 | 0.6% |
| Over-the-Counter drugs | 540 | 2.4% | 681 | 2.6% | 1,221 | 2.5% |
| Synthetic drugs | 258 | 1.1% | 259 | 0.9% | 517 | 1.0% |
| Rx pain relievers (misuse) | 489 | 2.1% | 689 | 2.4% | 1,178 | 2.3% |
| ADD/ADHD drugs (misuse) | 456 | 1.6% | 413 | 1.1% | 869 | 1.4% |
| Tranquilizers/Sedatives (misuse) | 264 | 0.9% | 354 | 0.9% | 618 | 0.9% |
| Stimulants/Diet Pills (misuse) | 170 | 0.6% | 185 | 0.6% | 355 | 0.6% |

| | | | | | | |
|----------------------------------|-----|------|-----|------|-------|------|
| 11th Grade | | | | | | |
| Inhalants | 290 | 1.6% | 188 | 1.6% | 478 | 1.6% |
| Psychedelics | 663 | 1.6% | 411 | 1.2% | 1,074 | 1.4% |
| MDMA/Ecstasy | 343 | 1.0% | 199 | 0.8% | 542 | 0.9% |
| Crack/cocaine | 368 | 1.0% | 209 | 0.7% | 577 | 0.9% |
| Heroin | 169 | 0.7% | 66 | 0.3% | 235 | 0.5% |
| Methamphetamines | 195 | 0.8% | 105 | 0.4% | 300 | 0.6% |
| Over-the-Counter drugs | 720 | 2.6% | 689 | 3.3% | 1,409 | 3.0% |
| Synthetic drugs | 301 | 1.3% | 240 | 1.2% | 541 | 1.3% |
| Rx pain relievers (misuse) | 815 | 2.4% | 806 | 3.3% | 1,621 | 2.9% |
| ADD/ADHD drugs (misuse) | 870 | 2.2% | 816 | 2.0% | 1,686 | 2.1% |
| Tranquilizers/Sedatives (misuse) | 549 | 1.3% | 530 | 1.7% | 1,079 | 1.5% |
| Stimulants/Diet Pills (misuse) | 275 | 0.8% | 240 | 0.9% | 515 | 0.9% |

Illicit Drug Use: Other Drugs

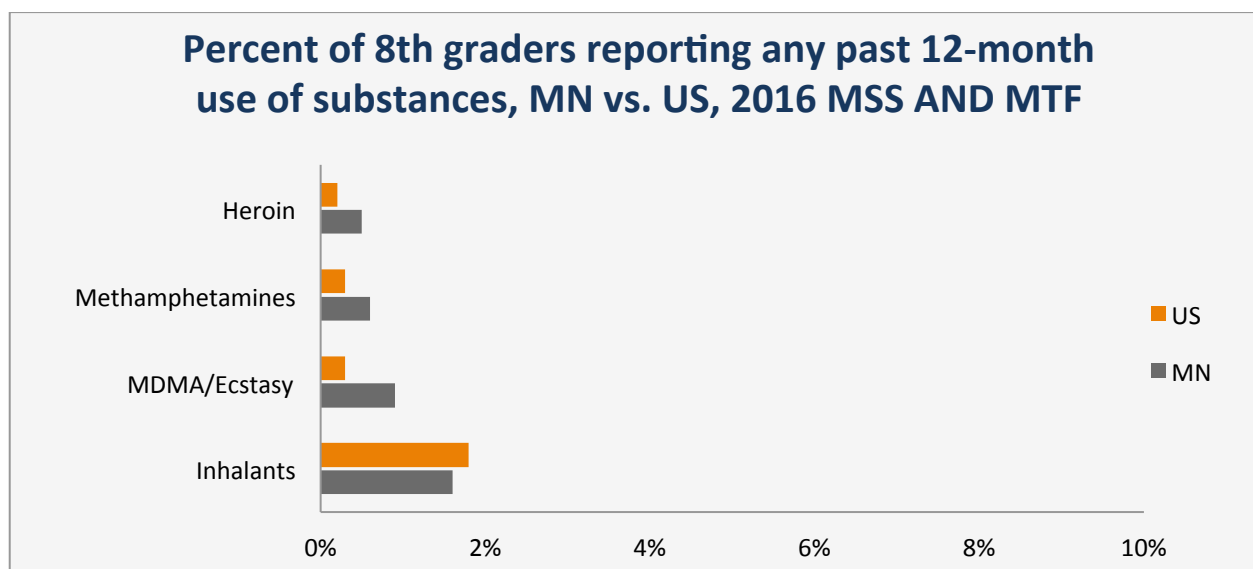
Data Source: MSS and MTF



Percent of 9th Graders Reporting any Past 12-Month Use of Illicit Drugs, MSS

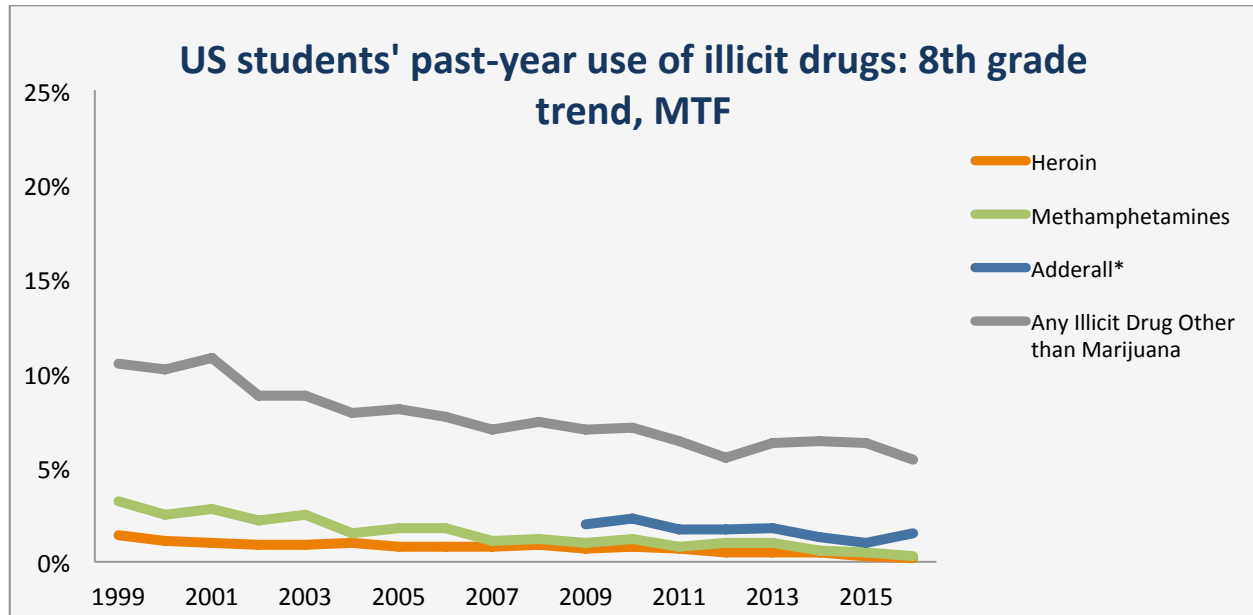
| | 1995 | 1998 | 2001 | 2004 | 2007 | 2010 | 2013 | 2016 |
|------------------------|------|------|------|------|------|------|------|------|
| Inhalants | 9% | 7% | 5% | 5% | 4% | 3% | * | 2% |
| Psychedelics | 6% | 6% | 4% | 3% | 3% | 3% | * | 1% |
| MDMA/Ecstasy | N/A | N/A | 4% | 3% | 2% | 2% | * | 1% |
| Crack/cocaine | 3% | 6% | 4% | 4% | 2% | 2% | * | 1% |
| Heroin | N/A | N/A | N/A | N/A | 1% | 1% | * | 1% |
| Methamphetamines | N/A | N/A | 5% | 4% | 1% | 1% | * | 1% |
| Over-the-Counter drugs | N/A | N/A | N/A | N/A | N/A | N/A | * | 3% |
| Synthetic drugs | N/A | N/A | N/A | N/A | N/A | N/A | * | 1% |

*As a result of skip-pattern irregularities with this set of questions on the 2013 survey, these data are not reliable.

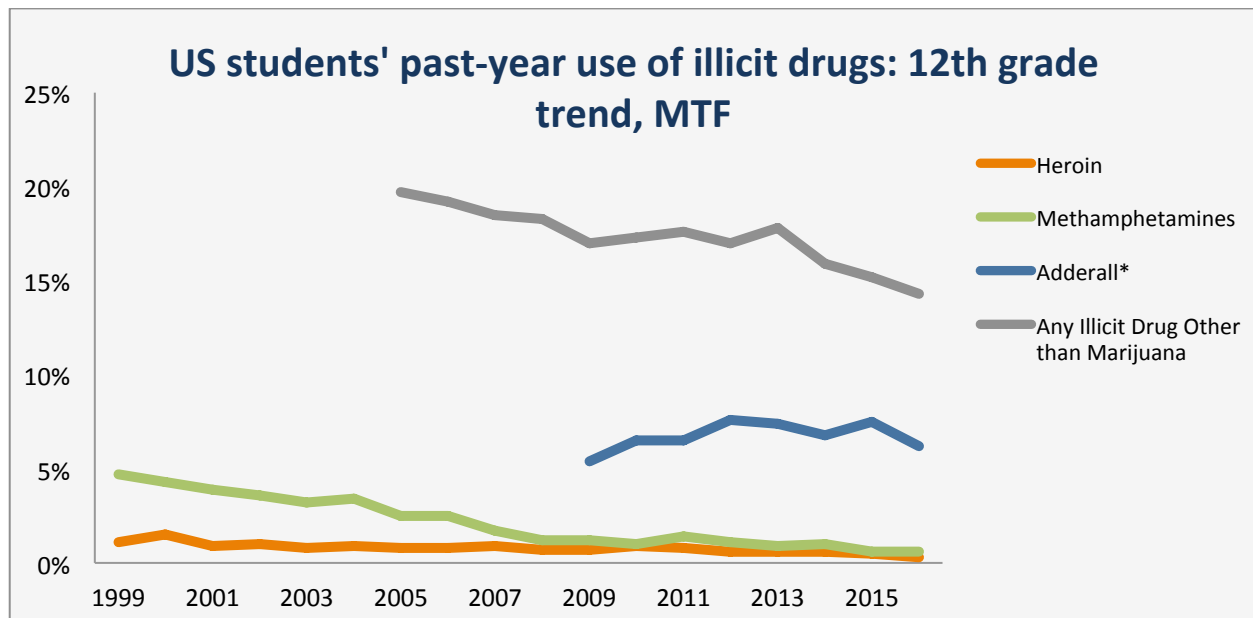


Illicit Drug Use: Other Drugs

Data Source: MTF



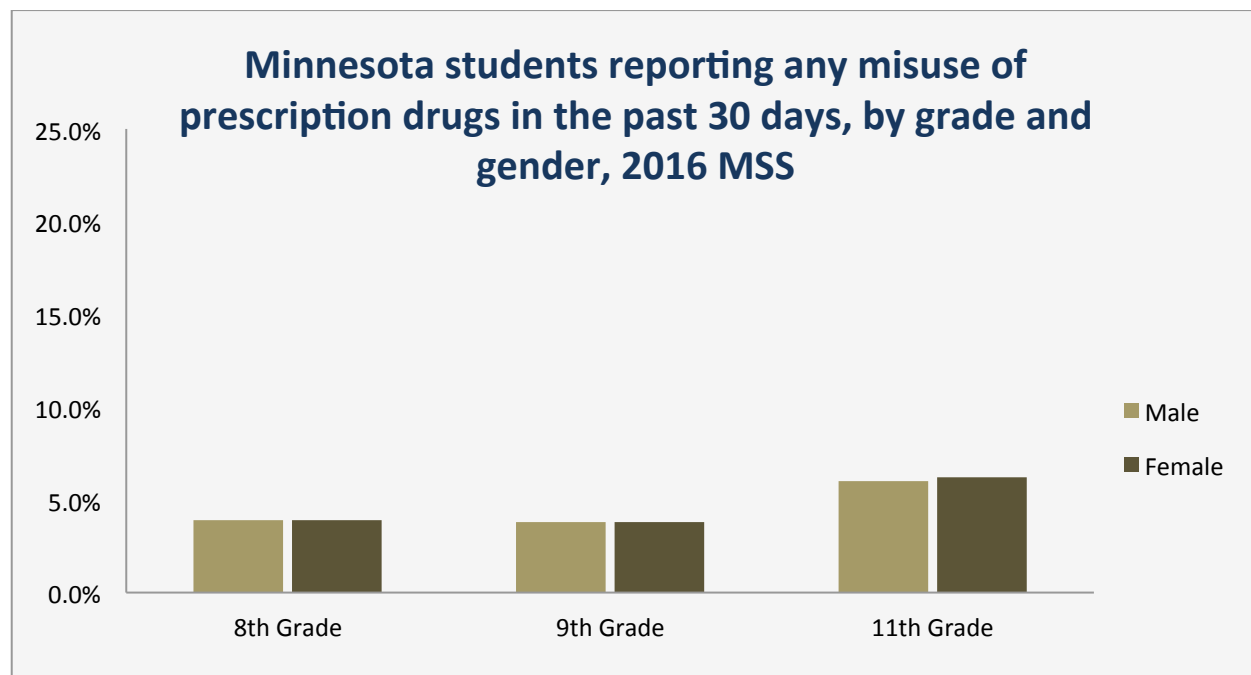
Although not directly comparable to MSS data, national trend data show that use of most illicit drugs has generally been declining, with the exception of Adderall for 12th graders.



NOTE: Data for Adderall are only available since 2009.

Illicit Drug Use: Other Drugs

Data Source: MSS



| Minnesota Students Reporting Any Misuse of Prescription Drugs (Taken Only to Get High) in the Past 30 Days, by Grade and Gender, 2016 MSS | | | | | | |
|---|-------|------|--------|------|-------|------|
| | Male | | Female | | Total | |
| | N | % | N | % | N | % |
| 8 th Grade | 770 | 3.9% | 851 | 3.9% | 1,621 | 4.0% |
| 9 th Grade | 730 | 3.8% | 964 | 3.8% | 1,694 | 4.3% |
| 11 th Grade | 958 | 6.0% | 1,015 | 6.2% | 1,973 | 6.1% |
| Total | 2,458 | 4.5% | 2,830 | 5.0% | 5,288 | 4.7% |

Illicit Drugs in Minnesota: Consequences

Drug-Related Deaths

About the Indicator

Statistics on drug-related mortality refer to deaths related to drug poisonings. According to the Safe States Injury Surveillance Workgroup Consensus Recommendations for National and State Poisoning Surveillance, a drug is defined as “any chemical compound that is chiefly used by or administered to humans or animals as an aid in the diagnosis, treatment, or prevention of disease or injury, for the relief of pain or suffering, to control or improve any physiologic or pathologic condition, or for the feeling it causes.” They define a poisoning as “an exposure to any extrinsic substance by ingestion, inhalation, injection, or absorption through the skin or mucous membranes that results in at least one related adverse clinical effect.”

The International Classification of Diseases (ICD-10) measures all deaths, including those exclusively related to drug poisoning.

The Centers for Disease Control and Prevention (CDC) note that deaths from drug overdose have been on the rise; more than 28,000 people in the U.S. died from opioid overdose in 2014, which is the highest number on record.

<http://www.cdc.gov/drugoverdose/>

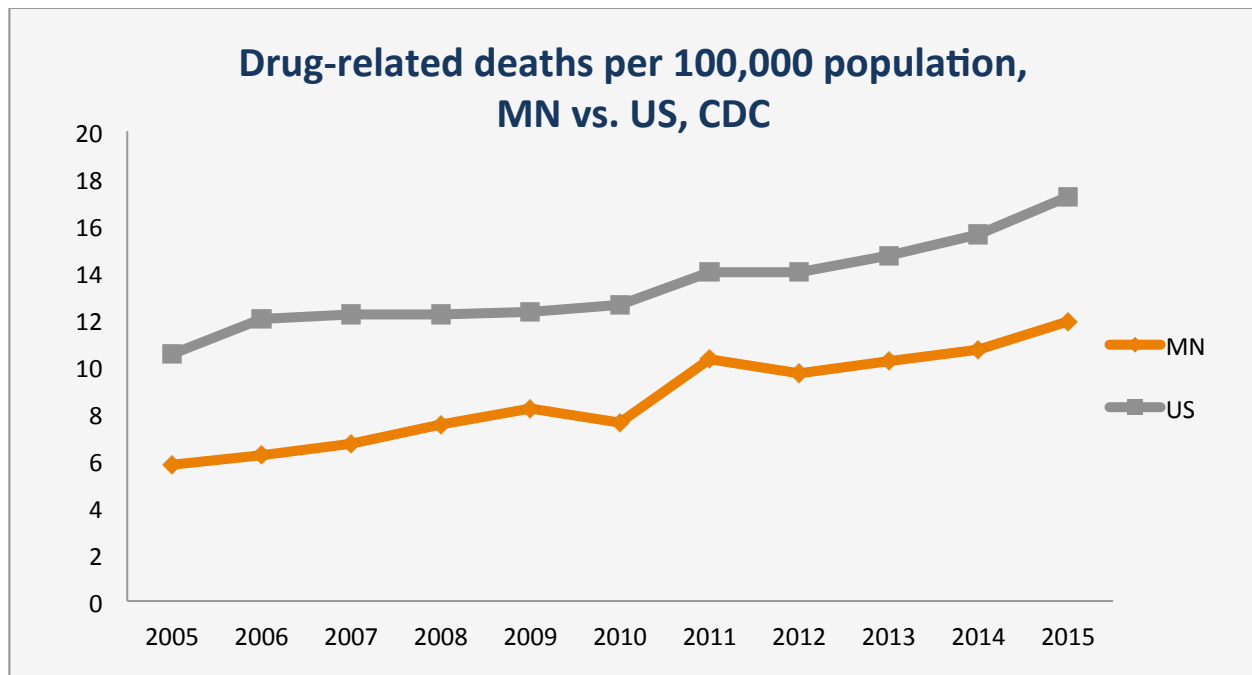
Data Source(s)

CDC Wonder

Section Summary

- Minnesota’s drug poisoning death rate has been consistently lower than the national average, but has risen concurrently.
- The drug poisoning death rate per 100,000 rose in Minnesota from 5.2 in 2004 to 11.9 in 2015.

Data Source: CDC Wonder



Drug-Related Deaths per 100,000 Population, CDC Wonder

| Minnesota | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Drug-related deaths | 326 | 358 | 398 | 438 | 412 | 549 | 523 | 553 | 553 | 653 |
| Rate per 100,000 pop | 6.2 | 6.7 | 7.5 | 8.2 | 7.6 | 10.3 | 9.7 | 10.2 | 10.2 | 11.9 |
| | | | | | | | | | | |
| United States | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Drug-related deaths | 35,938 | 37,046 | 37,491 | 38,005 | 39,320 | 43,544 | 39,615 | 46,471 | 46,471 | 55,403 |
| Rate per 100,000 pop | 12.0 | 12.2 | 12.2 | 12.3 | 12.6 | 14.0 | 14.0 | 14.7 | 14.7 | 17.2 |
| | | | | | | | | | | |
| MN:US | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Drug-related deaths | 0.52 | 0.55 | 0.61 | 0.67 | 0.60 | 0.74 | 0.69 | 0.69 | 0.69 | 0.69 |

HIV/AIDS Cases Involving Intravenous Drug Use

About the Indicator

The Minnesota HIV Surveillance Report describes the number of new occurrences and the prevalence of cases of reported HIV infections and AIDS in Minnesota to the Minnesota Department of Public Health by person, place, race/ethnicity, time, and mode of exposure. Such data provide information about where and among whom HIV transmission is likely occurring. This indicator specifically relates to the number of cases of Minnesotans living with HIV and AIDS for whom the mode of exposure was intravenous drug use.

Data Source(s)

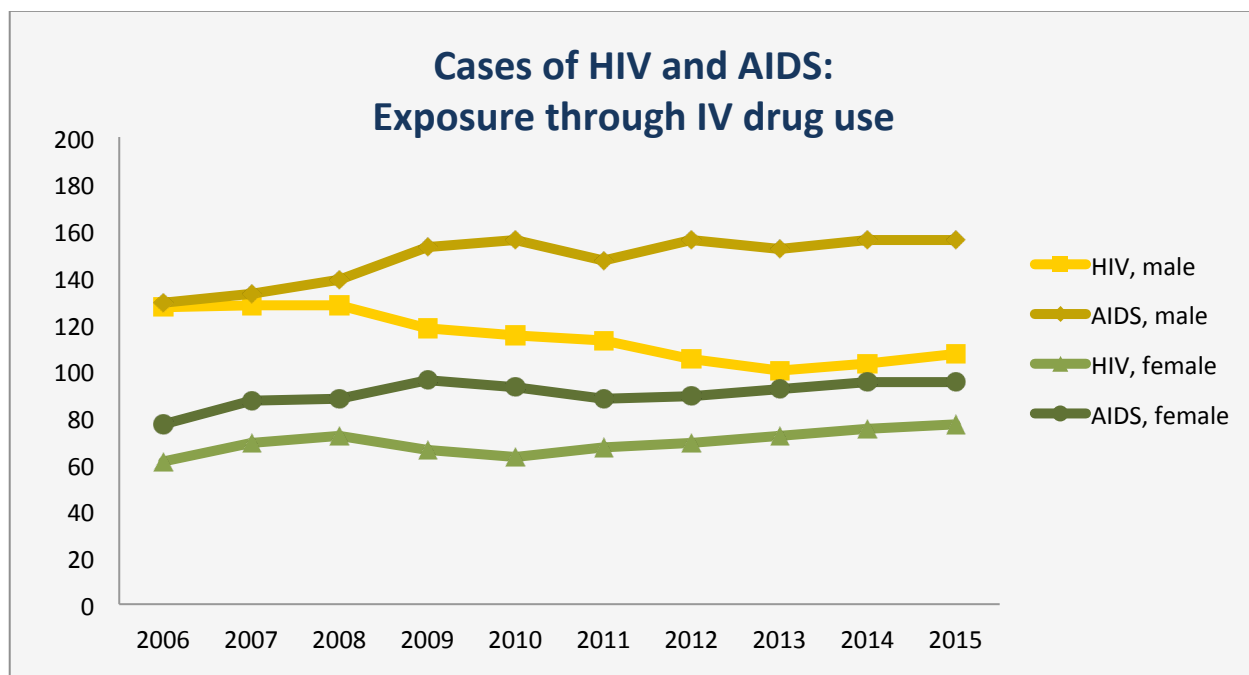
HIV/AIDS Surveillance Reports, Minnesota Department of Health

Section Summary

- More Minnesota males than females are living with HIV or AIDS contracted via intravenous drug use.
- The number of males with HIV contracted via intravenous drug use has gradually declined over the years, while the number of females has increased.

Illicit Drugs: Consequences

Data Source: MDH HIV/AIDS Surveillance Reports



Number of Cases of HIV and AIDS: Mode of Exposure Intravenous Drug Use (IDU), MDH

| | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Male | | | | | | | | | | |
| HIV | 127 | 128 | 128 | 118 | 115 | 113 | 105 | 100 | 103 | 107 |
| AIDS | 129 | 133 | 139 | 153 | 156 | 147 | 156 | 152 | 156 | 156 |
| Total | 256 | 261 | 267 | 271 | 271 | 260 | 261 | 252 | 259 | 263 |
| Female | | | | | | | | | | |
| HIV | 61 | 69 | 72 | 66 | 63 | 67 | 69 | 72 | 75 | 77 |
| AIDS | 77 | 87 | 88 | 96 | 93 | 88 | 89 | 92 | 95 | 95 |
| Total | 138 | 156 | 160 | 162 | 156 | 155 | 158 | 164 | 170 | 172 |
| Total | | | | | | | | | | |
| HIV | 188 | 197 | 200 | 184 | 178 | 180 | 174 | 172 | 178 | 184 |
| AIDS | 206 | 220 | 227 | 249 | 249 | 235 | 245 | 244 | 251 | 251 |
| Total | 394 | 417 | 427 | 433 | 427 | 415 | 419 | 416 | 429 | 435 |

Drug Abuse Violations

About the Indicator

These data include all arrests for the violation of state and local ordinances, specifically those relating to the unlawful possession, sale, use, growing, manufacturing, and making of narcotic drugs.

Data Source(s)

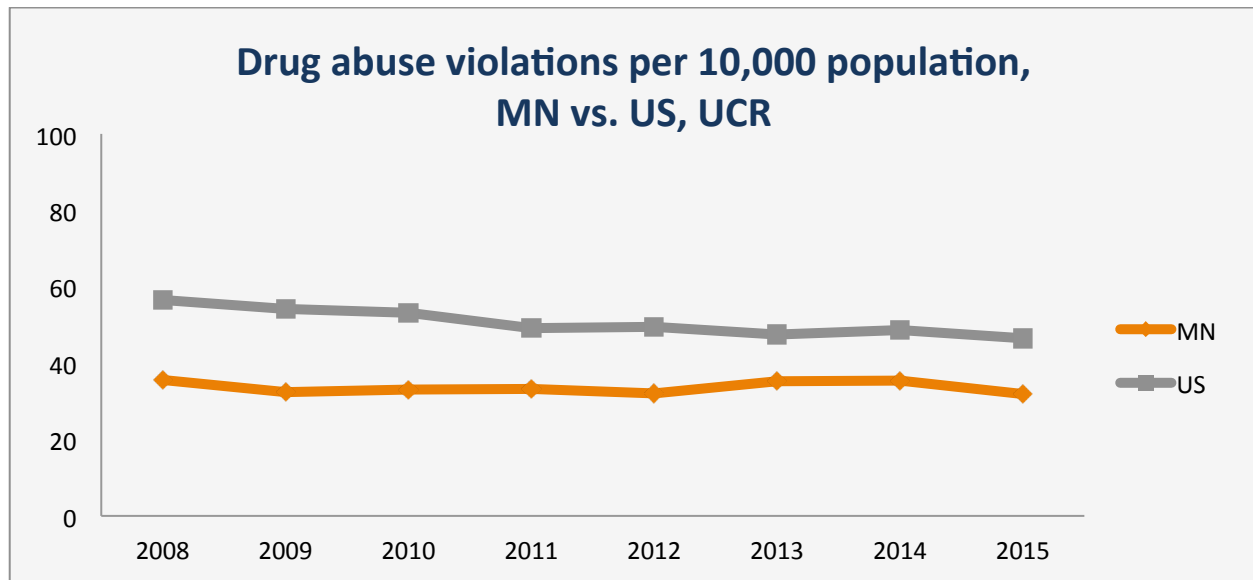
Uniform Crime Reports (UCR)

Section Summary

- The rate of narcotics arrests in Minnesota has been consistently lower than the national rate.
- From 2011 to 2015, approximately 13-17% of Minnesotans arrested for narcotics violations have been under the age of 18, and the proportion of juvenile arrests has decreased.

Illicit Drugs: Consequences

Data Source: UCR



Drug Abuse Violations per 10,000 Population, UCR

| Minnesota | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Narcotics arrests | 18,196 | 17,040 | 17,572 | 17,727 | 15,087 | 19,056 | 19,203 | 17,478 |
| Rate per 10,000 population | 35.6 | 32.4 | 33.1 | 33.2 | 32.1 | 35.2 | 35.4 | 31.9 |
| United States | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Narcotics arrests | 1,304,098 | 1,305,191 | 1,638,846 | 1,531,251 | 1,552,432 | 1,501,043 | 1,561,231 | 1,488,707 |
| Rate per 10,000 population | 56.5 | 54.1 | 53.1 | 49.1 | 49.5 | 47.5 | 48.6 | 46.5 |
| MN:US rate ratio | 2008 | 2008 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Narcotics arrests | 0.63 | 0.60 | 0.62 | 0.68 | 0.65 | 0.74 | 0.73 | 0.69 |

NOTE: St. Paul Police Department does not submit Part II arrest data to the BCA. Includes only arrests where the most serious offense was the Driving Under the Influence offense

Minnesota Drug Abuse Violations, UCR

| | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | |
|------|------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| | | N (#) | % | N (#) | % | N (#) | % | N (#) | % | N (#) | % |
| Age | Juvenile | 3,146 | 15.1% | 2,901 | 15.6% | 2,718 | 14.2% | 2,547 | 13.3% | 1,803 | 10.3% |
| | Adult | 17,729 | 84.9% | 15,730 | 84.4% | 16,472 | 85.8% | 16,656 | 86.7% | 15,675 | 89.7% |
| Race | White | 12,981 | 73.0% | 13,564 | 73.0% | 14,057 | 73.0% | 14,047 | 73.2% | 12,286 | 70.2% |
| | African American | 3,886 | 22.0% | 4,085 | 22.0% | 4,009 | 21.0% | 4,007 | 20.9% | 1,717 | 9.8% |
| | Indian/ Alaskan | 446 | 3.0% | 498 | 3.0% | 588 | 3.0% | 584 | 3.0% | 648 | 3.7% |
| | Asian | 416 | 2.0% | 484 | 2.0% | 536 | 3.0% | 565 | 2.9% | 501 | 2.9% |

Persons in Prison for Drug Offenses

About the Indicator

Legal penalties for illicit drugs range from prison time to probation sentences.

It is important to recognize that these data capture the *governing offense* for which a person was convicted. Because persons are counted based on a conviction for the most serious offense, it is likely that these data alone underestimate the role of illicit drugs in all convictions and sentences.

In Minnesota, there are 8 prisons for adults (7 for males and 1 for females). In addition, two other facilities house small numbers of adults. MCF-Togo houses the Female Challenge Incarceration Program; MCF-Red Wing houses a small male population.

According to the Minnesota Department of Corrections, 90% of Minnesota inmates have been diagnosed as chemically abusive or dependent. MDC has instituted chemical dependency programs that have been shown to reduce recidivism by 23%. In an average year, 2,900 offenders are assessed as needing treatment, 1,200 enter a long-term program, and 64% of these successfully complete treatment.

In 2016, 83.7% of incarcerated drug offenders were male.

Data Source(s)

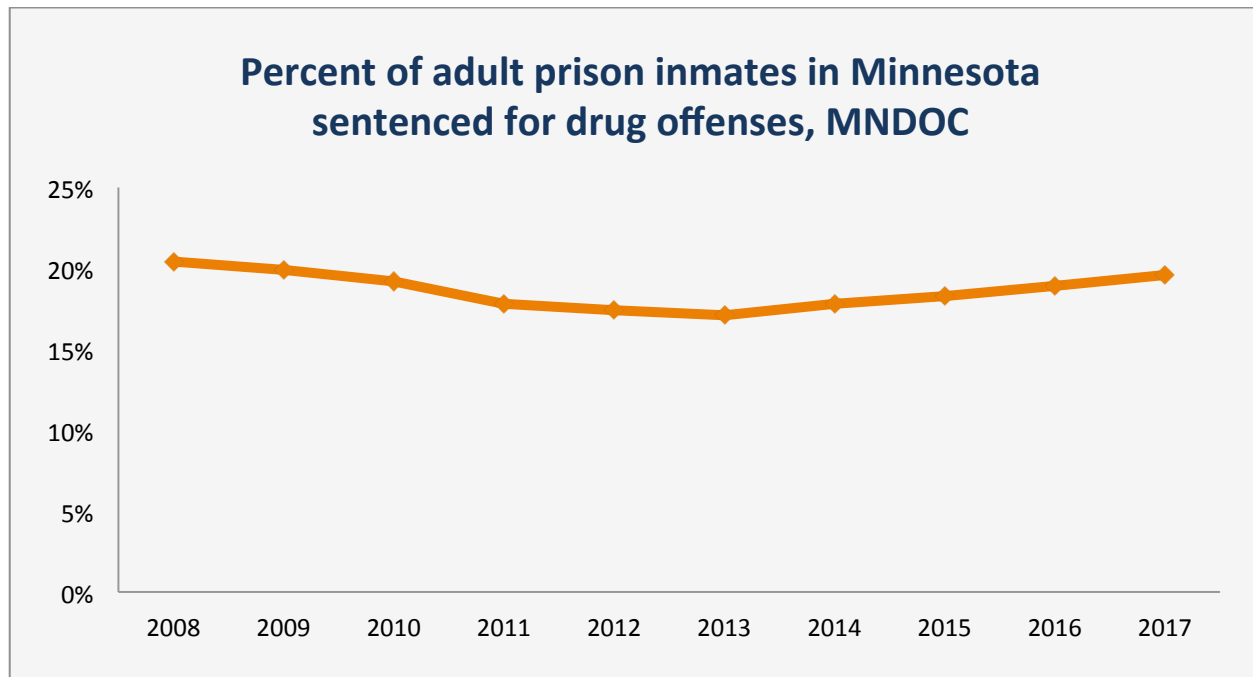
Minnesota Department of Corrections

Section Summary

- The percent of adult prison inmates in Minnesota sentenced for drug offenses has remained relatively stable—at, or just under 20%—while the overall prison population has increased slightly.

Illicit Drugs: Consequences

Data Source: Inmate Profile



Prison Inmates in Minnesota Sentenced for Drug Offenses, MNDOC

| Minnesota | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Number of inmates | 1,893 | 1,832 | 1,844 | 1,676 | 1,627 | 1,616 | 1,737 | 1,822 | 1,910 | 1,936 |
| Percent of all inmates | 20.4% | 19.9% | 19.2% | 17.8% | 17.4% | 17.1% | 17.8% | 18.3% | 18.9% | 19.6% |

Negative Consequences from Smoking Marijuana

About the Indicator

College students from 17 colleges and universities in Minnesota were asked about various possible negative consequences they've experienced in the past 12 months, after using marijuana. Responses were counted if the respondents indicated experiencing the consequence at least once in the past year.

Response rates for each consequence are reported for the student body as a whole, not only for those who have reported marijuana use.

Data Source(s)

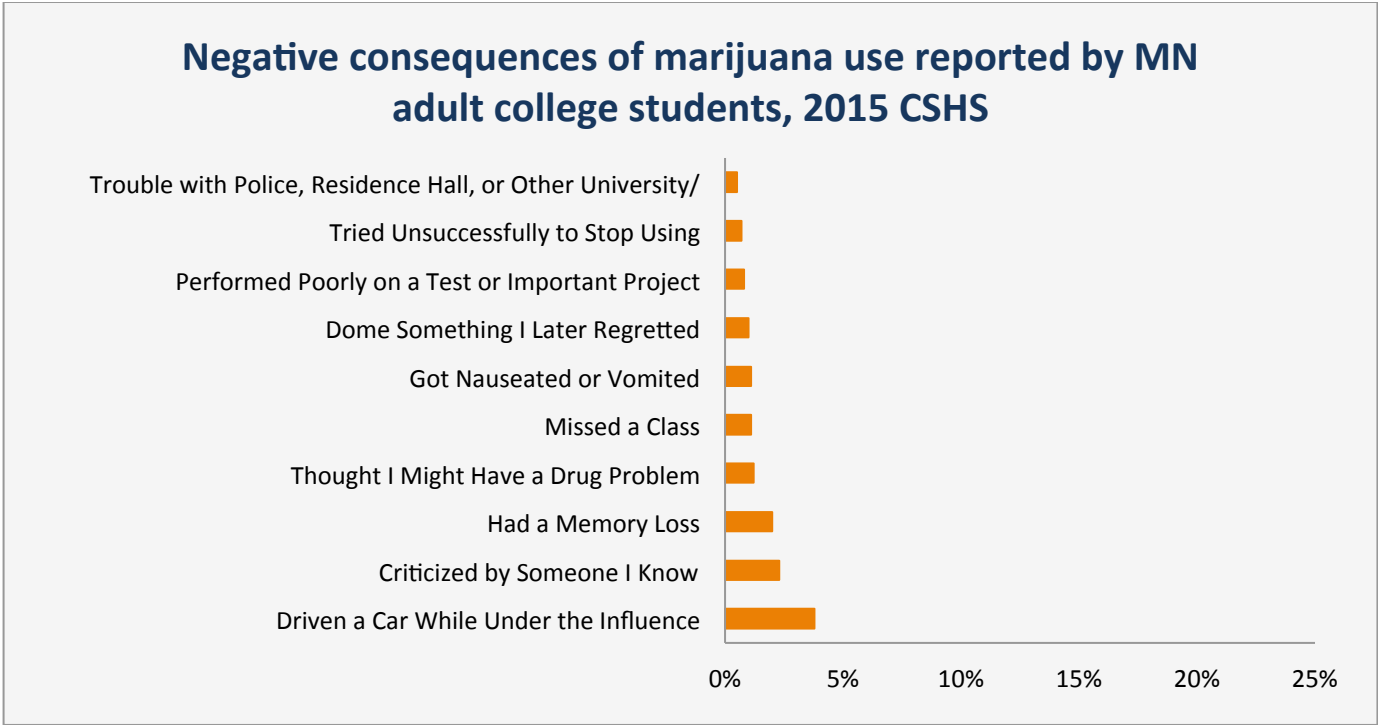
Minnesota College Student Health Survey (CSHS)

Section Summary

- The most commonly reported negative consequence was that the student had driven a vehicle while under the influence of marijuana

Illicit Drugs: Consequences

Data Source: College Student Health Survey



Illicit Drugs in Minnesota: Intervening Variables

Perceptions of Harm and Disapproval

About the Indicator

Beginning in 2007, students were asked how much they thought people risked harming themselves physically or in other ways if they smoke marijuana once or twice per week. The statistics presented here show the number and percent of students responding with either “great risk” or “moderate risk” of harm. The other two selection options on the survey were “slight risk” and “no risk.”

Data Source(s)

Adults National Survey on Drug Use and Health (NSDUH)

Youth Minnesota Student Survey (MSS)

Section Summary

Adults

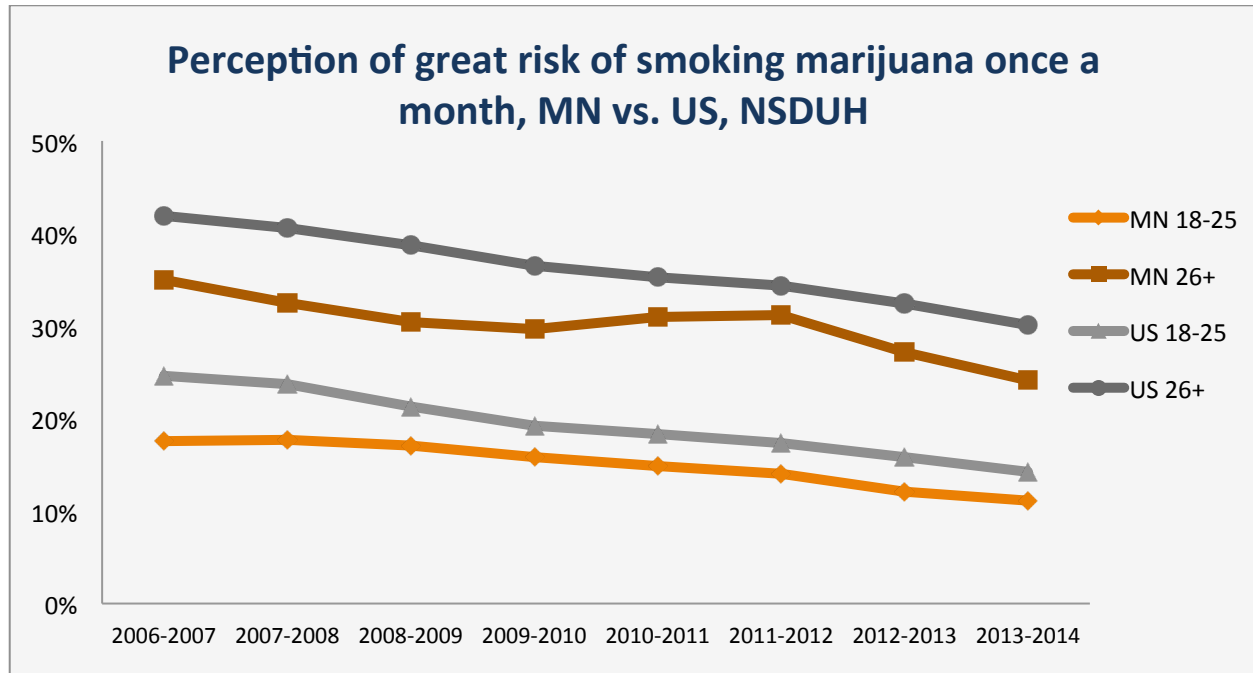
- Perception of harm from smoking marijuana is consistently lower in Minnesota than the national average.

Youth

- Female students were more likely than male to report that they believed people risked harming themselves by smoking marijuana once or twice per week.
- Perception of marijuana harm decreased with grade level.

Illicit Drugs: Intervening Variables

Data Source: NSDUH

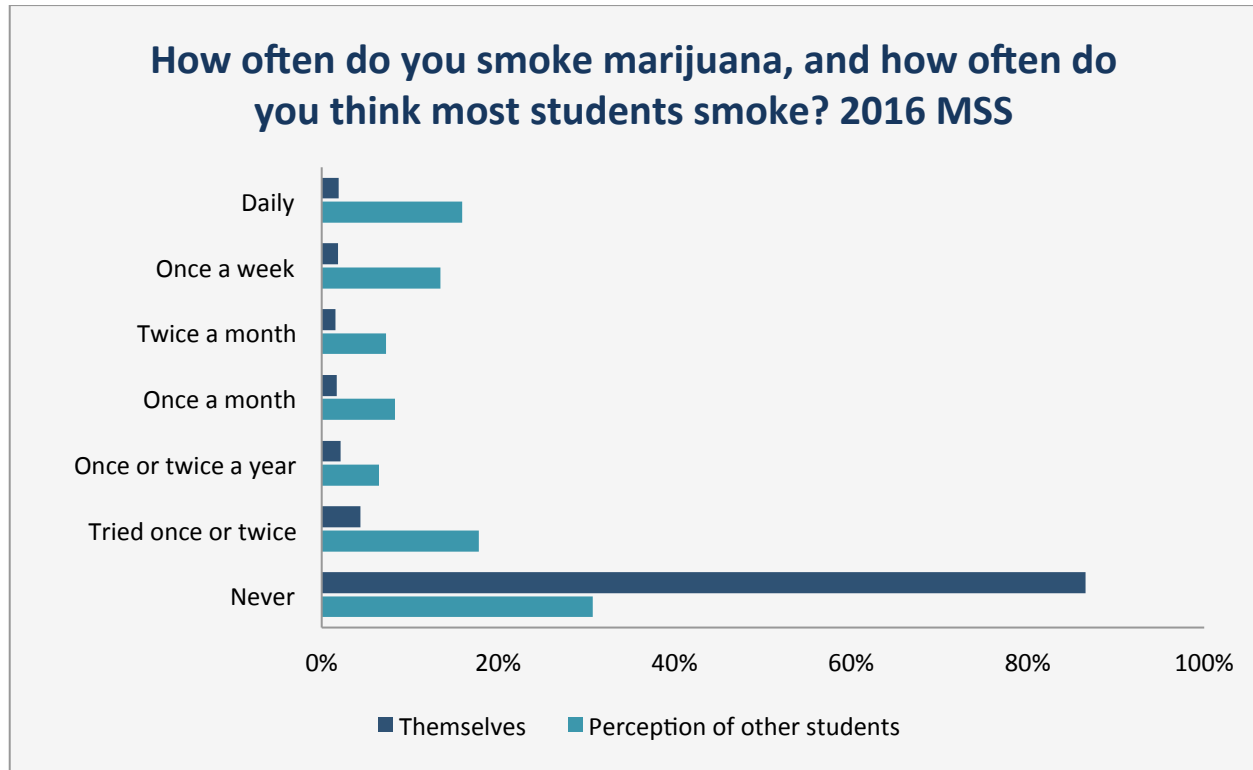


Adults: Perception of Great Risk of Smoking Marijuana Once a Month, NSDUH

| Minnesota | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Perceive great risk 12+ | 32.6% | 30.5% | 28.5% | 27.7% | 28.7% | 28.6% | 25.0% | 22.3% |
| Ages 12 thru 17 | 34.0% | 32.1% | 28.6% | 28.7% | 29.1% | 27.1% | 24.6% | 22.5% |
| Ages 18 thru 25 | 17.6% | 17.7% | 17.1% | 15.8% | 14.8% | 14.1% | 12.1% | 11.1% |
| Ages 26 and Over | 35.0% | 32.5% | 30.4% | 29.7% | 31.0% | 31.2% | 27.2% | 24.1% |
| United States | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
| Perceive great risk 12+ | 38.9% | 37.7% | 35.8% | 33.6% | 32.3% | 31.4% | 29.5% | 27.4% |
| Ages 12 thru 17 | 34.5% | 33.9% | 31.8% | 29.9% | 28.6% | 27.0% | 25.3% | 23.5% |
| Ages 18 thru 25 | 24.6% | 23.7% | 21.3% | 19.2% | 18.3% | 17.4% | 15.8% | 14.2% |
| Ages 26 and Over | 41.9% | 40.6% | 38.8% | 36.5% | 35.2% | 34.4% | 32.4% | 30.1% |
| MN:US rate ratio | 2006-2007 | 2007-2008 | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 |
| Perceive great risk 12+ | 0.84 | 0.81 | 0.80 | 0.82 | 0.89 | 0.91 | 0.85 | 0.81 |

NOTE: This indicator was not included on the survey after 2013-2014

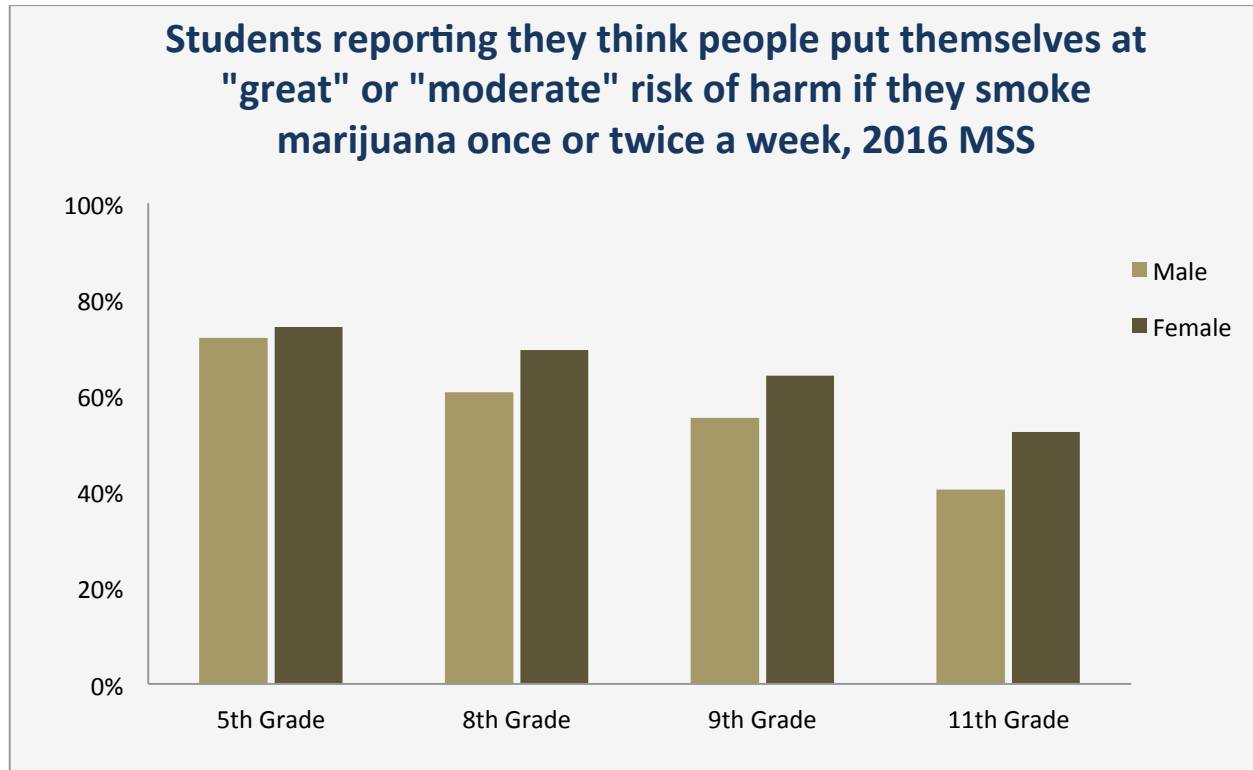
Data Source: MSS



Minnesota Students Reporting Smoking Marijuana, and their Perceptions of Other Students' Frequency of Marijuana Use, 8th, 9th, and 11th Grade Students, 2016 MSS

| | How often do you think MOST STUDENTS smoke marijuana? | | How often do YOU smoke marijuana? | |
|----------------------|---|-------|-----------------------------------|-------|
| | N (#) | % | N (#) | % |
| Never | 35,078 | 30.7% | 99,401 | 86.5% |
| Tried once or twice | 20,366 | 17.8% | 5,017 | 4.4% |
| Once or twice a year | 7,428 | 6.5% | 2,429 | 2.1% |
| Once a month | 9,459 | 8.3% | 1,956 | 1.7% |
| Twice a month | 8,320 | 7.3% | 1,781 | 1.6% |
| Once a week | 15,361 | 13.5% | 2,092 | 1.8% |
| Daily | 18,154 | 15.9% | 2,193 | 1.9% |

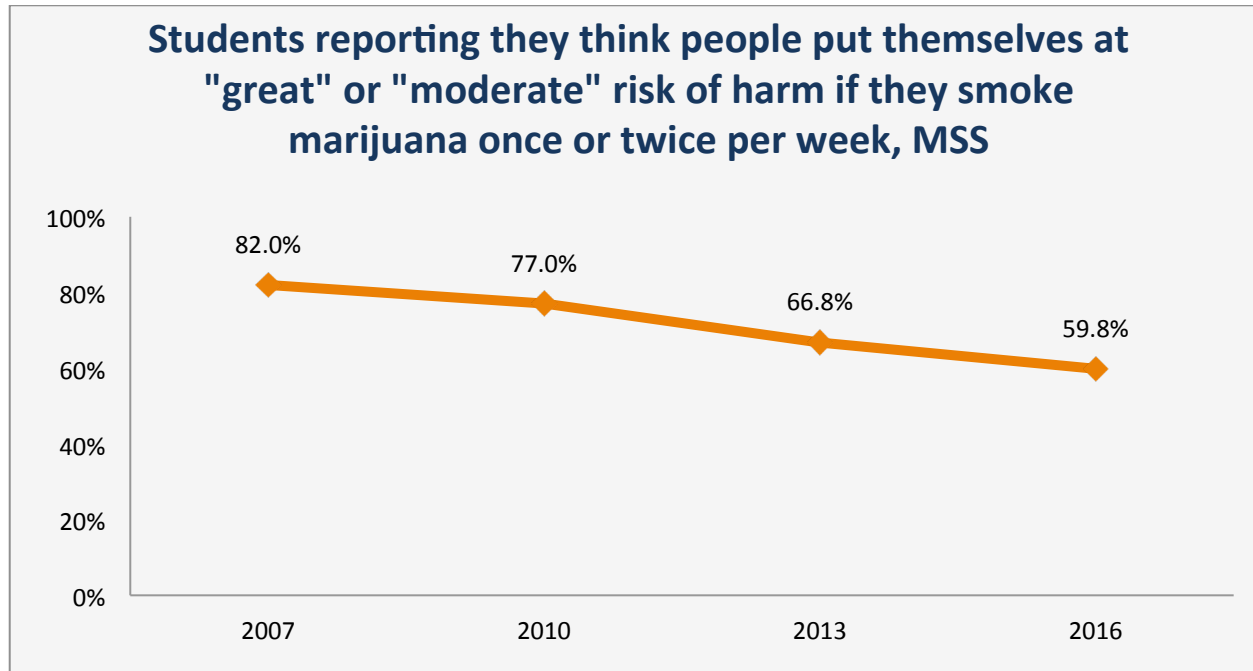
Data Source: MSS



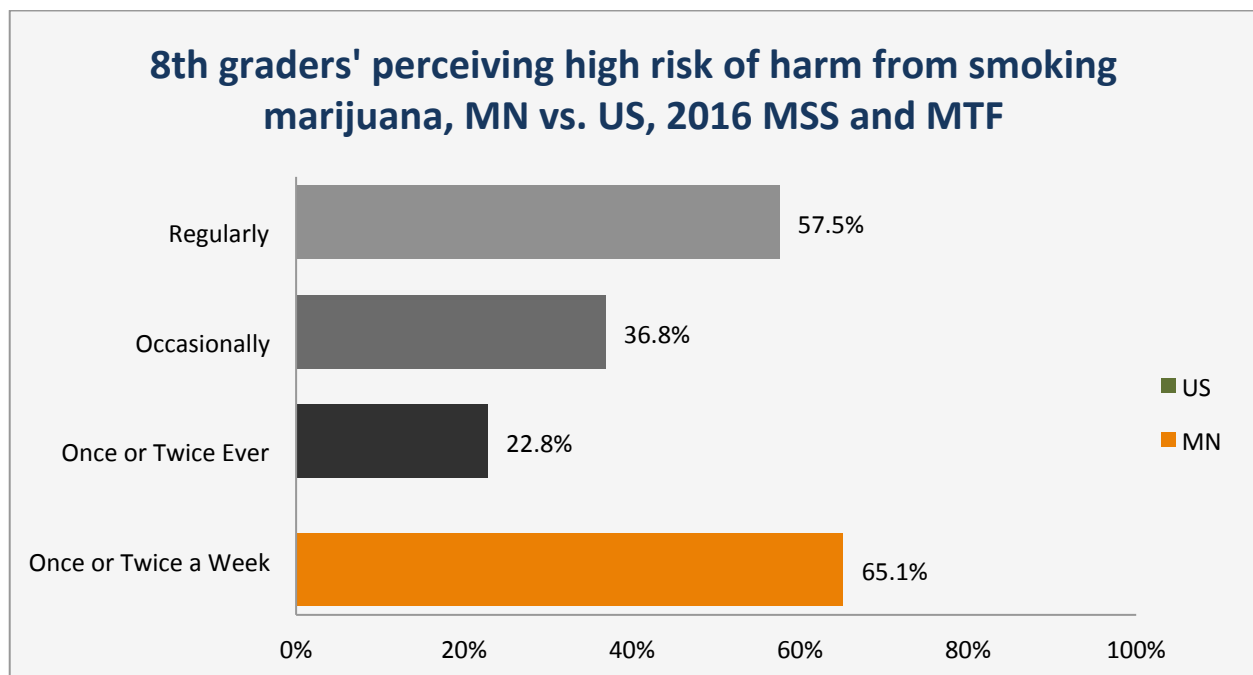
Students Reporting They Think People Put Themselves at "Great" or "Moderate" Risk of Harming Themselves Physically or in Other Ways if They Smoke Marijuana Once or Twice Per Week, 2016 MSS

| | | Male | | Female | | Total | |
|--------------|------------------|--------|-------|--------|-------|--------|-------|
| | | N (#) | % | N (#) | % | N (#) | % |
| Grade | 5 th | 13,486 | 72.0% | 13,607 | 74.2% | 27,093 | 73.1% |
| | 8 th | 11,962 | 60.7% | 13,880 | 69.4% | 25,842 | 65.1% |
| | 9 th | 10,570 | 55.4% | 12,573 | 64.1% | 23,143 | 59.8% |
| | 11 th | 6,354 | 40.5% | 8,435 | 52.4% | 14,789 | 46.6% |
| | Total | 42,372 | 57.9% | 48,495 | 65.5% | 90,867 | 61.7% |

Data Source: MSS and MTF

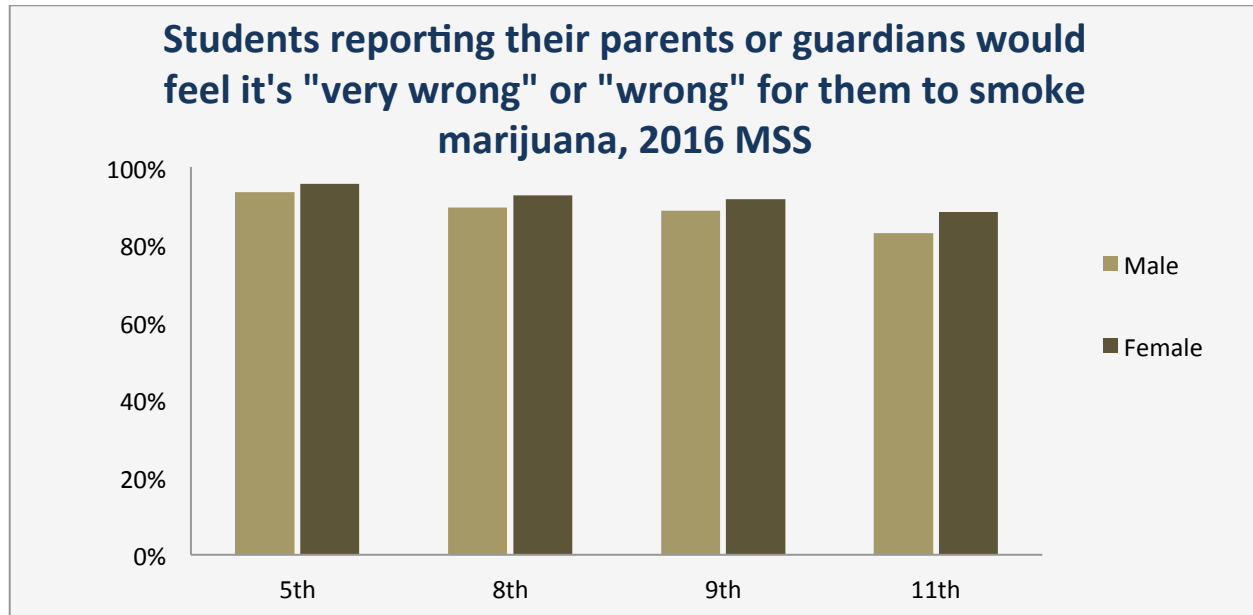


Minnesota students have a relatively high perception of risk of harm from smoking marijuana, but the perception of risk is declining.

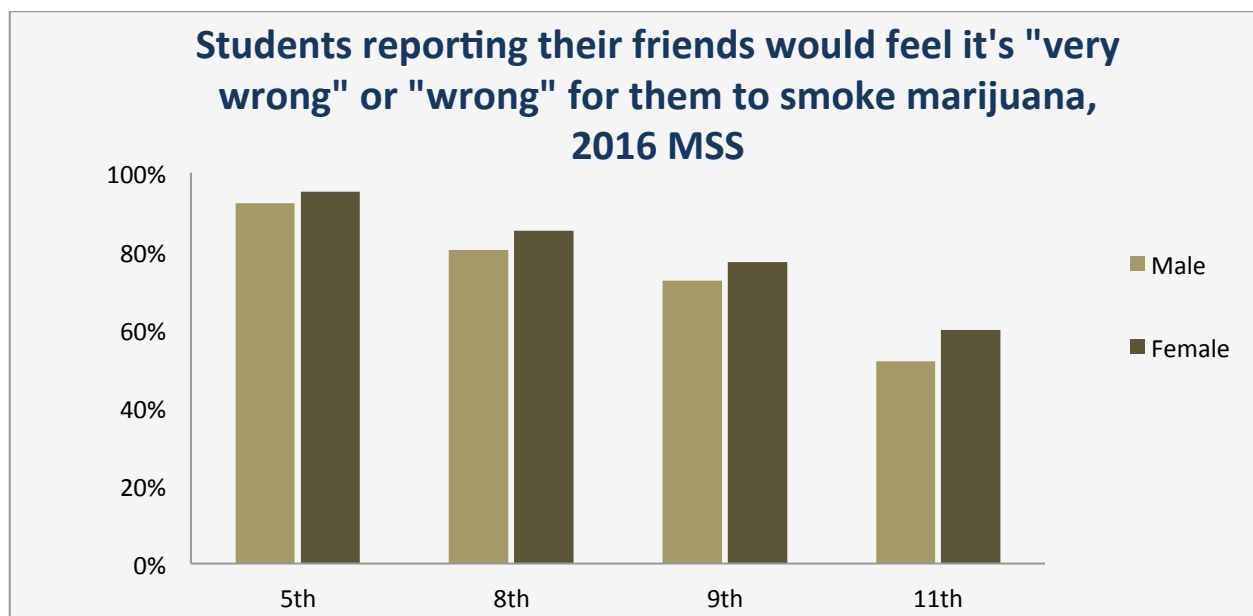


NOTE: The MTF survey questions asking about perception of harm used different frequencies of use than the MSS survey.

Data Source: MSS



Students' perception of disapproval has declined with both the age of students, and over time.



Illicit Drugs: Intervening Variables

Data Source: MSS

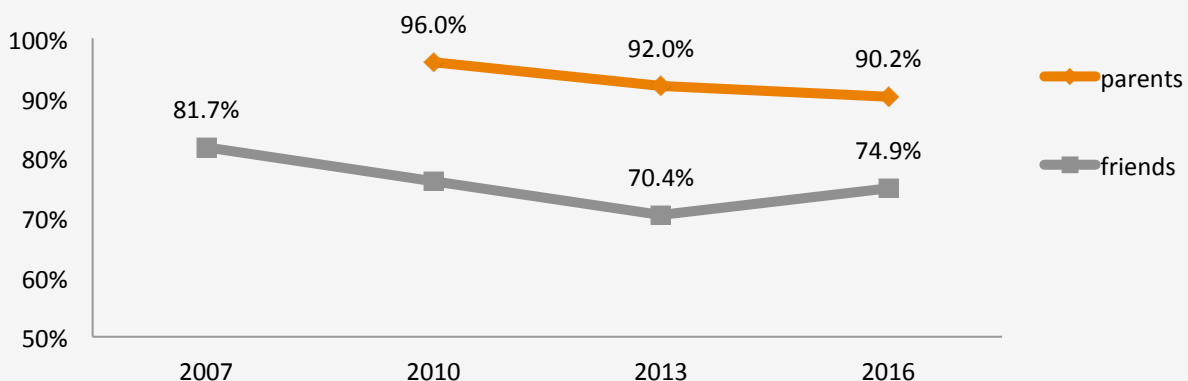
Students Reporting They Think Their Parents Would Feel it's "Very Wrong" or "wrong" for Them to Smoke Marijuana, 2016 MSS

| | | Male | | Female | | Total | |
|-------|------------------|--------|-------|--------|-------|--------|-------|
| | | N (#) | % | N (#) | % | N (#) | % |
| Grade | 5 th | 17,731 | 93.5% | 17,959 | 95.7% | 35,690 | 94.6% |
| | 8 th | 17,683 | 89.6% | 18,639 | 92.7% | 36,322 | 91.2% |
| | 9 th | 16,938 | 88.7% | 17,985 | 91.7% | 34,923 | 90.2% |
| | 11 th | 13,022 | 82.9% | 14,210 | 88.4% | 27,232 | 85.7% |

Students Reporting They Think Their Friends Would Feel it's "Very Wrong" or "Wrong" for Them to Smoke Marijuana, 2016 MSS

| | | Male | | Female | | Total | |
|-------|------------------|--------|-------|--------|-------|--------|-------|
| | | N (#) | % | N (#) | % | N (#) | % |
| Grade | 5 th | 17,355 | 92.2% | 17,765 | 95.2% | 35,120 | 93.7% |
| | 8 th | 15,795 | 80.3% | 17,055 | 85.1% | 32,850 | 82.7% |
| | 9 th | 13,750 | 72.4% | 15,077 | 77.2% | 28,827 | 74.9% |
| | 11 th | 8,102 | 51.8% | 9,583 | 59.7% | 17,685 | 55.8% |

Percent of students reporting they believe parents/guardians or friends would feel it was wrong if they smoked marijuana: 9th grade trend, MSS



2017



Substance Abuse in Minnesota: A State Epidemiological Profile

Section 6. Mental Health and Shared Factors

Prepared by: EpiMachine, LLC

**for the Minnesota Department of Human Services, Alcohol
and Drug Abuse Division**

Substance Abuse in Minnesota

Section 6. Mental Health and Shared Factors

The 2017 Minnesota State EpiProfile is divided into seven parts:

- 1. Introduction (which includes a profile overview, population snapshot, and acknowledgements)**
- 2. Executive Summary**
- 3. Alcohol: Use, Consequences, and Intervening Variables**
- 4. Tobacco and Nicotine: Use, Consequences, and Intervening Variables**
- 5. Drugs: Use, Consequences, and Intervening Variables**
- 6. Mental Health and Shared Factors**
- 7. Appendix (which includes technical notes and data sources)**

Substance Abuse in Minnesota: Mental Health and Shared Factors

Suicide and Mental Illness

About the Indicator

Suicide is closely associated with alcohol and drug abuse. The International Classification of Diseases (ICD-10) measures all suicides, many of which are attributable to substance abuse.

The Centers for Disease Control and Prevention (CDC) provides a measure of Alcohol-Attributable Fractions (AAFs). AAFs are estimates based on direct observations about the relationship between alcohol and a given health outcome. The AAF for suicide for both males and females is 23%.

In order to provide comprehensive data on suicides, both measures are presented.

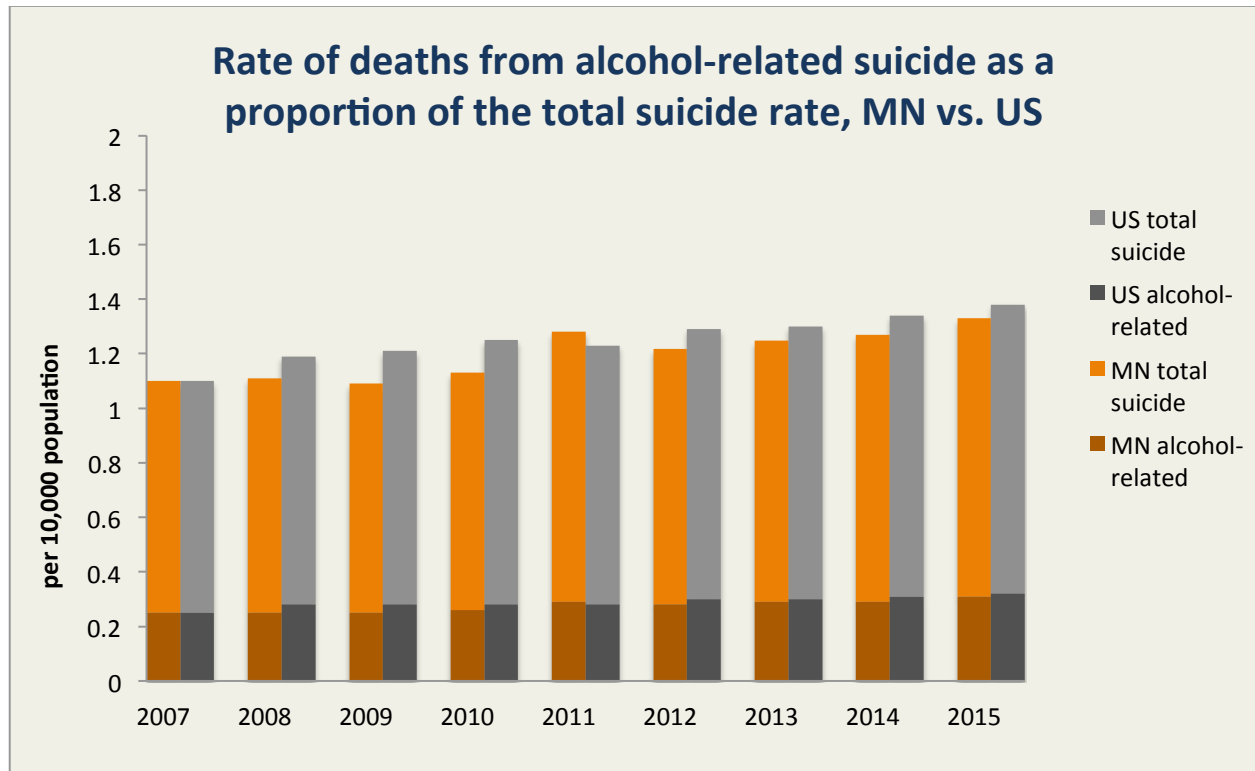
Data Source(s)

Minnesota Center for Health Statistics, Minnesota Department of Health (MDH), CDC Wonder Compressed Mortality Data, the Alcohol-Related Disease Impact (ARDI), and National Survey on Drug Use and Health (NSDUH)

Section Summary

- Minnesota's suicide rate is very close to the national average.
- Males are significantly more likely than females to commit suicide.

Data Source: Minnesota Department of Health, CDC Wonder, ARDI

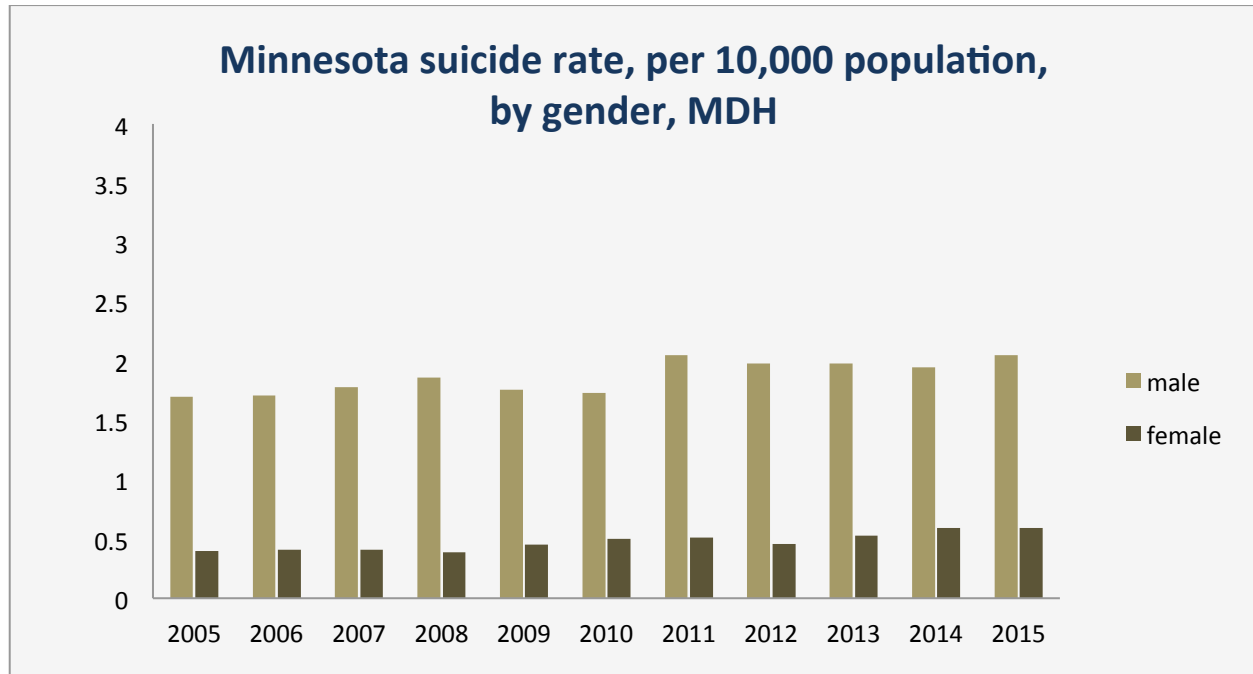


Deaths from Alcohol-Related Suicide per 10,000 Population, CDC Wonder

| Minnesota | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Deaths from Alcohol-related* Suicide | 127 | 132 | 137 | 134 | 139 | 157 | 151 | 155 | 157 | 168 |
| Rate per 10,000 population | 0.24 | 0.25 | 0.25 | 0.25 | 0.26 | 0.29 | 0.28 | 0.29 | 0.29 | 0.31 |
| United States | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Deaths from Alcohol-related* Suicide | 7,659 | 7,942 | 8,273 | 8,473 | 8,811 | 8,806 | 9,322 | 9,444 | 9,838 | 10,164 |
| Rate per 10,000 population | 0.26 | 0.25 | 0.28 | 0.28 | 0.28 | 0.28 | 0.3 | 0.3 | 0.31 | 0.32 |
| MN:US rate ratio | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| Deaths from Alcohol-related* Suicide | 0.92 | 1 | 0.89 | 0.89 | 0.93 | 1.04 | 0.93 | 0.97 | 0.95 | 0.97 |

* = Alcohol-related suicide data are calculated using the AAF for suicide, 23%

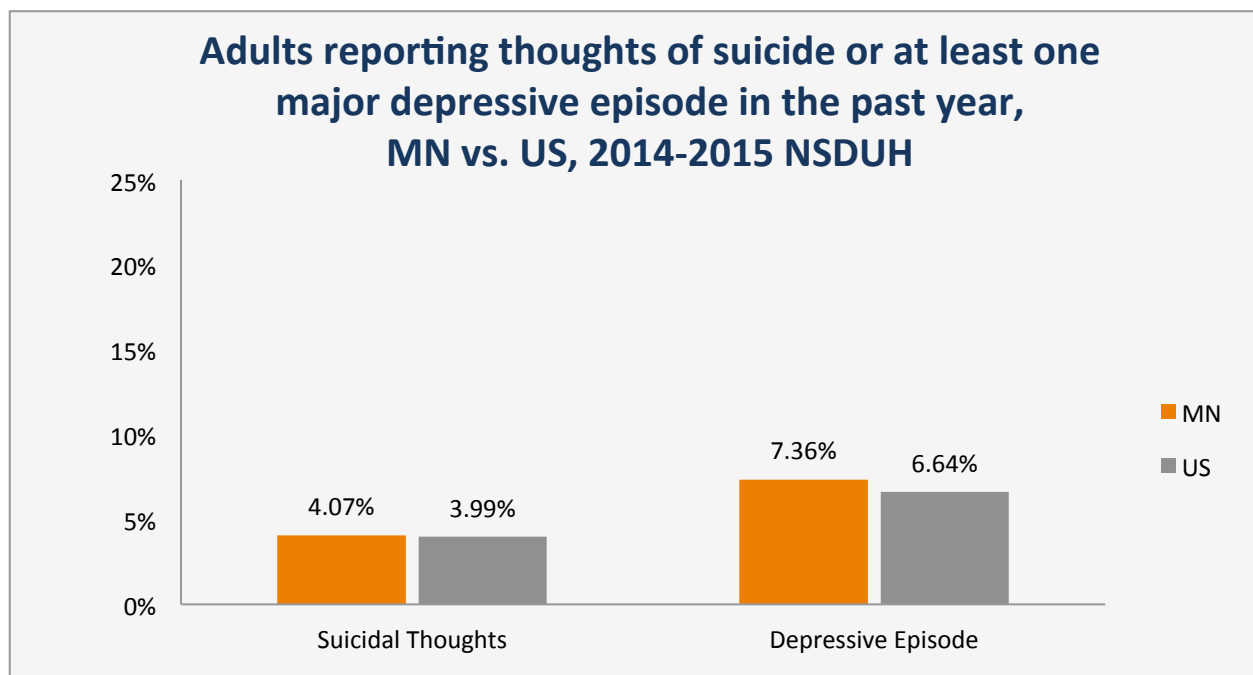
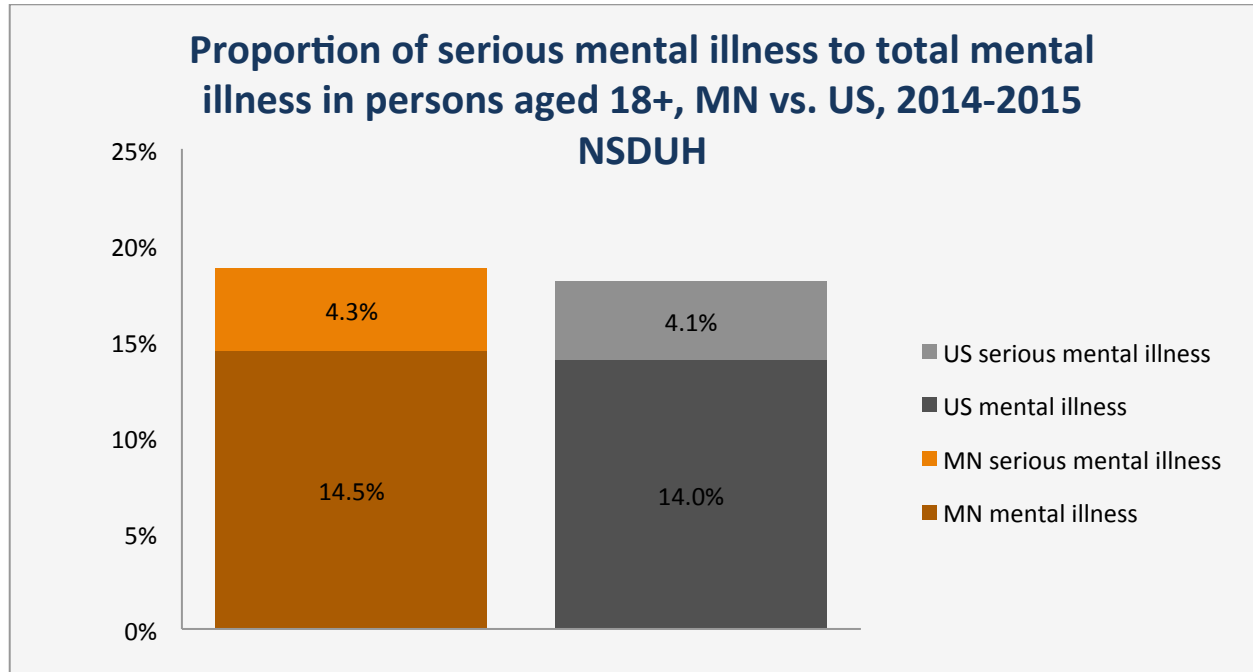
Data Source: Minnesota Department of Health



Total Minnesota Suicide Deaths by Gender, Number, and Age-Adjusted Rate per 10,000 Population, MDH

| | | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--------|--------|------|------|------|------|------|------|------|------|------|------|------|
| Male | Number | 440 | 441 | 462 | 490 | 468 | 464 | 544 | 530 | 532 | 522 | 563 |
| | Rate | 1.7 | 1.71 | 1.78 | 1.88 | 1.79 | 1.76 | 2.05 | 1.98 | 1.98 | 1.95 | 2.05 |
| Female | Number | 104 | 109 | 109 | 105 | 115 | 139 | 137 | 125 | 144 | 161 | 163 |
| | Rate | 0.4 | 0.41 | 0.41 | 0.4 | 0.43 | 0.52 | 0.51 | 0.46 | 0.53 | 0.59 | 0.59 |

Data Source: NSDUH



Mental Health and Shared Factors

Data Source: NSDUH

Prevalence of Mental Illness, Depression, and Suicidal Thoughts, Minnesota and United States, NSDUH

| Serious Mental Illness in the Past Year | | | | |
|---|-----------|-----------|-----------|-----------|
| MN | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 18+ | 3.9% | 4.2% | 4.5% | 4.3% |
| 18-25 | 4.4% | 4.3% | 5.0% | 5.5% |
| 26+ | 3.8% | 4.2% | 4.4% | 4.2% |
| US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 18+ | 4.0% | 4.1% | 4.2% | 4.1% |
| 18-25 | 4.0% | 4.2% | 4.5% | 4.9% |
| 26+ | 4.0% | 4.1% | 4.1% | 3.9% |
| MN:US | 2011-2012 | 2011-2012 | 2013-2014 | 2014-2015 |
| 12+ | 0.98 | 1.02 | 1.07 | 1.05 |

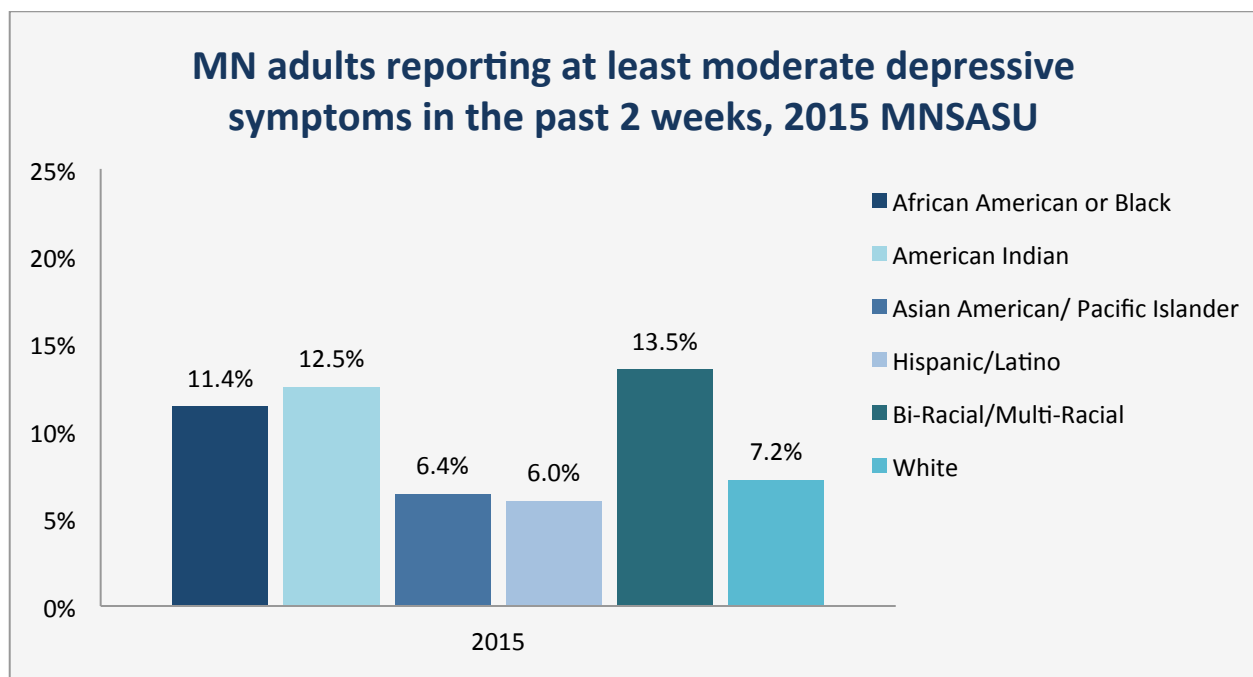
| Any Mental Illness in the Past Year | | | | |
|-------------------------------------|-----------|-----------|-----------|-----------|
| MN | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 18+ | 17.2% | 18.0% | 19.7% | 18.8% |
| 18-25 | 20.1% | 19.8% | 21.3% | 22.6% |
| 26+ | 16.7% | 17.7% | 19.4% | 18.2% |
| US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 18+ | 18.2% | 18.5% | 18.3% | 18.0% |
| 18-25 | 19.1% | 19.5% | 19.8% | 20.9% |
| 26+ | 18.0% | 18.4% | 18.1% | 17.5% |
| MN:US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 12+ | 0.95 | 0.97 | 1.08 | 1.04 |

| Had Serious Thoughts of Suicide in the Past Year | | | | |
|--|-----------|-----------|-----------|-----------|
| MN | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 18+ | 3.6% | 3.9% | 4.2% | 4.1% |
| 18-25 | 7.3% | 7.1% | 7.4% | 8.2% |
| 26+ | 3.0% | 3.4% | 3.7% | 3.4% |
| US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 18+ | 3.8% | 3.9% | 3.9% | 4.0% |
| 18-25 | 7.0% | 7.3% | 7.4% | 7.9% |
| 26+ | 3.2% | 3.3% | 3.3% | 3.3% |
| MN:US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 12+ | 0.95 | 1.00 | 1.08 | 1.03 |

| At Least 1 Major Depressive Episode, Past Year | | | | |
|--|-----------|-----------|-----------|-----------|
| MN | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 18+ | 6.1% | 6.6% | 7.3% | 7.4% |
| 12-17 | 8.3% | 8.2% | 11.0% | 12.6% |
| 18-25 | 8.8% | 8.8% | 10.1% | 9.8% |
| 26+ | 5.7% | 6.2% | 6.8% | 7.0% |
| US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 18+ | 6.7% | 6.8% | 6.6% | 6.6% |
| 12-17 | 8.7% | 9.9% | 11.0% | 11.9% |
| 18-25 | 8.6% | 8.8% | 9.0% | 9.8% |
| 26+ | 6.4% | 6.4% | 6.2% | 6.1% |
| MN:US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 |
| 12+ | 0.91 | 0.97 | 1.11 | 1.12 |

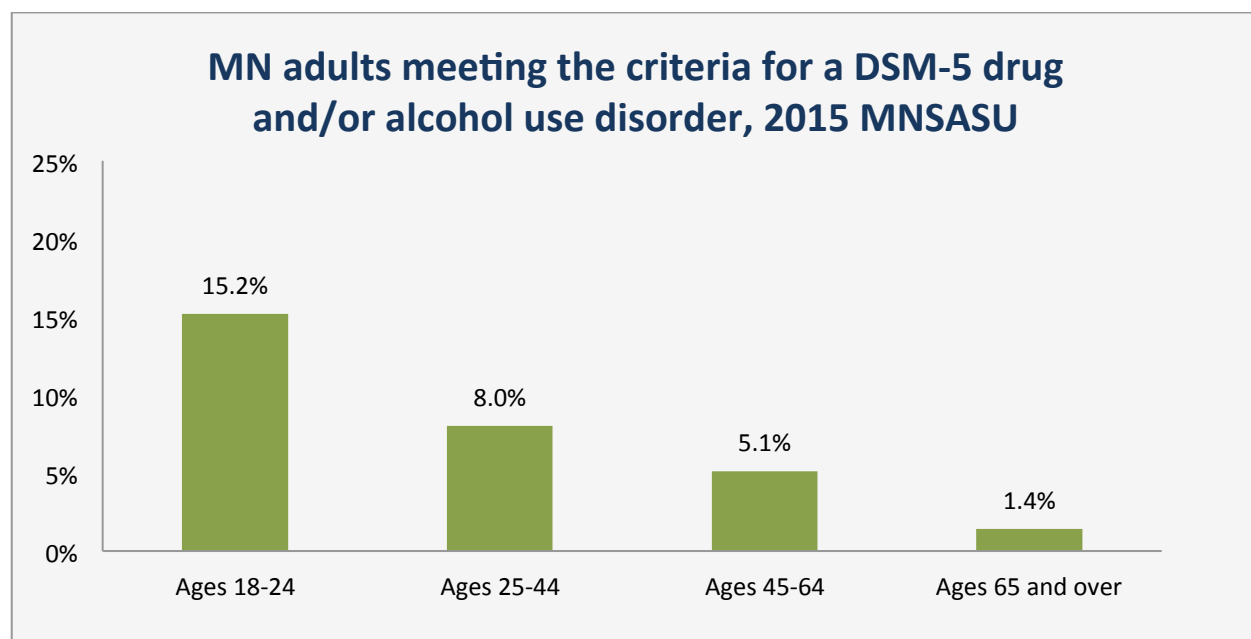
Data Source: MNSASU

| Adults reporting at least moderate depressive symptoms in the past 2 weeks, 2015 MNSASU | | | |
|--|----------------------------------|-------|-------|
| | | 2010 | 2015 |
| Age | Ages 18 thru 24 | 9.8% | 8.8% |
| | Ages 25 thru 44 | 8.2% | 7.3% |
| | Ages 45 thru 64 | 9.5% | 7.6% |
| | Ages 65 and over | 5.6% | 6.4% |
| Race/Ethnicity | African American or Black | 14.6% | 11.4% |
| | American Indian | 21.0% | 12.5% |
| | Asian American/ Pacific Islander | 5.7% | 6.4% |
| | Hispanic/Latino | 10.2% | 6.0% |
| | Bi-Racial/Multi-Racial | 25.0% | 13.5% |
| | White | 7.9% | 7.2% |
| Gender | Male | 6.9% | 7.1% |
| | Female | 9.9% | 7.6% |
| | Total | 8.4% | 7.4% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | N/A | 16.5% |
| | Heterosexual | N/A | 7.1% |

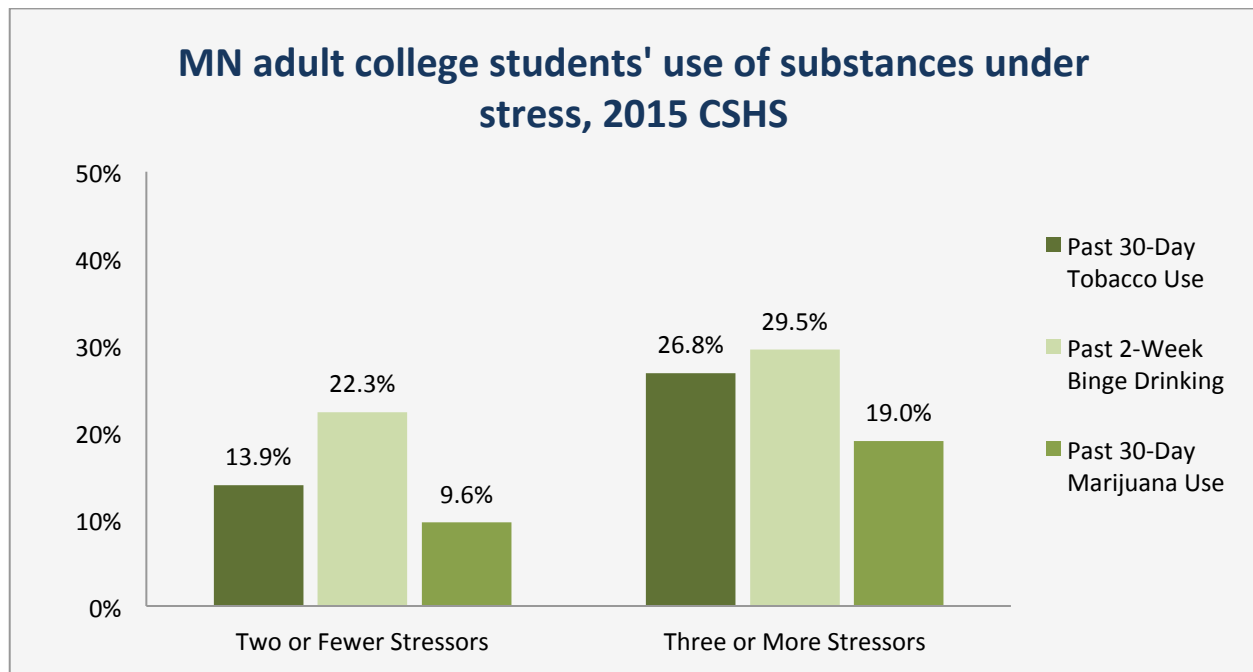
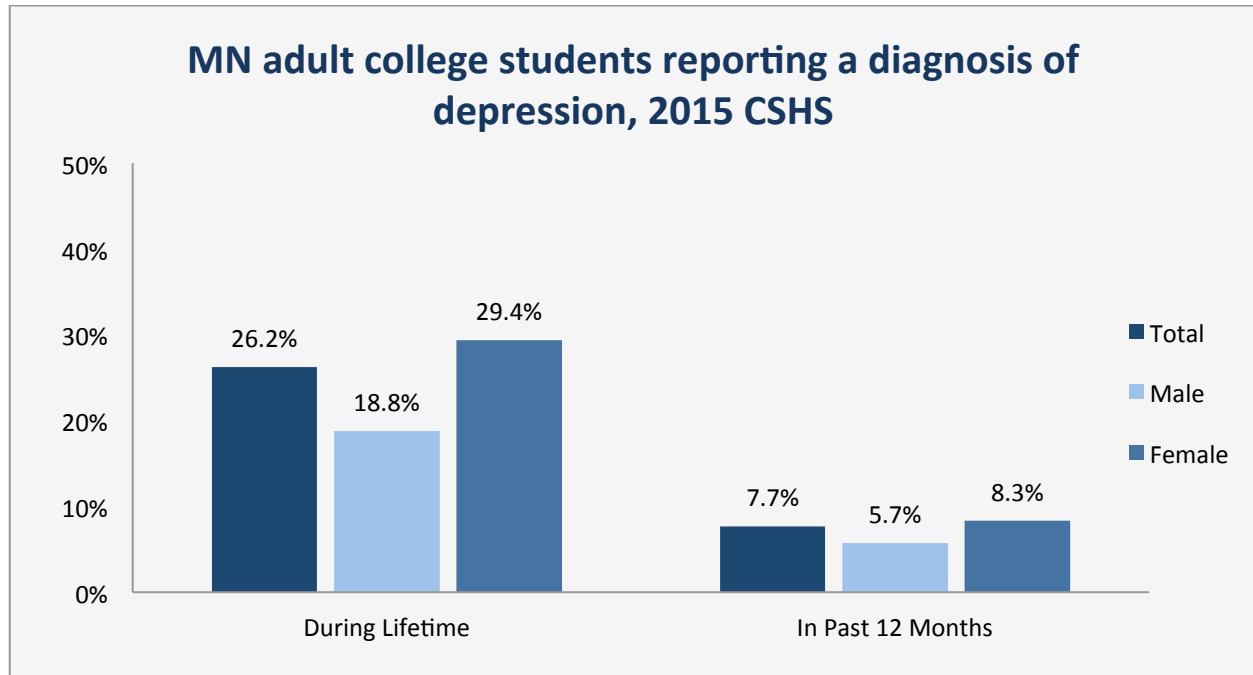


Data Source: MNSASU

| Adults meeting the criteria for a DSM5 drug and/or alcohol use disorder, 2015 MNSASU | | |
|--|----------------------------------|-------|
| | | 2015 |
| Age | Ages 18 thru 24 | 15.2% |
| | Ages 25 thru 44 | 8.0% |
| | Ages 45 thru 64 | 5.1% |
| | Ages 65 and over | 1.4% |
| Race/Ethnicity | African American or Black | 6.5% |
| | American Indian | 13.8% |
| | Asian American/ Pacific Islander | 6.3% |
| | Hispanic/Latino | 7.3% |
| | Bi-Racial/Multi-Racial | 9.5% |
| | White | 6.6% |
| Gender | Male | 8.6% |
| | Female | 4.8% |
| | Total | 6.7% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | 12.1% |
| | Heterosexual | 6.6% |



Data Source: CSHS



Youth: Mental Health, Substance Use, and Shared Risk and Protective Factors

About the Indicator

This section of the profile examines risk and protective factors that influence substance use and abuse behaviors.

Risk factors are characteristics at the biological, psychological, family, community, or cultural level that precede and are associated with a higher likelihood of problem outcomes; protective factors are characteristics associated with a lower likelihood of problem outcomes or that reduces the negative impact of a risk factors on problem outcomes.¹ Some risk factors are specifically associated with substance use, such as perceived risk of harm. On the other hand, some risk and protective factors are association with both substance use/abuse and with mental health. We also know from the research that substance use is a risk factor for mental health problems, and vice versa². Finally, many Minnesotans suffer from co-occurring substance use and mental health disorders.

While factors and behaviors are cross-linked across categories, data are organized and presented here in the following sections:

- Introduction to Adverse Childhood Experiences (ACEs)
- College Student Health Survey: Adult Students' ACE Scores
- Minnesota Student Survey: Youth ACE Scores
 - Alcohol Use
 - Mental Health
 - Family and Community
 - School

In 2013 and 2016, the MSS was administered to students in 5th, 8th, 9th, and 11th grades. Unless otherwise noted, data here are for students in 8th, 9th, and 11th grades.

For more information on the ACE questionnaire, please see:
www.health.state.mn.us/divs/cfh/program/ace/

Data Source(s)

College Student Health Survey (CSHS), Minnesota Student Survey (MSS)

Section Summary

- ACE scores are highly correlated with substance use and depression
- Protective factors for youth include feeling safe at school and in the community; being able to talk with parents about problems; and school engagement
- Risk factors for youth include being in an abusive relationship; experiencing bullying; and skipping class

1. National Research Council and Institute of Medicine. (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities* (O'Connell, M.E., Boat, T., & Warner, K. E., Eds.) Washington, D.C: National Academies Press.
2. Gilbertson, L. & Dillon, K. (2012). *Integration of mental health, substance use, and primary care: opportunities and challenges*. Wilder Research: Saint Paul, MN

Introduction: the Adverse Childhood Events Score

The Adverse Childhood Experiences (ACE) Study was a collaboration between the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente's Health Appraisal Clinic in San Diego. Members of the Kaiser Health Maintenance Organization provided detailed information about their childhood experiences of abuse, neglect, and family dysfunction. Study findings linked ACEs to leading causes of illness and death as well as poor quality life. The original ten ACEs used to calculate an "ACE Score" (score calculated by adding 1 point for each ACE experienced) included:

- Emotional abuse
- Physical abuse
- Sexual abuse
- Emotional neglect
- Physical neglect
- Mother treated violently
- Household substance abuse
- Household mental illness
- Parental separation or divorce
- Incarcerated household member

In 2008, the CDC developed a set of ACE questions for states to use in the Behavioral Risk Factors Surveillance System (BRFSS). The ACEs module was added to the 2011 Minnesota Behavioral Risk Factor Surveillance System survey for adults in order to examine the relationships between such exposures and subsequent behavior, mental, and physical health outcomes. The Minnesota questions did not include the two neglect items, but did include separate questions for household alcohol abuse and household drug abuse. In 2015, the College Student Health Survey (CSHS) included the same indicators included on the BRFSS. Find more information about them here: <http://www.health.state.mn.us/divs/cfh/program/ace/>

In 2013, some ACE questions were added to the Minnesota Student Survey and others were revised to better align with national surveys. Students' ACE scores, together with their responses to other questions in the MSS, provide insight into protective and risk factors associated with health, academic success, and substance use and abuse.

Note: Although ACEs can be used as a general measurement of household dysfunction, survey instruments can use a variety of different indicators; therefore, ACE scores should not be compared between surveys.

Data Source: CSHS

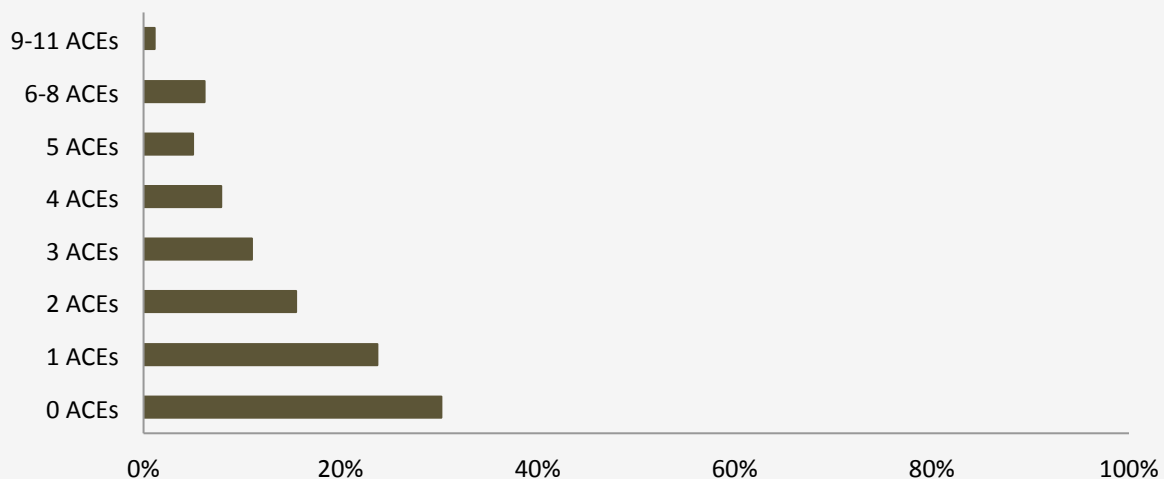
College Student Health Survey: The Adverse Childhood Events (ACE) Scale

The 11 ACE questions used in the College Student Health Survey ask about conditions that may have been experienced by students in childhood.

Students reported whether...

- ...they lived with anyone who was depressed, mentally ill, or suicidal
- ...they lived with anyone who was a problem drinker or an alcoholic
- ...they lived with anyone who used illegal street drugs or abused prescription medications
- ...they lived with anyone who served time or was sentenced to serve time in prison, jail, or other correctional facility
- ...their parents were divorced or separated
- ...their parents or adults in the home hit, beat, kicked, or physically hurt them in any way
- ...their parents or an adult ever swore at them, insulted them, or put them down
- ...anyone at least 5 years older than them, or an adult, ever touched them sexually
- ...anyone at least 5 years older than them, or an adult, tried to make the student touch them sexually
- ...anyone at least 5 years older than them, or an adult, ever forced them to have sex

Percent of MN adult college students with adverse childhood experiences (ACEs), 2015 CSHS



Data Source: MSS

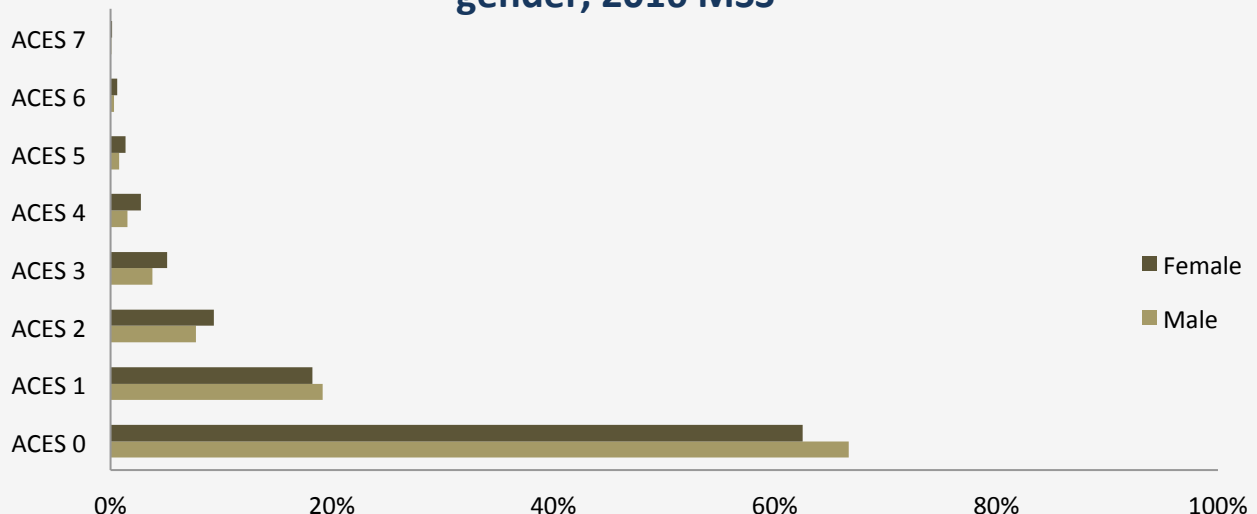
Minnesota Student Survey: The Adverse Childhood Events (ACE) Scale

The ACE score, as used in the Minnesota Student Survey, ranges from 0 to 7, and is based on the number of the following conditions experienced by the student. They include students reporting...

- ...they have a parent or guardian who is currently in jail, **and/or** who has been in jail in the past
- ...they live with someone who drinks too much alcohol
- ...they live with someone who uses illegal drugs or abuses prescription drugs
- ...a parent or other adult in the household has verbally abused them
- ...a parent or other adult in the household has physically abused them
- ...parents or other adults in the home physically abuse each other
- ...an adult or other person outside the family, **and/or** an older or stronger family member, has ever sexually abused them

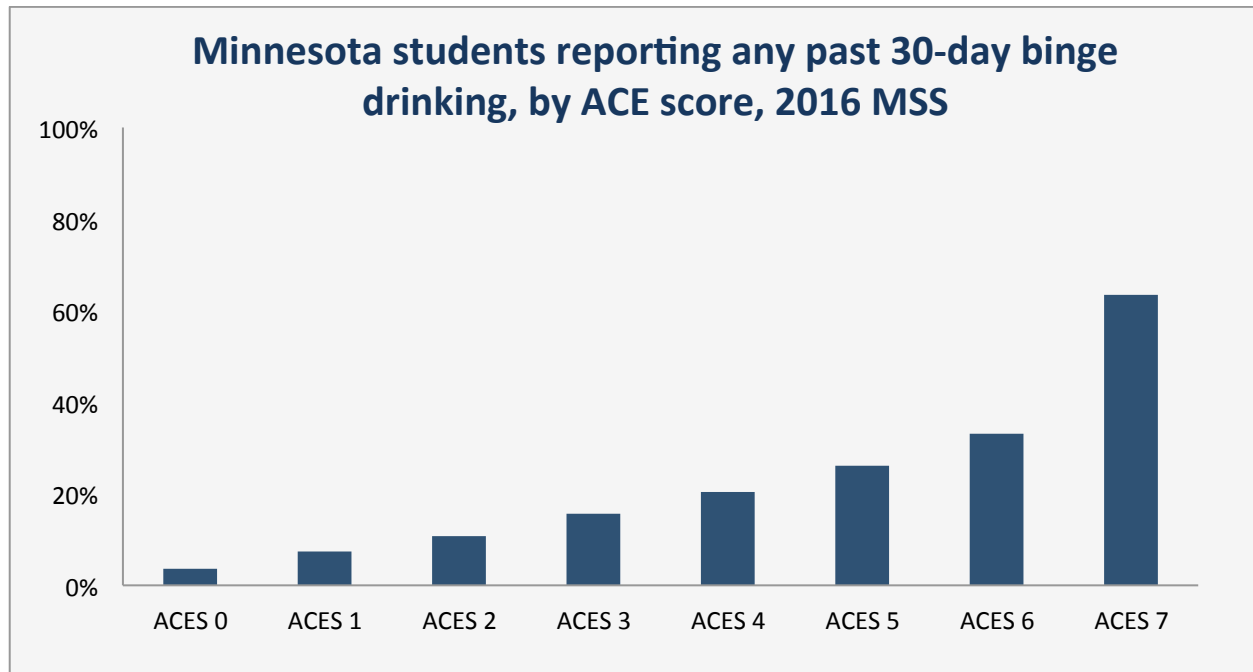
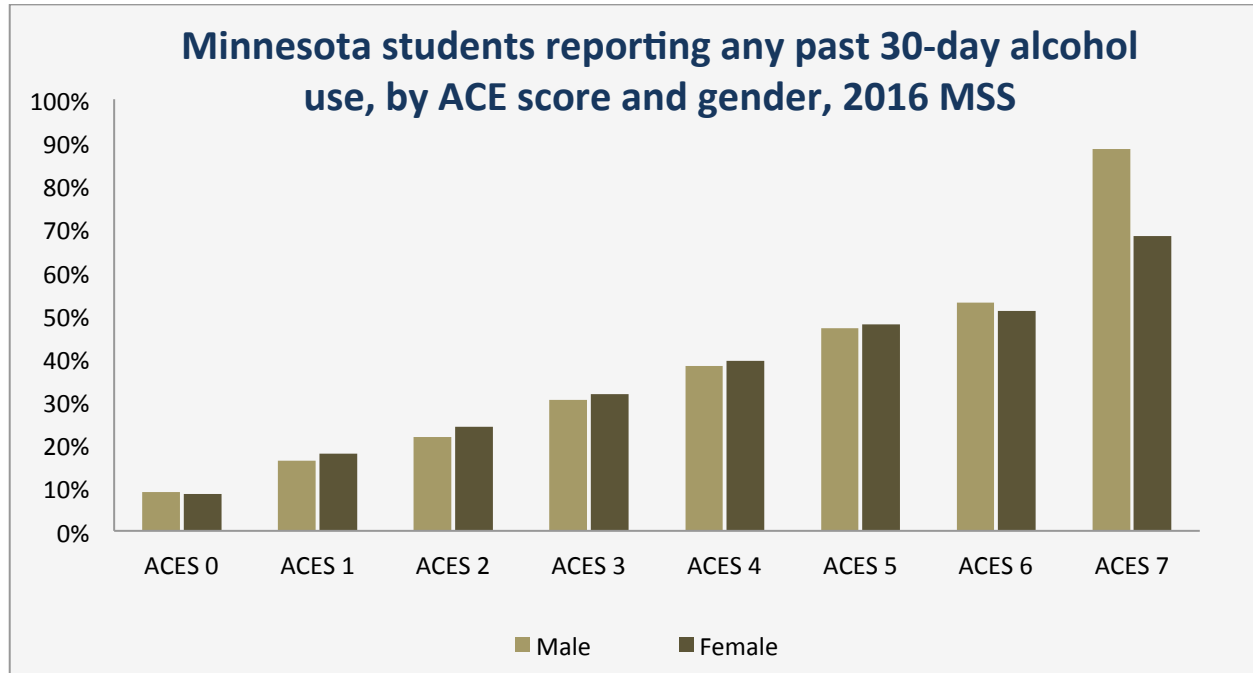
*33% of male students and 38.1% of female students
had an ACE score of 1+*

**Minnesota 8th, 9th, and 11th graders' ACE scores by
gender, 2016 MSS**



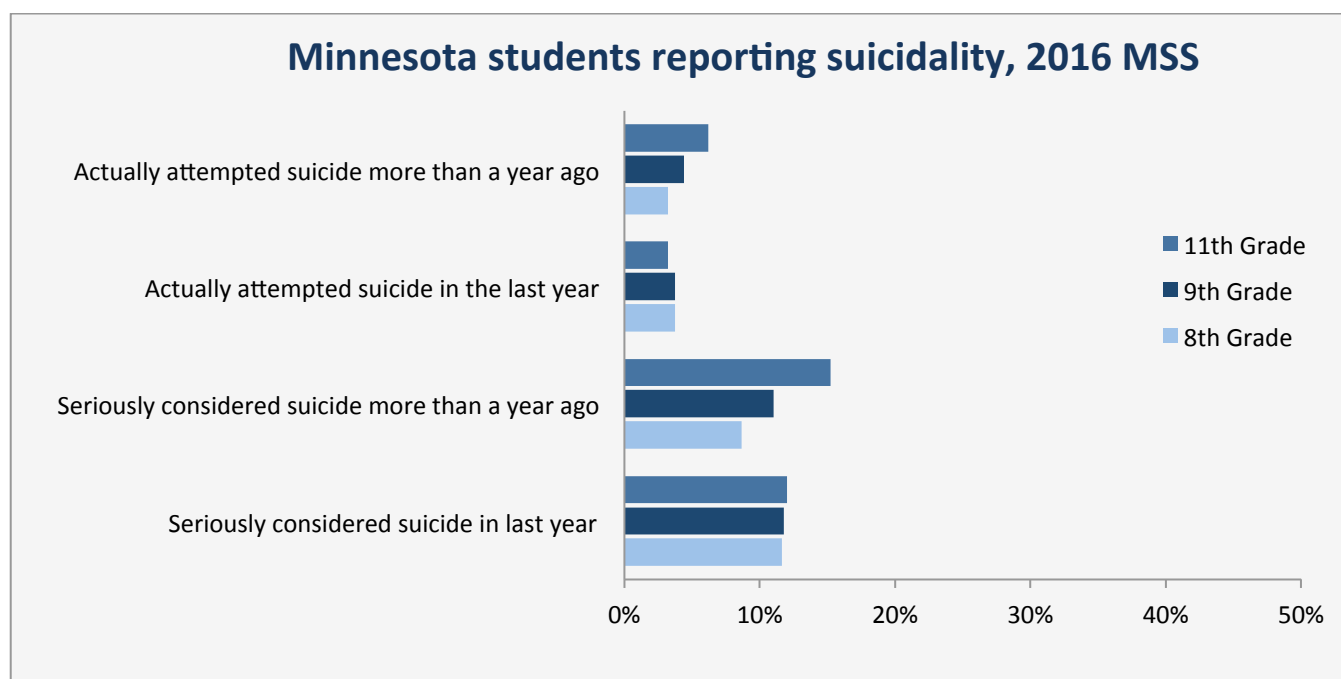
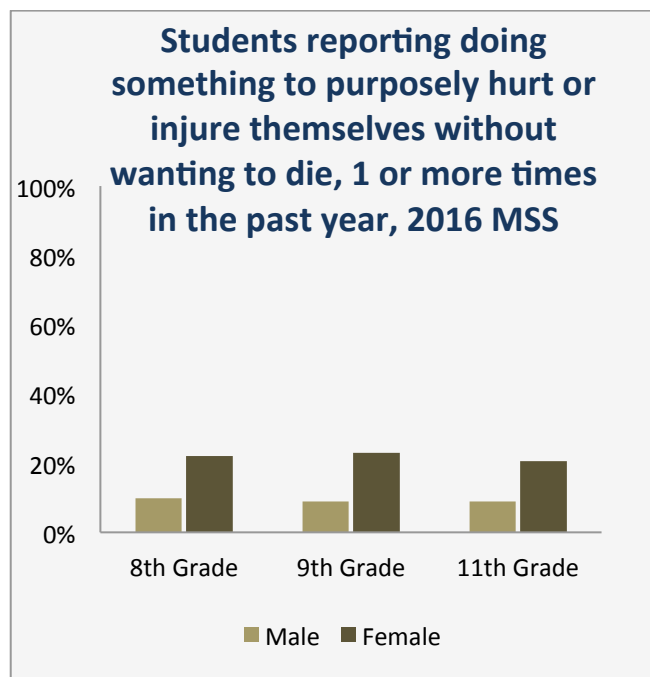
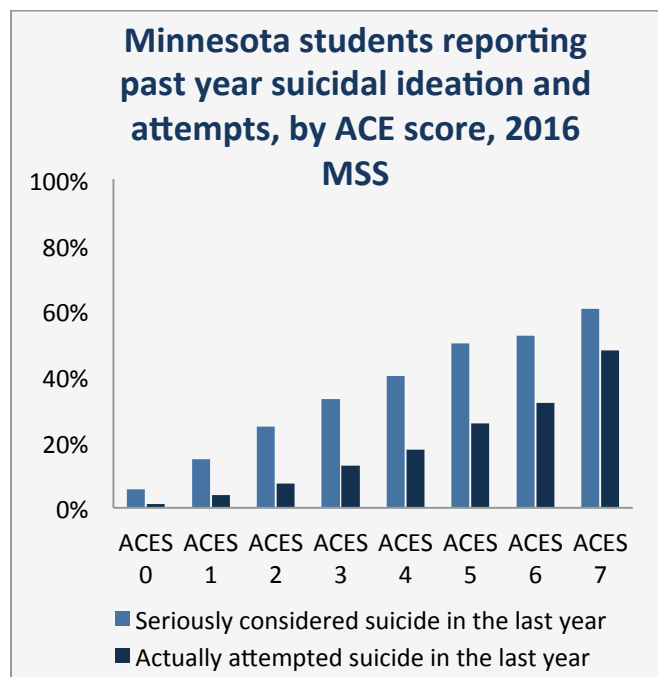
Data Source: MSS

Alcohol Use



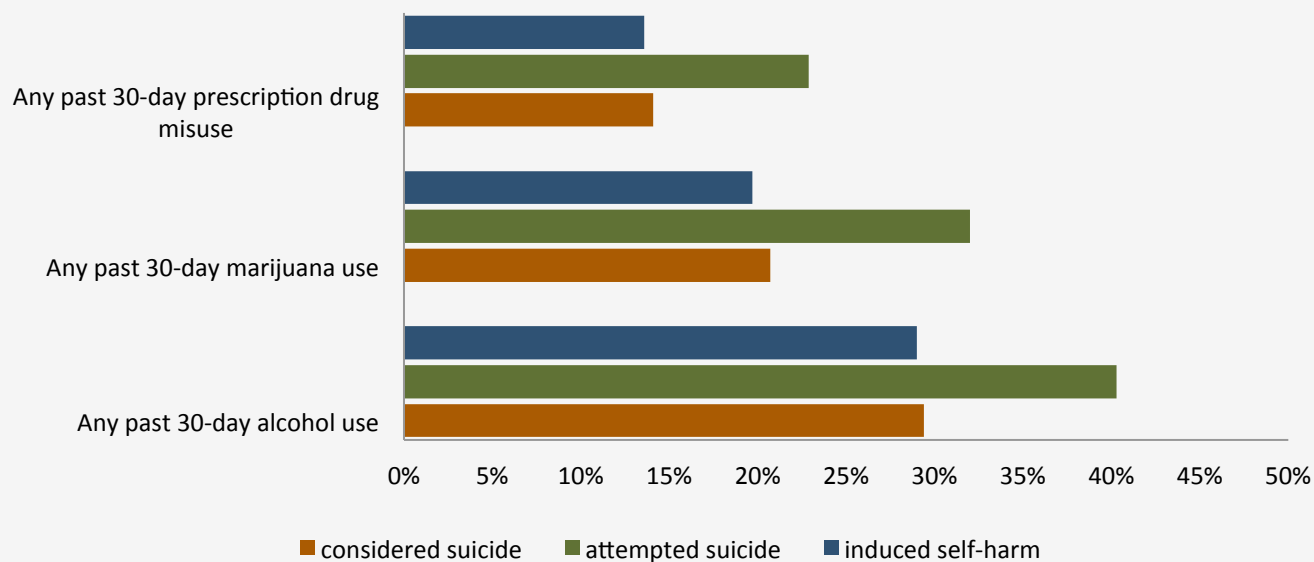
Data Source: MSS

Mental Health

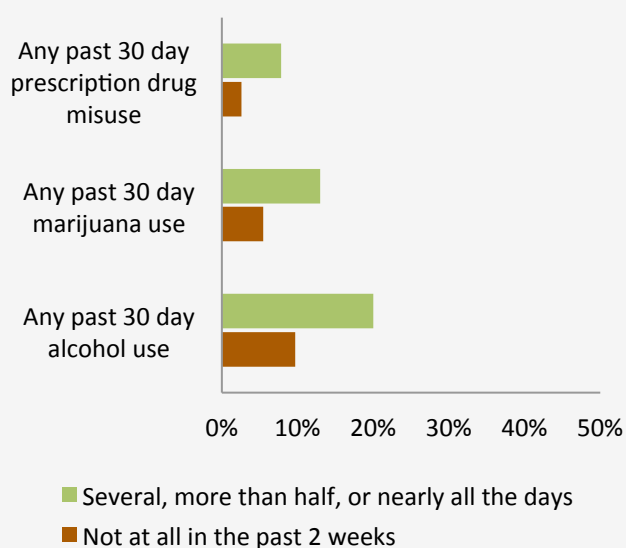


Data Source: MSS

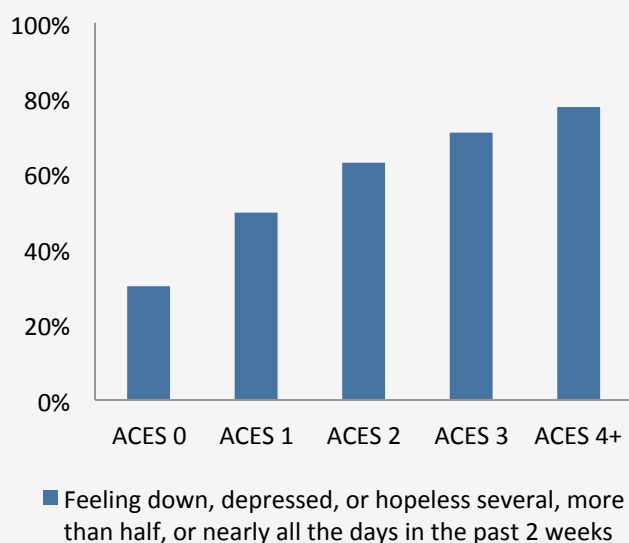
Students reporting substance use, who considered suicide, attempted suicide, or induced self-harm in the past year, 2016 MSS



Students reporting feeling down, depressed, or hopeless in the past 2 weeks, 2016 MSS

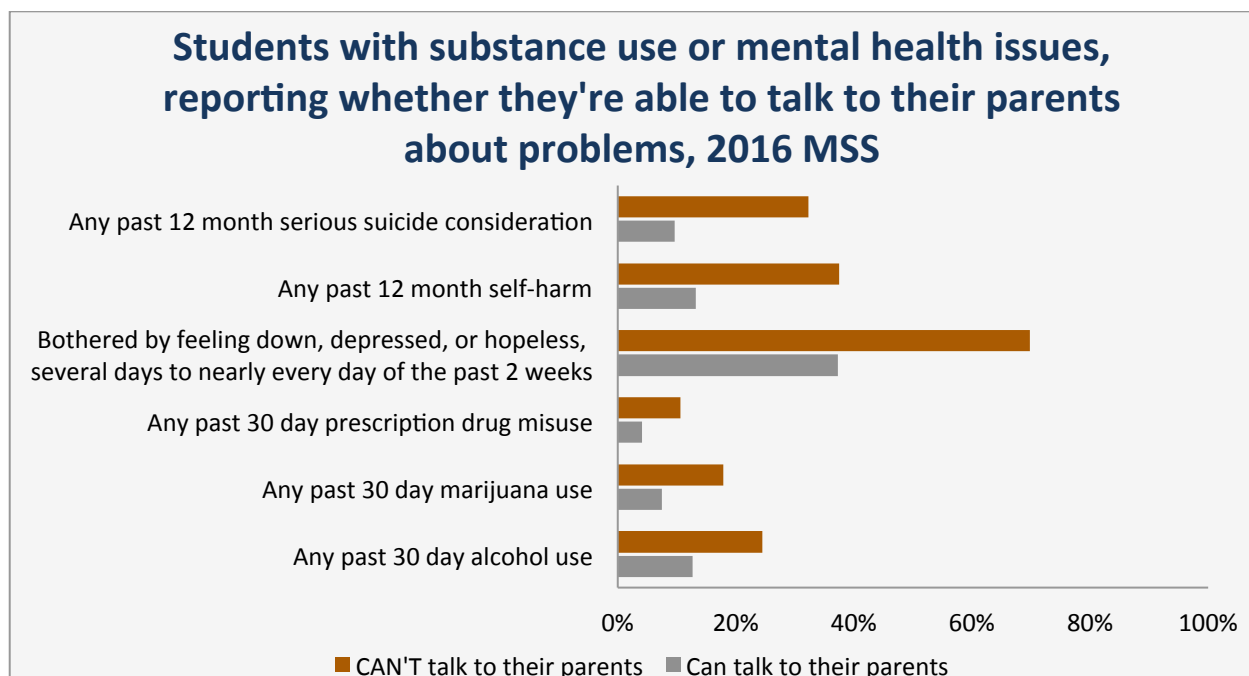


Students feeling down, depressed, or hopeless in the past 2 weeks, by ACES, 2016

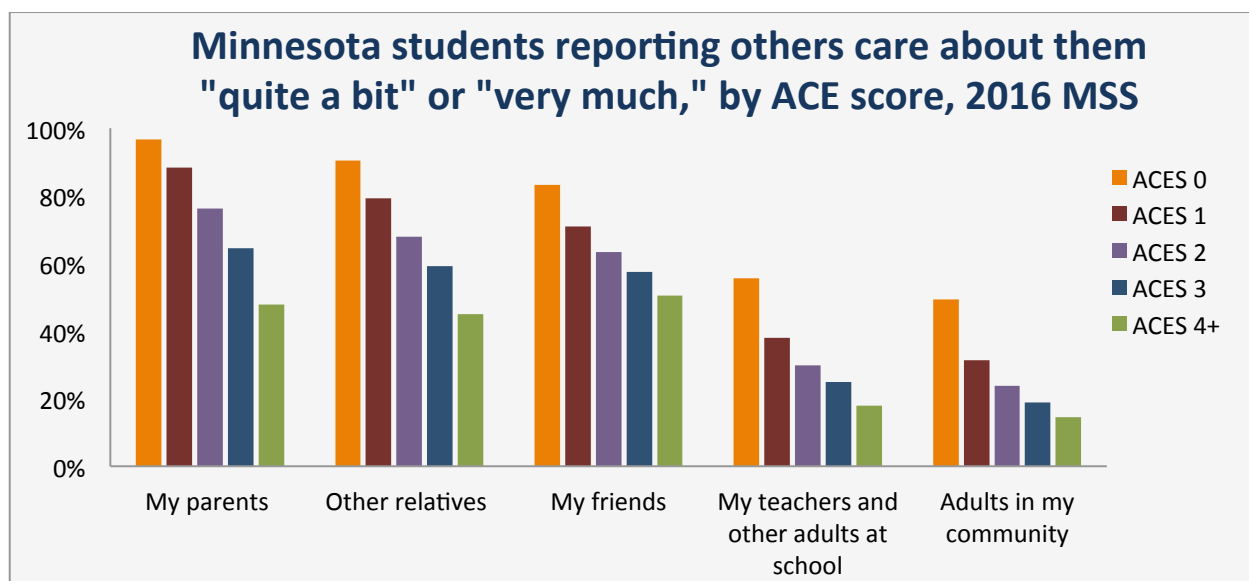


Data Source: MSS

Family and Community

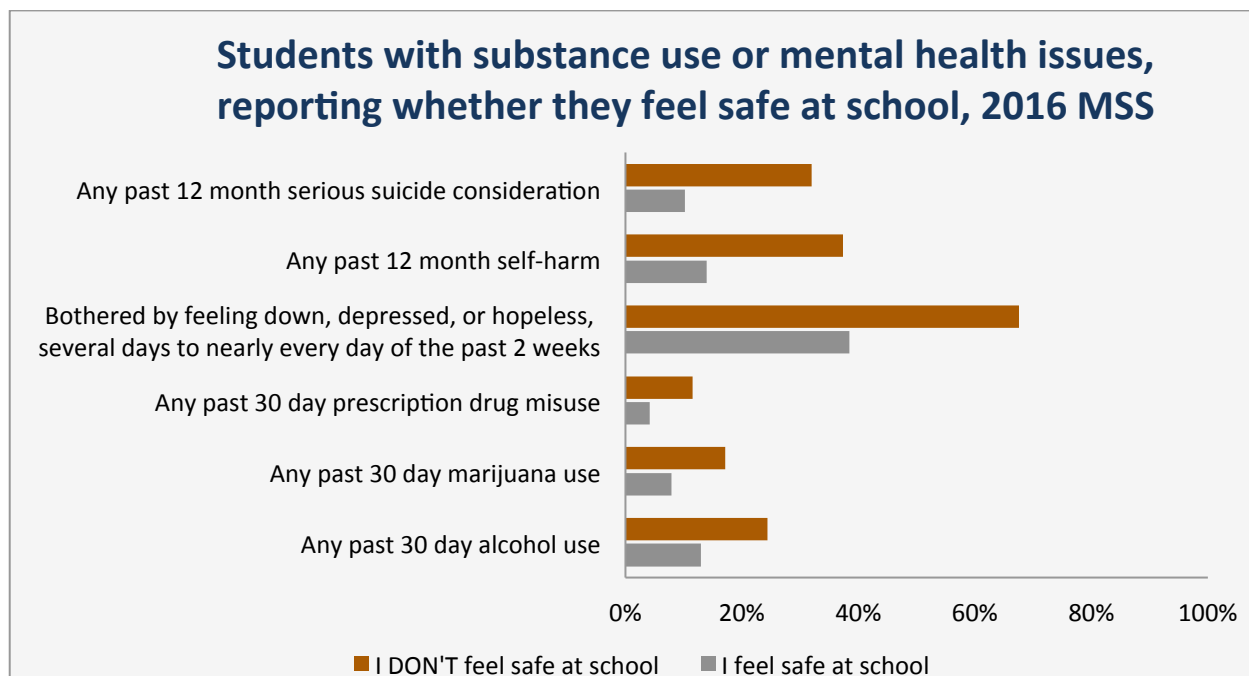


*Protective factor:
Students who feel that adults care for them are less likely to
engage in harmful behaviors*

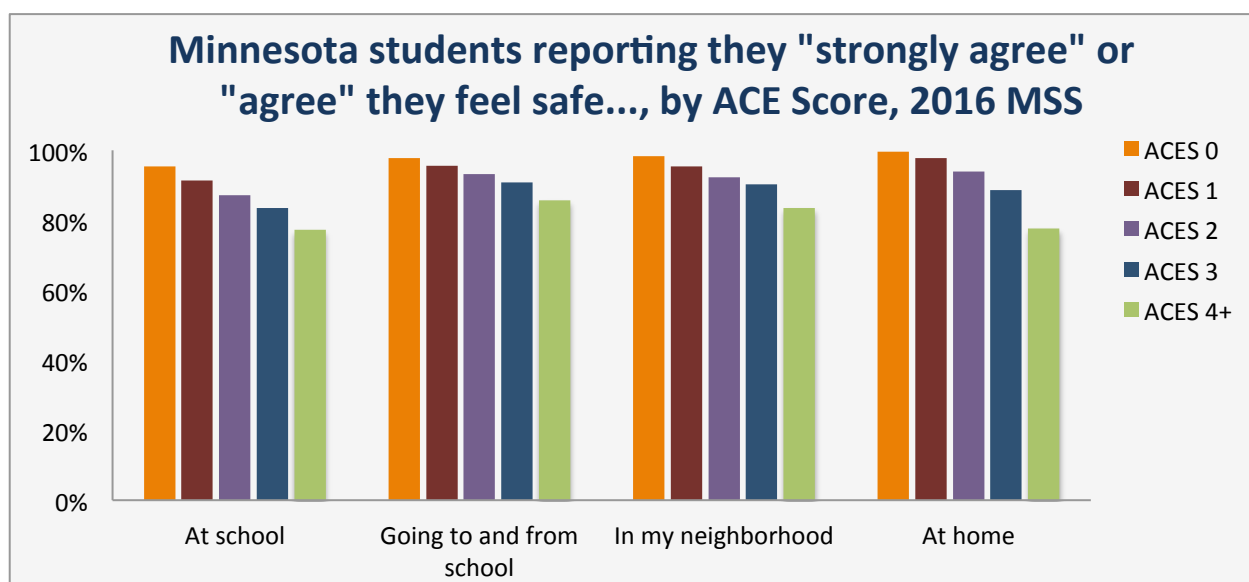


Data Source: MSS

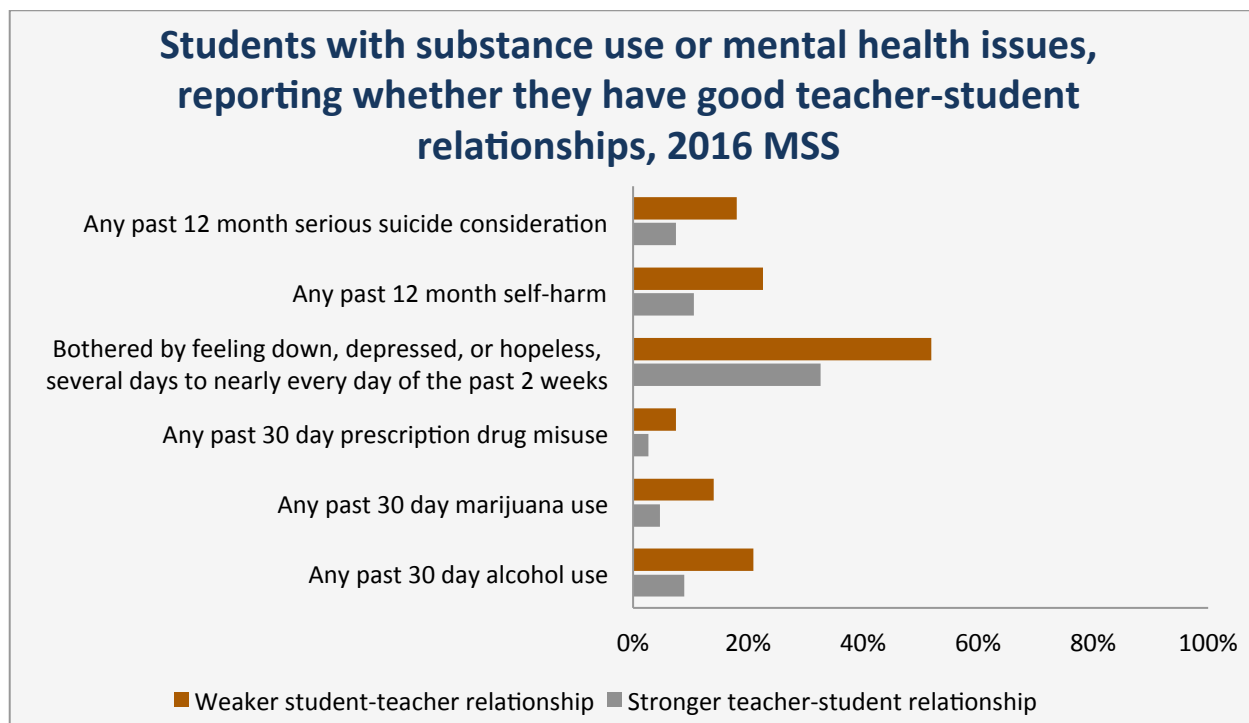
School



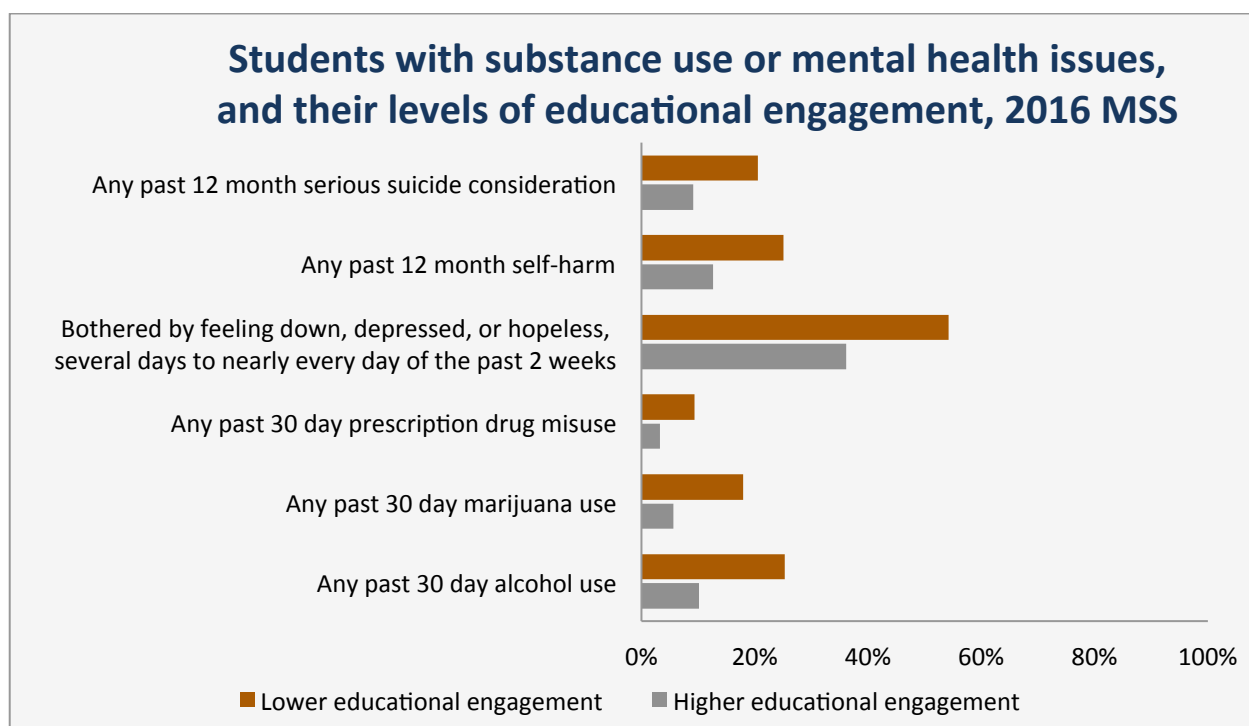
*Protective factor:
Students who feel safe at school are less likely to engage in harmful behaviors*



Data Source: MSS



Protective factor: School engagement



Data Source: MSS

One risk factor for students' substance use is experiencing bullying. For the purposes of the Minnesota Student Survey, bullying is defined as the following:

VICTIM

Students reporting, during the last 30 days, ANY times other students at school:

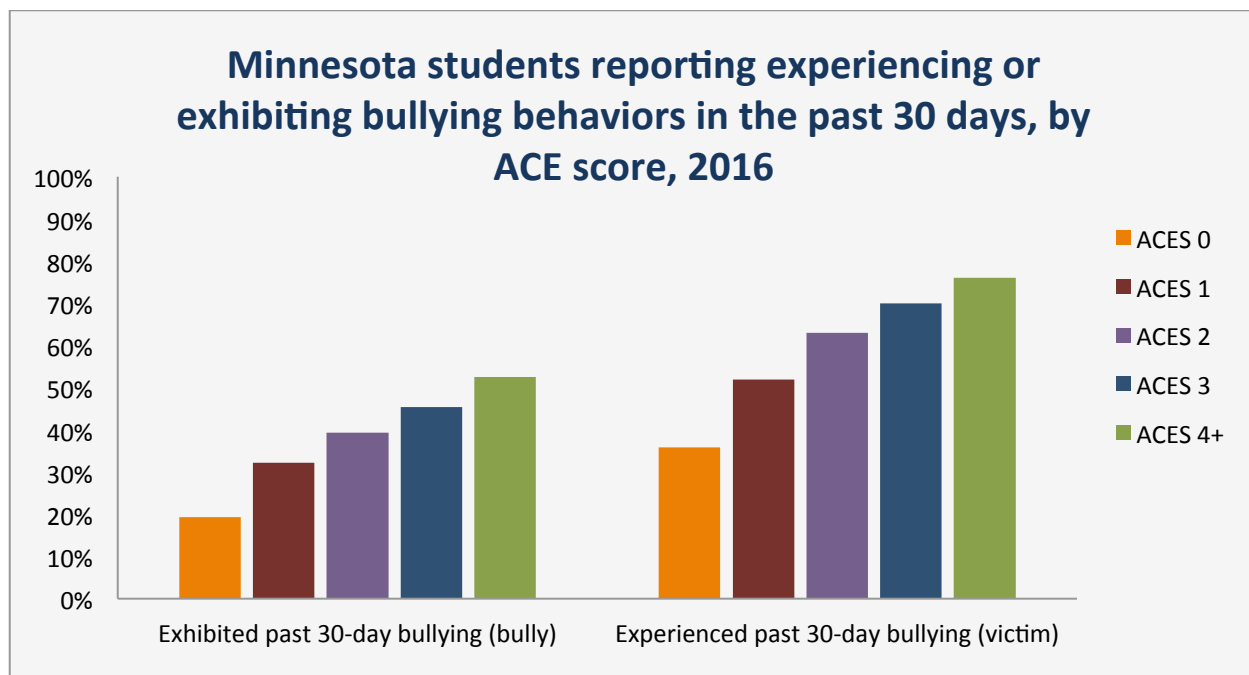
- Pushed, shoved, slapped, hit or kicked you when they weren't kidding around, *and/or*
- Threatened to beat you up, *and/or*
- Spread mean rumors or lies about you, *and/or*
- Made sexual jokes, comments or gestures toward you, *and/or*
- Excluded you from friends, other students, or activities

BULLY

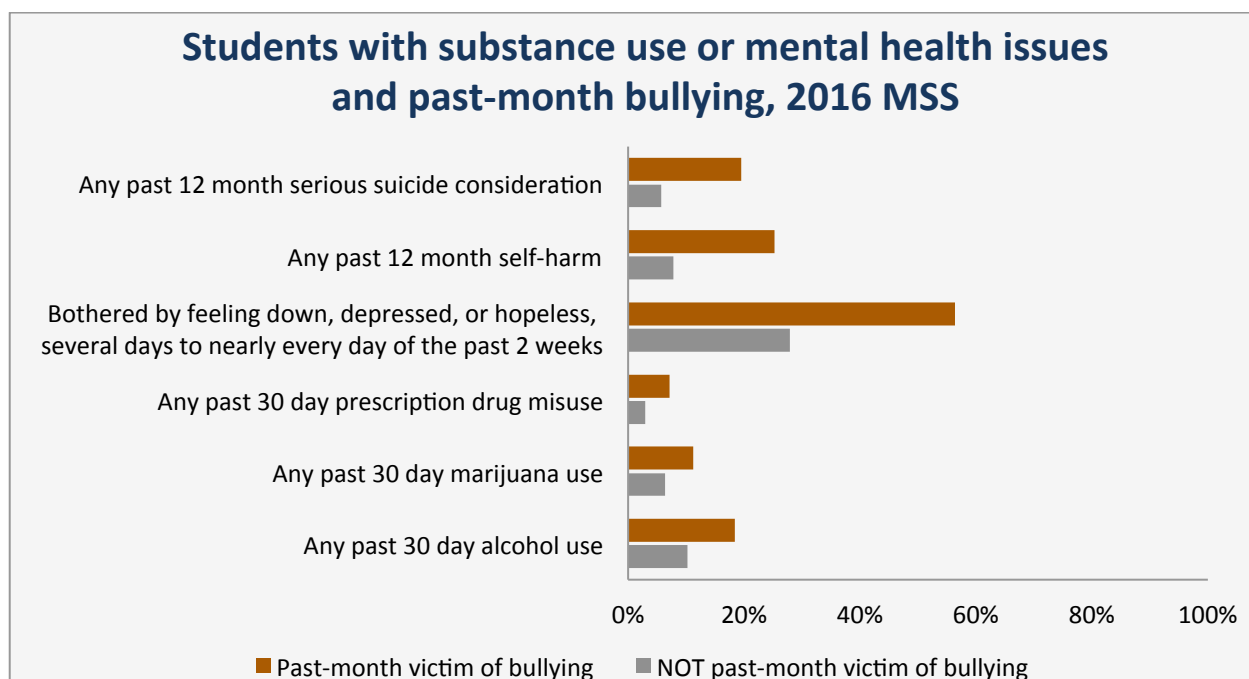
Students reporting, during the last 30 days, ANY times at school THEY:

- Pushed, shoved, slapped, hit or kicked someone when you weren't kidding around, *and/or*
- Threatened to beat someone up, *and/or*
- Spread mean rumors or lies about someone, *and/or*
- Made sexual jokes, comments or gestures toward someone, *and/or*
- Excluded someone from friends, other students, or activities

Data Source: MSS



Risk factor: Experiencing bullying



2017



Substance Abuse in Minnesota: A State Epidemiological Profile

Section 7. Appendix

Prepared by: EpiMachine, LLC

**for the Minnesota Department of Human Services, Alcohol
and Drug Abuse Division**

Substance Abuse in Minnesota

Section 7. Appendix

The 2017 Minnesota State EpiProfile is divided into seven parts:

1. Introduction (which includes a profile overview, population snapshot, and acknowledgements)
2. Executive Summary
3. Alcohol: Use, Consequences, and Intervening Variables
4. Tobacco and Nicotine: Use, Consequences, and Intervening Variables
5. Drugs: Use, Consequences, and Intervening Variables
6. Mental Health and Shared Factors
7. Appendix (which includes technical notes and data sources)

Appendix

Definitions and Technical Notes

For more detailed explanations of survey sample, census, rate, count, and other definitions please see the “Tools” section of the SEOW website: www.sumn.org.

Survey Sample

In a sample survey, only part of the total population is approached for information. The data are then 'expanded' or 'weighted' to make inferences about the whole population. The survey sample is the set of observations taken from a subset of

the population for the purpose of obtaining information about the entire population. The Minnesota Survey of Adult Substance Use and the Behavioral Risk Factor Surveillance System survey use samples to represent the state population at large.

In cases where data is presented from such studies, the reader is provided with the percent of the population only, not raw number of respondents.

Census

A census is an enumeration of people at a particular time. Unlike a sample based survey, a census surveys an entire population. The Minnesota Student Survey (MSS) is a census of all schools in Minnesota. In a census, schools may decline to participate. In 2007, 91% of publicly operating school districts participated in the MSS.

Because answers to MSS questions were derived from a census of all schools, data is presented both in raw number and in percent terms.

Rate

Rates are ratios, calculated by dividing the numerator by the denominator. In epidemiology, a rate is the frequency with which a health event occurs in a defined population. The components of the rate are the raw number (numerator) and the population (denominator). In a fraction, the numerator is the number on top—the number which is divided. The denominator is the number on the bottom—the number you are dividing by. In the Profile, rates are presented per 1,000 or 100,000 of the population and are noted accordingly. Be sure to reference each data sheet for the denominator.

Incidence rates differ from prevalence rates. Incidence refers to the frequency of development of a *new* illness in a population in a certain period of time,

normally one year. **Prevalence** refers to the current number of people suffering from an illness in a given year; this number includes all those who may have been diagnosed in prior years, as well as in the current year.

A percent is the ratio of a number to 100; percent means “per hundred.” Proportions are a part, share, or portion of its relation to a whole often expressed as a percentage. Percentages in this profile based on Minnesota Student Survey data or Minnesota Survey of Adult Substance Use data were calculated using a demographic-specific denominator. For example, the percent of male 12th graders in the seven-county metro area who reported drinking any alcohol in the past 30 days is based on the total number of male 12th graders in the seven-county metro area who responded to the survey question about 30-day alcohol use (not based on the total number of students in Minnesota who responded to this question.)

Rate ratios are presented in the Epi Profile, often comparing a Minnesota rate to a US rate (calculated by simply dividing the Minnesota rate by the US rate). A rate ratio of 1.00 indicates that the Minnesota rate equals the US rate. Over 1.00 indicates higher use, while less than 1.00 indicates lower use.

Counts

Many data sources in the Profile present official count data. These include, but are not limited to, death, arrest and corrections data. These data provide actual raw numbers reported to and collected by various state agencies. Whenever possible, raw numbers are provided along with percentages.

Data Sources

Data Source: Alcohol-Related Disease Impact (ARDI)

Description: The Centers for Disease Control and Prevention (CDC) calculate Alcohol-Related Disease Impact (ARDI) estimates of alcohol-related deaths due to alcohol consumption. To do this, ARDI either calculates or uses pre-determined estimates of Alcohol-Attributable Fractions (AAFs)—that is, the proportion of deaths from various causes that are due to alcohol. These AAFs are then multiplied by the number of deaths caused by a specific condition (e.g., liver cancer) to obtain the number of alcohol-attributable deaths.

Sponsored by: Centers for Disease Control and Prevention (CDC)

Geographic level: National, State

Frequency: 2001-2005 average

Strengths/weaknesses:

Strengths

- Provides alcohol-attributable mortality estimates for a number of diseases in addition to the total alcohol-related deaths
- Minnesota-specific alcohol-related deaths are available by gender, by age group, and by alcohol consumption levels

Weaknesses

- Based on BRFSS data, which is self-report
- BRFSS prevalence estimates are based on alcohol use during the past 30 days; former drinkers are not included in the calculations
- ARDI exclusively uses the underlying cause of death from vital statistics
- age-specific estimates of AAFs were only available for motor-vehicle traffic deaths

Link to source: <https://apps.nccd.cdc.gov/ardi/HomePage.aspx>

Data Source: Behavioral Risk Factor Surveillance System (BRFSS)

Description: The BRFSS is a confidential telephone survey of adults age 18 years and older. Respondents are randomly selected in order to reflect the population of Minnesota.

Sponsored by: Centers for Disease Control and Prevention (CDC)

Geographic level: National, State

Frequency: Data collected and reported annually

Suppressed values: Un-weighted denominator counts below 30 are omitted from the Profile to avoid inaccurate representation of gender, age or racial and ethnic groups and to ensure the reliability of estimates.

Strengths/weaknesses:

Strengths

- Standardized and comparable across states
- Trend data available since 1984

Weaknesses

- Non-response bias; bias is reduced by weighting.
- Self-report/response bias
- The recent addition of a cell phone sample, while improving the validity of estimates overall, has made comparisons over time unreliable

Link to source: <http://www.cdc.gov/brfss>

Data Source: Boat & Water Safety Division

Description: The Boat & Water Safety Division collects data on alcohol-related boating citations as well as boating fatalities.

Data were obtained upon request.

Sponsored by: Minnesota Department of Natural Resources

Geographic level: State

Frequency: Data collected annually

Strengths/weaknesses:

Strengths

- Trend data available since 1986

Weaknesses

- Arrest data reflect levels of enforcement as opposed to actual frequency of boating under the influence

Data Source: CDC Wonder Compressed Mortality Data

Description: The Compressed Mortality database contains mortality and population counts for all U.S. counties for the years 1979 to 2005. Counts and rates of death can be obtained by underlying cause of death, state, county, age, race, sex, and year. The International Classification of Diseases 9th Revision (ICD 9) codes are used to specify underlying cause of death for 1979 - 1998. Beginning in 1999, cause of death is specified with the International Classification of Diseases 10th Revision (ICD 10) codes.

Sponsored by: Centers for Disease Control and Prevention (CDC)

Geographic level: National, State, County

Frequency: Data collected and reported annually

Strengths/weaknesses:

Strengths

- Standardized and comparable across states
- Trend data available since 1979

Weaknesses

- Race categories are limited to White, Black or African American and Other
- ICD 10 codes differ substantially from ICD 9 codes

Link to source: <http://wonder.cdc.gov/mortSQL.html>

Data Source: College Student Health Survey (CSHS)

Description: The College Student Health Survey was designed by Boynton Health Service, University of Minnesota. The survey is administered to self-selected colleges and universities in Minnesota; in 2015, 17 schools participated. Students are asked about health care and insurance access, general health, mental health, substance use, financial health, nutrition and physical health, and sexual health. Reports are prepared for special populations, including veterans and LGB students.

Sponsored by: Boynton Health Service, University of Minnesota

Geographic level: State

Frequency: Data collected and reported annually since 2007 (except 2014)

Strengths/weaknesses:

Strengths

- Snapshot of college students in Minnesota
- Questions are designed to be comparable to national data

Weaknesses

- The number of colleges participating changes from year to year

Link to source: <http://www.bhs.umn.edu/surveys/>

Data Source: Fatality Analysis Reporting System (FARS)

Description: FARS data are derived from a census of fatal traffic crashes within the 50 States, District of Columbia, and Puerto Rico. To be included in FARS, a crash must involve a motor vehicle traveling on a trafficway customarily open to the public and result in the death of a person (occupant of a vehicle or a non-motorist) within 30 days of the crash.

Sponsored by: National Center for Statistics and Analysis (NCSA) of the National Highway Traffic Safety Administration (NHTSA)

Geographic level: National, State, County

Frequency: Data collected and reported annually

Strengths/weaknesses:

Strengths

- Standardized and comparable across states
- Data are gathered from the State's own source documents and are coded on standard FARS forms
- Trend data available since 1975

Weaknesses

- Includes fatalities only, not all crashes from impaired driving

Link to source: <http://www-fars.nhtsa.dot.gov>

Data Source: Minnesota Center for Health Statistics Data

Description: Mortality data, including lung, bronchus and trachea cancer deaths, cirrhosis deaths, suicides and homicides are obtained upon request. Statistics on smoking during pregnancy are from the Minnesota County Health Tables. Statistics on HIV/AIDS cases involving intravenous drug use (IDU) as the mode of exposure are from the HIV/AIDS Prevalence and Mortality Tables.

Sponsored by: Minnesota Department of Health

Geographic level: State, County

Frequency: Collected and reported annually

Strengths/weaknesses:

Strengths

- Collected consistently by the state
- Trend data available

Weaknesses

- The MN Center for Health Statistics does not report on details on which lung, bronchus and trachea cancer deaths were caused by cigarette smoking, which cirrhosis deaths were caused by alcohol consumption, or which suicide and homicide deaths were caused by alcohol or other drug consumption.
- Data on smoking during pregnancy is self-reported

Link to source: http://www.health.state.mn.us/divs/chs/top_2.htm and <http://www.health.state.mn.us/divs/idepc/diseases/hiv/hivsurvrpts.html>

Data Source: Minnesota Department of Corrections Data

Description: The probation survey is designed to collect data on Minnesota probationers. The definition of probationer is: “All probationers, regardless of conviction status, who were under the supervision of a probation agent as part of a court order at any time including those ordered to pay restitution, complete community service or monitoring.”

The inmate profile captures the number of incarcerated persons in the state of Minnesota twice a year.

Sponsored by: Minnesota Department of Corrections

Geographic level: State, County

Frequency: Probation survey data are collected and reported annually. The inmate profile is compiled bi-annually.

Strengths/weaknesses:

Strengths

- Trend data available since 1981 for inmate profile and 1983 for probation survey

Weaknesses

- Both the probation survey and the inmate profile count offenders only once and may exclude cases that involve drug or chemical convictions. The probation survey counts an offender once in the most serious category. The inmate profile counts an inmate once, by governing sentence which is typically the sentence with the greatest release date (which may or may not be the most serious offense).

Link to source: <http://www.doc.state.mn.us>

Data Source: Minnesota Office of Traffic Safety Data—Minnesota Motor Vehicle Crash Facts and Minnesota Impaired Driving Facts

Description: Crash Facts provides summary statistical information on crashes, deaths and injuries in Minnesota. Impaired Driving Facts provides similar statistics, but is focused on DWI violations and consequences of impaired driving in Minnesota.

Cost of Alcohol Related Traffic Crashes, Fatalities and Injuries are based on estimates provided by the National Safety Council.

They do not attempt to include “comprehensive costs” but just direct costs of traffic crashes, deaths and injuries due to medical expense, property damage and lost productivity. Other procedures that attempt to include comprehensive costs (e.g. those used by US Dept of Transportation) result in total cost estimates about 3 times greater than those calculated here.

Sponsored by: Minnesota Office of Traffic Safety

Geographic level: State, County

Frequency: Data collected and reported annually

Strengths/weaknesses:

Strengths

- Although traffic crash reporting thresholds vary somewhat from state to state, all states produce an annual report summarizing traffic crash statistics. Minnesota’s “Crash Facts” has some comparability to similar reports in all other states.
- Impaired Driving Facts provides detailed information about DWIs, alcohol-related crashes, and injuries and fatalities resulting from those crashes.
- Alcohol-related traffic death statistics are available since 1984; DWI statistics are available since 1990.

Weaknesses

- Alcohol-related injuries are less well documented than fatalities

Link to source: <http://www.dps.state.mn.us/ots>

Data Source: Minnesota Student Survey (MSS)

Description: The MSS is a confidential and anonymous self-administered survey given to 5th, 8th, 9th and 11th grade students attending Minnesota public, charter and tribal schools. Most schools elect to participate in the survey; in 2013, this included 84% of eligible school districts, comprising about 67% of all Minnesota students in those grades.

Although the data are not presented here, the survey is also administered to area learning centers, juvenile correction facilities and private schools electing to participate.

Sponsored by: Minnesota schools, the Minnesota Department of Education, the Minnesota Department of Health, the Minnesota Department of Human Services, and the Minnesota Department of Public Safety

Geographic level: State, County, 7-County Metro and Non-Metro Regions

Frequency: Data collected and reported every three years

Missing Values: The Profile omits values where the number of total respondents for each question, and for each demographic category, is less than 30. For example, if less than 30 female, Hispanic 5th graders respond to a particular question we will suppress the results. This is a rule imposed by the SEOW in order to protect the confidentiality of the survey respondents.

The results of the Minnesota Student Survey are also available at a county level. Data Privacy requirements mandate that data are presented in a manner such that no individual student can be identified through the presentation of the results. As part of the Data Privacy practices, the results are also presented in a manner that no individual school district could be identified through the results. Therefore, for counties that have only one school district, the results are not presented. Results are also withheld for counties in which the minimum number for student participation was not met.

Strengths/weaknesses:

Strengths

- “Census” of schools, not sample
- School districts get their own data
- Trend data available since 1992 on some questions

Weaknesses

- 5th graders not asked all drug questions
- Some school districts do not participate.
- Student participation within the school district can vary widely.
- Reporting biases associated with self-report data
- Format changed in 2013; previously, 6th, 9th, and 12th graders were surveyed. Thus, trend data for Minnesota students is available only for 9th graders.

Link to source:

http://education.state.mn.us/mde/Learning_Support/Safe_and_Healthy_Learners/Minnesota_Student_Survey/index.html

Demographics: As the only statewide survey of youth, the Profile relies heavily on data collected from the Minnesota Student Survey. Characteristics of students who participated in the 2013 Minnesota student survey are follows:

Appendix

| All Minnesota Student Survey Respondents (2013) | | | | | | | |
|---|-------------------------------------|--------|-------|--------|-------|---------|--------|
| | | Male | | Female | | Total | |
| | | N (#) | % | N (#) | % | N (#) | % |
| Total | | 81,634 | 50.0% | 80,400 | 50.2% | 162,034 | 100.0% |
| Grade | 5th | 20,293 | 51.0% | 19,561 | 49.0% | 39,854 | 100.0% |
| | 8th | 21,548 | 50.0% | 21,293 | 50.0% | 42,841 | 100.0% |
| | 9th | 21,183 | 50.0% | 21,198 | 50.0% | 42,381 | 100.0% |
| | 11th | 18,610 | 50.0% | 18,348 | 50.0% | 36,958 | 100.0% |
| Race/Ethnicity | White | | | | | 119,958 | 74.0% |
| | African-American, African or Black | | | | | 9,850 | 6.0% |
| | Native American | | | | | 3,067 | 2.0% |
| | Native Hawaiian or Pacific Islander | | | | | 639 | 0.0% |
| | Asian only | | | | | 8,781 | 5.0% |
| | Multiple Race | | | | | 11,766 | 7.0% |
| | Don't know/No Answer | | | | | 7,973 | 5.0% |
| Ethnic /Cultural Group | Hispanic/Latino | | | | | 11,818 | 7.0% |
| | Somali | | | | | 2,024 | 1.0% |
| | Hmong | | | | | 4,253 | 3.0% |

Data Source: Minnesota Survey of Adult Substance Use (MNSASU)

Description: The MNSASU is a statewide telephone survey conducted by DHS, once in 2004 and once in 2010. The primary objective of this project is to obtain current estimates of the number of adults in the general population in Minnesota who are abusing or dependent on alcohol or other drugs and are in need of treatment. The prevalence of *substance* abuse and dependence and need for treatment were assessed for the total population, and by region, race and ethnicity, gender, age group, and immigration status. The population for this survey included Minnesota residents 18 years of age or older and non-institutionalized. The study employed a random digit dial mode of contact, with over 16,000 adults in Minnesota completing the survey.

The sample was stratified by region, and African Americans, American Indians, Latinos, Hmong and other Asian Americans were over-sampled to ensure adequate numbers of respondents to provide reliable estimates for these sub-groups. The survey was administered by the University of Minnesota, School of Public Health in both English and Spanish. In 2010 the weighted response rate was 47%. These data are self-reported.

Sponsored by: Minnesota Department of Human Services, Performance Measurement and Quality Improvement

Geographic level: State, 7-County Metro and Non-Metro Regions, Prevention Regions

Frequency: Next year data will be available: 2018

Strengths/weaknesses:

Strengths

- The survey methods employed over-sampling and weighting to accurately reflect the Minnesota population
- Trends can be observed with the recently available 2010 data

Weaknesses

- Telephone non-coverage-(e.g., 2000 Census estimates that MN had 1.1% households with no phone).
- Non-response bias; bias is reduced by weighting.
- Self-report/response bias
- Small subpopulation sizes limit the comparisons that are possible across groups.

Link to source: <http://dhs.state.mn.us/mnsasu/>

Data Source: National Institute on Alcohol Abuse and Alcoholism (NIAAA)

Description: The NIAAA collects data on volume beverage and ethanol consumption in gallons for states, as well as per capita ethanol consumption. Data are presented for beer, wine, spirits, and all three combined.

Sponsored by: National Institutes of Health

Geographic level: National, State, and Census Regions

Frequency: Data are collected and reported annually

Strengths/weaknesses:

Strengths

- Trend data available since 1970
- Collected consistently

Weaknesses

- Data not available by county or by demographic group

Link to source: <http://pubs.niaaa.nih.gov/publications/surveillance.htm>

Data Source: National Survey on Drug Use and Health (NSDUH)

Description: The NSDUH is a nationwide survey involving in-home interviews with approximately 70,000 randomly selected individuals age 12 and older. Data are presented as two-year averages. Accordingly, the Profile presents combined data from 2003/2004, 2004/2005, 2005/2006, etc.

Sponsored by: Substance Abuse and Mental Health Services Administration (SAMHSA)

Geographic level: National, State

Frequency: Data are presented as two-year averages

Strengths/weaknesses:

Strengths

- Trend data available since 1972

Weaknesses

- No state data by Race/Ethnicity

Link to source: <http://oas.samhsa.gov/stateTrends.htm>

Data Source: Safe and Healthy Minnesota Schools (SAHMS)

Description: The SAHMS Portal contains data, by school district, on disciplinary incidents involving alcohol, tobacco and other drugs. Districts report all disciplinary incidents that result in an out-of-school suspension/removal of one day or longer, and expulsions/exclusions. In addition, SAHMS contains Minnesota Students Survey data and data on ATOD programs provided by each district.

Sponsored by: Minnesota Department of Education

Geographic level: State, Region, County, School District

Frequency: Data collected and reported annually

Strengths/weaknesses:

Strengths

- Data collected consistently
- Trend data available since the 2004/2005 school year
- Data available at the sub-state level

Weaknesses

- Does not reflect the actual number of youth possessing or using alcohol, tobacco or other drugs at school—only those caught and disciplined

Link to source (You must create an account, if you don't currently have one, to view this portal):

<https://education.state.mn.us/MIDMS/login.jsf?AppId=EDPPublic>

Data Source: Shoveling Up II: The Impact of Substance Abuse on Federal, State, and Local Budgets

Description: The Shoveling UP II report, based on three years of research and analysis, assess the costs of tobacco, alcohol and illegal and prescription drug abuse to all levels of government using the most conservative assumptions.

Sponsored by: The National Center on Addiction and Substance Abuse (CASA) at Columbia University

Geographic level: National and State

Frequency: Published in 2009, using 2005 data.

Strengths/weaknesses:

Strengths

- Shows spending for each sector

Weaknesses

- Spending is not broken down by substance

Link to source: http://www.casacolumbia.org/templates/publications_reports.aspx

Data Source: Smoking-Attributable Mortality, Morbidity, and Economic Costs (SAMMEC)

Description: SAMMEC derives smoking-attributable mortality (SAM) using an attributable-fraction formula. The Adult SAMMEC module provides the smoking-attributable fractions (SAFs) of deaths for 19 smoking-related diseases are calculated using sex-specific smoking prevalence and relative risk (RR) of death data for current and former smokers aged 35 and older. The Adult module also provides the average annual smoking-attributable productivity losses in dollars. The MCH Smoking Attributable Health Outcomes report displays the smoking-attributable fraction (SAF), smoking-attributable mortality (SAM), and smoking-attributable years of potential life lost (YPLL) for each of the diseases for which maternal smoking is a significant risk factor. The MCH module also provides smoking-attributable neonatal expenditures in dollars.

Sponsored by: Centers for Disease Control and Prevention (CDC)

Geographic level: National, State

Frequency: Adult module—five year reports: 1997-2001 and 2000-2004; MCH module—single year reports for 1999 through 2004

Strengths/weaknesses:

Strengths

- Provides smoking attributable mortality rate (SAM) for each of the 19 diseases in addition to the total SAM rate
- Minnesota-specific smoking-attributable deaths are available by gender

Weaknesses

- The attributable-fraction methodology calculates smoking-attributable deaths using smoking prevalence and number of deaths for the current year. However, most smoking-attributable deaths are the result of smoking in previous decades, during which smoking rates were higher. During periods where smoking prevalence is declining, the attributable-fraction (AF) methodology will tend to understate the number of deaths caused by smoking.
- The estimates in Adult SAMMEC do not account for deaths from cigar smoking, pipe smoking, and smokeless tobacco use.
- The productivity loss estimates are also understated because they do not include the value of work missed because of smoking-related illness, other smoking-related absenteeism, excess work breaks, or the effects of secondhand smoke.
- Smoking status is obtained through maternal self reports.

Link to source: <http://www.healthdata.gov/dataset/smoking-attributable-mortality-morbidity-and-economic-costs-sammecc-smoking-attributable-6>

Data Source: SYNAR Data

Description: The Synar Amendment requires states to have laws prohibiting the sale of tobacco products to those younger than 18 and to conduct annual random, unannounced inspections of a valid sample of tobacco retailers to ensure compliance. Statistics presented are the retailer violation rates (RVR) by Federal Fiscal Year (FFY).

Sponsored by: Center for Substance Abuse Prevention (CSAP)

Geographic level: National, State

Frequency: Data collected and reported annually

Strengths/weaknesses:

Strengths

- Compliance checks are conducted uniformly from state to state
- Trend data are available since 1997

Weaknesses

- There may be some variation in how compliance checks are conducted

Link(s) to source: Minnesota data: <http://prevention.samhsa.gov/tobacco/01synartable.aspx>

National data: <http://www.samhsa.gov/synar>

Data Source: Uniform Crime Reports (UCR)

Description: The Minnesota Bureau of Criminal Apprehension collects activity information from law enforcement agencies throughout the State of Minnesota. Uniform Crime Reports measure the amount of criminal activity within the State as collected and prepared from data submitted by individual law enforcement agencies.

The offense categories presented in the Profile are Part II offenses: liquor laws and narcotics arrests. The St. Paul Police Department does not submit Part II arrest data to the BCA

Sponsored by: Minnesota Bureau of Criminal Apprehension (BCA)

Geographic level: State, County

Frequency: Data collected and reported annually

Strengths/weaknesses:

Strengths

- Trend data available since 1935
- UCR data for Minnesota are captured nationally in Crime in the United States, an annual publication of the Federal Bureau of Investigation (FBI)

Weaknesses

- "Criminal activity" consists of measurements involving offenses, clearances, and arrests all of which are subject to reporting biases
- Race/ethnicity is often determined by law enforcement and therefore may not be as accurate as self-reported status.

Link to source: Minnesota Uniform Crime Reports:

<https://dps.mn.gov/divisions/bca/bca-divisions/mnjis/Pages/uniform-crime-reports.aspx>

Crime in the United States: <http://www.fbi.gov/ucr/ucr.htm>