

# **Alcohol, Tobacco, and Illicit Drug Consumption and Consequences in North Dakota**

## **The North Dakota Epidemiological Profile**

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Compiled and Developed by:  
The North Dakota State Epidemiological  
Outcomes Workgroup

Contact Information:  
North Dakota Department of Human Services  
Division of Mental Health and Substance Abuse  
1237 West Divide Avenue, Suite 1C  
Bismarck N.D. 58501-1208  
Phone: (701) 328-8920  
Toll Free: (800) 755-2719  
Fax: (701) 328-8969  
Email: [dhsmhsas@nd.gov](mailto:dhsmhsas@nd.gov)  
Web: <http://www.nd.gov/dhs>



# Executive Summary

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Use of alcohol, tobacco, and illicit drugs exacts a heavy toll on the lives and families of North Dakotans and the economy of the state. North Dakota's culture lends itself to the use and abuse of substances, namely alcohol, cigarettes, and smokeless tobacco. Compared to the nation and other U.S. states, alcohol use and abuse is the biggest substance-related problem that faces the state (Hughes et al., 2009; BRFSS, 2008). North Dakota has among the highest rates in the nation in recent alcohol use and binge drinking, regardless of age group. For example, among North Dakotans aged 12 to 20 years, 40.0 percent consumed alcohol in the past 30 days and 29.5 percent engaged in binge alcohol use in the past 30 days (Hughes et al., 2009). These figures rank North Dakota #1 (i.e., highest) on both indicators among all 50 states for this age cohort. North Dakota ranks near the bottom among U.S. states regarding the percentage of persons who perceive great harm associated with consuming five or more drinks at a time once or twice a week (Hughes et al., 2009). This finding assists in understanding why binge drinking rates are so high in North Dakota: many perceive little or no physical, mental, or societal harm associated with this behavior.

There is evidence that alcohol use and abuse is generational in North Dakota. Children and young adults are following the example of the state's adults who use and abuse alcohol at rates that are high relative to other states. North Dakota children and young adults, who are not of legal drinking age, engage in recent and binge alcohol use at elevated frequency (Hughes et al., 2009). Further, North Dakota students grades 9-12 are substantially more likely than their U.S. counterparts to have recently driven a vehicle after consuming alcohol (YRBS, 2009). Among DUI arrests in the state, persons aged 21-24 are the most frequent offenders; their arrest rate increases sharply from 2001 to 2006, but has decreased in the past two years (ND Office of the Attorney General, 2009).

North Dakota adults and children smoke cigarettes at rates that are comparable to the U.S. Smoking prevalence in North Dakota has steadily decreased over time. However, the state's American Indian adults smoke cigarettes at twice the prevalence of white adults (48.4 percent vs. 19.2 percent; BRFSS, 1999-2008). Smokeless tobacco use in North Dakota is notably higher than the U.S. for high school students (YRBS, 2009). Regarding recent use of any tobacco product, North Dakota young adults' (ages 18-25) prevalence is higher than the U.S. prevalence (Hughes et al., 2009).

Associated with illicit drug use, arrests in North Dakota have decreased by 7% from 2,323 in 2007 to 2,158 in 2008. In the past decade, 89% of drug arrests were for possession (versus sale or manufacture) and about three-quarters of drug arrests involved marijuana (ND OAG, 2009). Methamphetamines are also a problem in North Dakota, but to a lesser extent. In recent years, meth lab incidents have been drastically reduced (252 in 2003 to 27 in 2008) and meth possession arrests have been somewhat reduced in North Dakota.



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# Introduction

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North Dakota is named after the Dakota Indian Tribes who were the early inhabitants of the region. Dakota is most often referred to denote the terms, “friends” or “allies.” It is home to the International Peace Garden that straddles the border between the United States and Manitoba, Canada. North Dakota covers 68,976 square miles, with a 2005 estimated population of 636,677. About 340,372 persons live in rural areas (USDA-ERS, 2005).

North Dakota, a vastly rural and frontier state, has experienced substantial population losses. From 1990-2000, 47 of 53 counties lost population, with six counties losing over 20 percent and 20 counties experiencing a decline of 10-20 percent. All of the counties losing population were rural. Further, 48 of 53 counties experienced a decline in the youth cohort (17 years and younger). Five counties saw their youngest population group decline by 30 percent or more and 18 counties experienced a loss of 20-30 percent of this important age group.

North Dakota has a small population spread out over a large area. The state’s population density is 9.3 people per square mile; comparatively, the national density is 79.6 people per square mile. Thirty-six of the state’s 53 counties (68 percent) are designated as ‘frontier’, with six or fewer persons per square mile.

According to the 2002 Census, North Dakota has 373 incorporated communities. Fifty-one percent of these communities have 200 people or less. Bismarck, the capital, is located in the south-central region of the state. The state’s largest cities are Fargo, Bismarck, Grand Forks, and Minot. According to the U.S. Census (2006), 92.4 percent of the state’s population is white, 4.9 percent is American Indian, and 1.2 percent is of Hispanic/Latino origin. North Dakota is aging, as reflected by the increase in the state’s median age from 36.2 years in 2000 to 38.8 years in 2004. By comparison, the 2004 U.S. median age was 36.2 years. In 1960, North Dakota’s median age was 26.2 years. A majority (51 percent) of counties have more than 20 percent of their population base being age 65 or older (Gibbens, 2006).

Regarding health care, there are 45 hospitals in North Dakota, 39 of which are located in rural areas (North Carolina Rural Health Research/Policy Analysis Center, 2006). There are 59 Rural Health Clinics and four Federally Qualified Health Centers that provide services at 27 sites in the state (Kaiser, 2004). Most North Dakotans have some form of health insurance coverage, although 11 percent of its residents lack any health insurance (Kaiser, 2004).

According to the Economic Research Service (2005), the average per-capita income for all North Dakotans in 2004 was \$29,494, although rural per-capita income lagged at \$27,651. Estimates from 2003 indicate a poverty rate of 11.6 percent exists in rural North Dakota, compared to a 9.2 percent level in urban areas of the state. Data from 2000 indicate 19.7 percent of the rural population has not completed high school, while only 11.3 percent of the urban population lacks a high school diploma. The unemployment rate in rural North Dakota is at 4.0 percent, while in urban North Dakota it is at 2.9 percent (USDA-ERS, 2005).

## **RURAL CULTURE OF SUBSTANCE USE**

Studies have demonstrated that rural and frontier areas of the U.S. are prone to substance use and abuse. Are people living in rural areas more apt to abuse substances? Why do residents of rural/frontier states and regions abuse alcohol? Egan (2006) listed a number of possible reasons:

- Boredom;
- Stress;
- Anxiety;
- Depression;

- For use as a depressant and sleep aid;
- Genetic predisposition to and family history of substance abuse/addiction;
- Unemployment and underemployment;
- Poverty;
- Poor farm/ranch economy;
- Peer pressure;
- Research says it is good for your cardiovascular system;
- Feeling of isolation, especially in winter;
- The reward at the end of a hard day's work;
- Associated with happiness, relaxation, socializing, conformity, attractiveness, wealth, and youthfulness;
- A rite of passage ("What's the big deal? Kids just have to learn to drink.");
- A way for young people to prove themselves (use and binge);
- Getting validation by saying, 'Boy, did I get hammered';
- A way for adults (especially males) to prove themselves to their peers;
- The idea that life is harsh and you learn it at an early age is part of our history.

## THE STATE EPIDEMIOLOGICAL OUTCOMES WORKGROUP

The State Epidemiological Outcomes Workgroup (SEOW) was initiated in 2006 by the North Dakota Department of Human Services, Division of Mental Health and Substance Abuse Services. Funding for the project was provided by the Federal Substance Abuse and Mental Health Services Administration (SAMHSA). The mission of the North Dakota SEOW is to utilize relevant state, tribal, and local data to guide substance use prevention planning, programming and evaluation. The goals and functions of the North Dakota SEOW are delineated in its Charter (**Appendix A**). The North Dakota SEOW, guided by a 44-member advisory committee or workgroup (**Appendix B**), collects and analyzes data to support a framework for advancing the North Dakota Substance Use and Abuse Prevention System's mission. The data (**Appendix C**), summarized in this Epidemiological Profile, characterizes consumption patterns and consequences of various substances in the state of North Dakota. These substances include alcohol, tobacco, and other drugs such as methamphetamines, marijuana and prescription drugs. Data were collected and analyzed from the State Epidemiological Data System (SEDS) and supported with data from a variety of state agencies. The data used in this report are at the aggregate state level, with limited sub-state analyses. For more information on miscellaneous North Dakota sub-state documents and questionnaires, please refer to **Appendix D**.

Aggregate only analyses were used due to the wide availability of this information and the lack of this type of report ever having been developed for North Dakota. Thus, aggregate analyses seemed to be a logical starting point in this process of delineating the burden of substance consumption and consequences in the state. However, when data allowed, subgroup analyses were conducted by gender, age, race, and income level. Also, in some cases it was possible to compare North Dakota to surrounding states regarding substance use and consequences. Such comparisons are of interest to the SEOW to assist in determining whether data trends found in North Dakota are unique or are held in common with neighboring states.

# Methods

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The Core Workgroup for North Dakota's SEOW project includes personnel from the North Dakota Department of Human Services (NDDHS; Administration; Bismarck, ND), University of North Dakota Center for Rural Health (CRH; Epidemiology; Grand Forks, ND) and North Dakota State University (NDSU; Process Evaluator; Fargo, ND. The work on this project has been guided by feedback, comments, advice, and data assistance from the SEOW (**Appendix B**), which has representation from a variety of state government, tribal, university, and advocacy agencies.

The SEOW met monthly. The principal functions of the committee were to assist in identifying potential data sources, assess and prioritize the quality and appropriateness of various data sources and indicators, interpret and identify patterns and trends in substance use/consequence data, and general guidance for developing the state's Alcohol, Tobacco, and Other Drugs (ATOD) Epidemiology Profile.

The SEOW epidemiology team:

- Created a scoring/rating scheme for use by committee members for assessing the validity, reliability, appropriateness, utility, and quality of constructs and indicators. Specifically, questionnaires were used to have workgroup members assign scores ranging from 1 (low quality/appropriateness) to 3 (high quality/appropriateness) to each considered construct and indicator as individuals;
- Discussed and rated the constructs and indicators by breaking into smaller groups on the same scale as a subgroup. Following the subgroup discussion, items that received low scores were discussed in the large group. Also, items that were not included on the list and possible sources for the information were discussed and documented; and
- Collected and processed scores following the meeting and produced mean rating scores that were used to prioritize the items for inclusion or exclusion (**Appendices E and F**). Indicators with low mean rating scores (below 1.51) were omitted from consideration. Items with high ratings (2.5 and higher) were accepted for inclusion into the Epidemiological Profile, provided the data were available and accessible to the epidemiological team. Items with moderate ratings (1.51-2.49) were re-examined by the group for availability of data and whether the items clarified or provided information not otherwise available.

Data sources used in the ATOD Epidemiology Profile development included:

- Youth Risk Behavioral Survey (YRBS)
- Behavioral Risk Factor Surveillance System (BRFSS)
- National Survey on Drug Use and Health (NSDUH)
- North Dakota Core Alcohol and Drug Survey (NDCORE)
- CDC Wonder Query System
- North Dakota Division of Vital Records (NDDVR)
- North Dakota Division of Tobacco Prevention and Control (NDDTPC)
- North Dakota Office of Attorney General (Bureau of Criminal Investigation; NDBCI)
- North Dakota Division of Cancer Prevention and Control (NDDCPC)
- North Dakota Department of Transportation (NDDOT)
- Fatal Analysis Reporting System (FARS), National Center for Vital Statistics (NCVS)
- Treatment Episode Data Set (TEDS)
- North Dakota Department of Corrections and Rehabilitation (NDDOCR). (See detailed list in **Appendix B**.)

These data sets are excellent, sound sources of information on substance use and consequences in North Dakota. However, no data set is perfect and the state's data sources are no exception. For example, some of the key sources such as the Behavioral Risk Factor Surveillance System

(BRFSS) and the Youth Risk Behavior Survey (YRBS) rely on voluntary surveys of selected respondents. Thus, they are subject to survey response biases, which represent challenges for researchers to overcome. Also, many of the national survey efforts such as the BRFSS and the YRBS employ methodologies with the state that are not ideally suited for generating regional or county estimates. Thus, this is another reason for directing the majority of our Epidemiological Profile's analytic work and efforts toward aggregate state data. Other data sets have notable shortcomings that must be considered while seizing their positive aspects. For example, Treatment Episode Data Set (TEDS) data is a good source of substance-related treatment admissions for North Dakota; however, one must keep in mind this system does not collect data from all of the state's treatment facilities. In fact, private treatment providers are not obligated to report any of their patient or client information to TEDS. Crime data in North Dakota is a rich source of information of substance consequences but it is not without its limitations. The integrity of crime databases is dependent and reliant on crime reporting compliance among law enforcement agencies and personnel throughout the state. For more information on North Dakota's data shortcomings and possible solutions to these informational gaps, please refer to **Appendix G**.

After consumption/consequence items were prioritized, data were collected and presented to the workgroup graphically in Microsoft PowerPoint slide format at the monthly SEOW meetings. SEOW members gave feedback on grouping of figures and tables with data, format, and clarification in the presentation of data. The SEOW epidemiology staff made modifications and provided the updated material to the entire workgroup for review before submission of the draft report. This revised report version, utilizing all of the latest available substance-related data for North Dakota, was submitted to SAMHSA in March 2010.

# Alcohol Consumption in North Dakota

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Alcohol is the most commonly used substance in the United States (Hughes et al., 2009). Annually, approximately 100,000 deaths in the U.S. are attributed to alcohol misuse. In the United States, children and adolescents are more likely to drink alcohol than smoke tobacco or use illicit drugs (YRBS, 2007). Excessive alcohol consumption leads to many adverse health and social consequences and results in approximately 5,000 deaths among underage youth each year (NIAAA, 2006). Alcohol use among children decreases concentration, attention, and memory retention, which all affect academic achievement. It also impedes the healthy development of social, emotional, and physical skills which children need to develop self-confidence and self-esteem. Also, children who drink are at increased risk for a number of health and safety problems including traffic crashes and other unintentional injuries; alcohol/drug abuse and dependence; early sexual activity and pregnancy; changes in brain development; disruption of normal growth and sexual development; poor school performance and absenteeism; juvenile delinquency; stress, anxiety, depression, and suicide; unwanted and unprotected sexual activity; cirrhosis, hypertension, and cancer; and homicides and other violent crimes (Wright, 2002; CDC, 2006).

Many North Dakotans acknowledge that alcohol use and abuse are major problems in their communities (Hair et al, 2008). In a 2008 statewide survey on community perceptions of alcohol and other drugs, polled North Dakota community members characterized the following as being a “serious problem” in their communities: youth use of alcohol (41.3 percent); contribution of drug/alcohol use to crashes or injuries (34.7 percent); and adult use of alcohol (23.2 percent). Other key survey findings which alluded to community-level problems with alcohol included the following: 30.7 percent agreed-strongly agreed that underage drinking was tolerated; 40.1 percent indicated it was not at all difficult for youth to get an older person to buy alcohol for them; and 51.7 percent indicated it was not at all difficult for youth to sneak alcohol from their home or a friend's home (Hair et al., 2008).

## **AGE STARTED DRINKING**

The earlier that one begins drinking alcohol, the more likely one will become a heavy chronic user of alcohol (SAMHSA, 2006b). The Youth Risk Behavioral Survey (YRBS) calculates the percent of school-aged respondents who had their first drink before the age of 13 years. North Dakota's overall rate (19.8 percent) in 2009 was lower than the national rate (23.8 percent in 2007). From 1995 to 2007, the state's rate of early drinking has steadily declined over time, with males consistently being more likely than females to drink before age 13 (YRBS, 2009).

The CORE Alcohol and Drug Survey of North Dakota college students asked respondents when they first consumed alcohol. Results of the first CORE survey from 1994 were compared to results from surveys conducted in 2003-2005, 2006 and 2008. The majority (51-56 percent) of the respondents across all years indicated they had tried alcohol between the ages of 14 and 17 years. In comparing results from these survey periods, the main finding was that 2003-2005 respondents reported they were slightly younger than the 1994 respondents when they first tried alcohol (Walton, 2005; NDCORE, 2007; 2009).

## **DRINKING ON SCHOOL PROPERTY**

One of the YRBS's measures of alcohol consumption is the use of alcohol on high school property. North Dakota high school students (grades 9-12) who engage in this drinking behavior run the risk of school suspension, expulsion, and misdemeanor charges. Among North Dakota's high school students, 4.2 percent said they had consumed alcohol on school property on one or more occasions in 2009. This figure is comparable to the 2007 U.S. figure of 4.1 percent. During the period 1995-2007, North Dakota's figure has steadily declined over time from a high of 8.6 percent in 1995. North Dakota boys were much more likely than girls to drink on school property (YRBS, 2009).

## **ALCOHOL USE BY RACE**

Some studies have found that members of some ethnic/racial minority groups have alcohol consumption rates that are higher than White populations. In North Dakota, it is somewhat difficult to measure alcohol differences by ethnicity, given that few such studies have been conducted in North Dakota and the few standardized, statewide surveys (BRFSS, YRBS, NSDUH) administered in the state do not select a representative sample of non-White respondents. In North Dakota, the racial/ethnic breakdown is approximately 92 percent Whites, 5 percent American Indians, and 3 percent are of other races. Thus, the dominant minority group in North Dakota is American Indians. In 2004, the University of North Dakota Center for Health Promotion and Prevention Research (CHPPR) conducted a BRFSS-like survey of a randomly selected group of 100 American Indian respondents from each of the four main Indian Reservation areas (N=400) in North Dakota (Holm et al., 2004). The questionnaire included items that assessed alcohol use. Findings from this study indicated that American Indian sample members were less likely to be drinkers compared to the aggregate BRFSS sample of North Dakotans. But among drinkers, the American Indian sample was more likely to report heavy drinking than participants from the North Dakota sample.

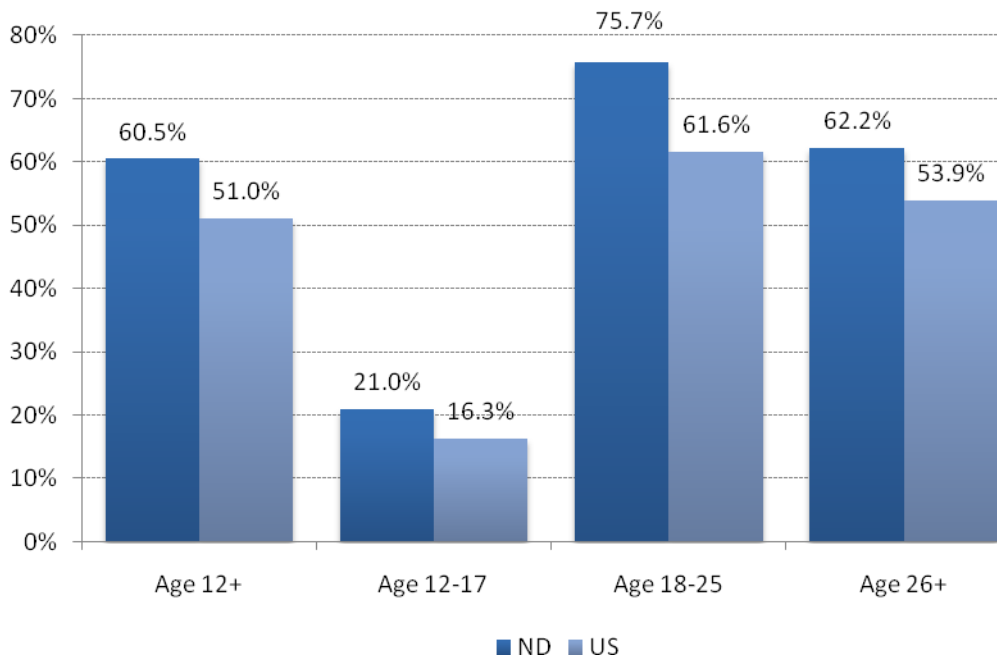
Another analysis of alcohol use by race was conducted using North Dakota's BRFSS combined data for years 1999-2008. Results indicated that, compared to Whites, American Indians were less likely to have recently consumed alcohol (52.2 percent vs. 64.7 percent), more likely to have recently binge alcohol (28.8 percent vs. 21.6 percent) and less likely to be heavy drinkers (4.5 percent vs. 5.1 percent).

## **RECENT ALCOHOL USE**

According to the YRBS, slightly less than one-half (43.3 percent) of North Dakota high school students (grades 9-12) in 2009 took one or more drinks of alcohol in the past month, a figure that is lower than the national prevalence rate of 44.7 percent. North Dakota's 2009 rate is 17 percentage points below the state's 1995 rate when 60.7 percent of students had recently consumed alcohol. Boys in North Dakota were generally more likely than girls to have consumed alcohol in the past month. The rates for both girls and boys have declined steadily over time (YRBS, 2009).

The National Survey of Drug Use and Health (Hughes et al., 2009) found that 60.5 percent of North Dakotans aged 12 and older had one or more drinks of alcohol in the past month (**Figure 1**).

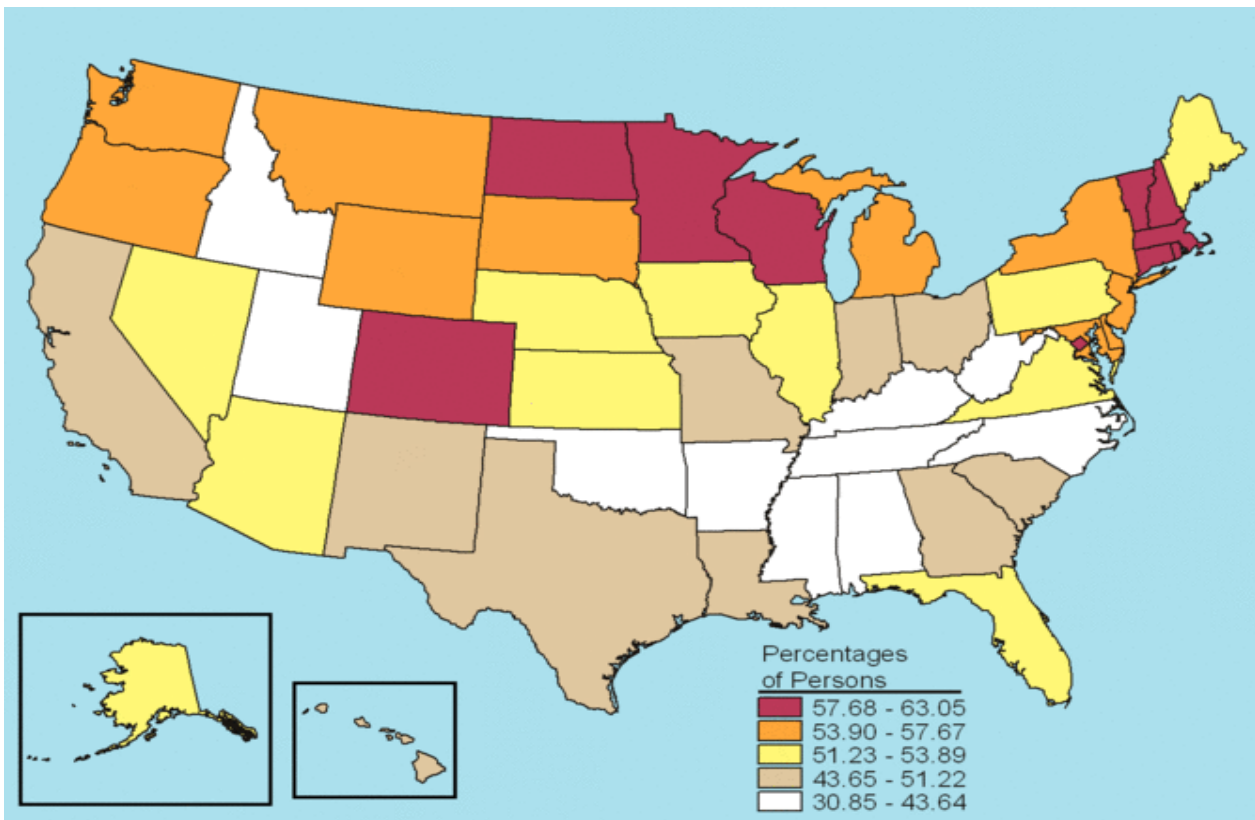
**Figure 1: Alcohol Use in Past Month, North Dakota and United States, by Age, 2006-2007**



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2006 and 2007

This is substantially higher than the U.S. rate of 51.0 percent. North Dakota's 'recent alcohol usage' prevalence for persons aged 12 and older puts it in the upper one-fifth of all states for this drinking behavior (**Figure 2**; Hughes et al., 2009).

**Figure 2: Alcohol Use in Past Month, Ages 12+, 2006-2007**



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2006 and 2007

Among North Dakotans aged 12-17 years, one-fifth (21.0 percent) used alcohol in the past month (**Figure 1**). This figure reflects a slight increase from 19.6 percent for the previous NSDUH survey period (i.e., 2005-2006). Nationally, 16.3 percent of this age cohort indicated they had used alcohol within the past month in 2006-2007. North Dakota is in the top 20 percent of all states for using alcohol in the past month among ages 12-17 (Hughes et al., 2009).

Among persons aged 12-20 years, North Dakota (40.4 percent) is ranked number one nationally in alcohol use in the past month. Among our neighboring states, South Dakota (31.0 percent) and Montana (31.6 percent) are on the top-fifteen list of highest percentages. Utah (17.3 percent) had the lowest rate of recent alcohol use among persons aged 12-20 (Hughes et al., 2009).

The NSDUH (Hughes et al., 2009) reported that North Dakotans aged 18-25 years were most likely (75.7 percent) of any age cohort to have used alcohol during the past month, which is far higher than the national rate of 61.6 percent. North Dakota's prevalence, rising slightly from 73.4 percent in the previous NSDUH survey period, remains in the top 20 percent of all U.S. states for recent alcohol use among persons 18-25 years. About two-thirds (62.2 percent) of North Dakotans aged 26 years and older had used alcohol in the past month in 2006-2007, up from 59.9 percent in 2005-2006 (Hughes et al., 2009). The national estimate was substantially lower at 53.9 percent of this age group. North Dakota was in the highest quintile grouping of U.S. states for recent alcohol use among persons aged 26 and older, along with the neighboring states of Minnesota and Wisconsin (NDSUH, 2009).

The Behavioral Risk Factor Surveillance System (BRFSS) is another statewide survey effort that generates information on alcohol use. Among North Dakotans aged 18 years and older, 57.8 percent indicated using alcohol in the past month in 2008 (**Table 1**).



**Table 1: Percent of Recent, Heavy, and Binge Alcohol Use  
Among Adults Ages 18+, North Dakota  
and the United States, 2003-2008**

		Recent		Heavy		Binge	
		ND	US	ND	US	ND	US
2008	Overall	57.8	54.5	5.1	5.1	21.6	15.6
	Male	65.1	61.3	5.6	5.6	29.2	21.0
	Female	50.6	47.7	4.4	4.4	14.1	10.0
2007	Overall	62.0	55.8	5.0	5.2	23.2	15.8
	Male	68.9	62.0	6.1	6.1	30.2	21.2
	Female	55.3	47.9	3.9	4.0	16.5	10.1
2006	Overall	59.0	55.4	4.4	4.9	21.2	15.4
	Male	65.8	62.1	5.0	5.6	28.8	20.4
	Female	52.5	49.0	3.9	4.4	13.9	10.1
2005	Overall	59.6	56.2	5.0	4.9	18.9	14.4
	Male	67.6	63.5	6.5	5.6	27.7	22.0
	Female	51.6	49.0	3.5	4.0	10.2	7.4
2004	Overall	62.5	57.1	5.1	4.9	20.5	15.1
	Male	70.8	64.7	6.3	5.8	30.2	23.1
	Female	54.4	50.1	4.0	4.2	11.0	7.8
2003	Overall	65.2	59.4	5.8	5.8	21.5	16.5
	Male	74.5	66.9	7.9	6.9	32.6	25.1
	Female	56.1	51.7	3.7	4.6	10.4	8.6

Source: BRFSS, 2003-2008

This figure is higher than the U.S. prevalence of 54.5 percent for the same year. The state's recent alcohol use prevalence has steadily declined from 65.2 percent in 2003. The BRFSS categorized states into five groupings according to their percent of persons 18 and older that used alcohol in the past month. North Dakota's figure of 57.8 percent placed it in the second-highest group, along with neighboring states South Dakota and Montana (BRFSS, 2009).

In 2008, about two-thirds (65.1 percent) of adult males and one-half (50.6 percent) of adult females in North Dakota indicated they had used alcohol in the past month (**Table 1**). Among males, recent alcohol use declined from 74.5 percent in 2003 to 65.1 percent in 2008. For women, recent alcohol use declined from 56.1 percent in 2003 to 50.6 percent in 2008 (BRFSS, 2009).

The percent of recent alcohol use among North Dakota men was higher than the US percent for males for each year from 2003 to 2008 (**Table 1**). Similarly, women in North Dakota are consistently more likely than their U.S. female counterparts to have consumed alcohol in the past month (**Table 1**) (BRFSS, 2009).

North Dakotans were more likely than their U.S. counterparts to have consumed alcohol in the past month across all age cohorts (**Table 2**). Among North Dakotans, persons 65 and older were least likely (40.0 percent) to have recently drank alcohol. Persons aged 25 through 44 were most likely (66-69 percent) to have consumed alcohol in the past month. Beginning at age 55, the prevalence rate of recent alcohol use began to decline (BRFSS, 2009).

The percent of North Dakotans' recent alcohol use increases incrementally with a corresponding rise in annual income level (**Table 2**). Seventy-one percent of the wealthiest (i.e., earning \$50,000 or more per year) and 32.8 percent of the poorest (i.e., earning less than \$15,000 per year) group indicated they had used alcohol in the past month. Compared to the U.S., North Dakotans had higher rates of recent alcohol use across all income levels with the exception of those earning less than \$15,000 where prevalence figures were equivalent (BRFSS, 2009).

## HEAVY ALCOHOL USE

The BRFSS defines "heavy alcohol use" as consuming more than one alcoholic beverage a day for women and more than two alcoholic beverages per day for men. Among North Dakota adults, 5.1 percent were classified as heavy drinkers in 2008. This rate has declined over time from a high of 5.8 percent in 2003 (**Table 1**). The state's rate of heavy alcohol use was roughly equivalent to the U.S. rate in 2003-2005 and 2007-2008, but dropped below the U.S. rate in 2006 (BRFSS, 2009). From 2007 to 2008, heavy drinking prevalence slightly declined among North Dakota men and slightly increased for North Dakota women (BRFSS, 2009).

The BRFSS provides information that allows for state-to-state comparisons and rankings across many health risk factors, including heavy alcohol use. North Dakota's 2007 figure of 5.1 percent was 25<sup>th</sup> highest among U.S. states and DC. Among neighboring states, North Dakota's prevalence was higher than South Dakota's and Minnesota's prevalence and lower than Montana's prevalence. In North Dakota, men (5.6%) were more likely than women (4.4%) to be heavy alcohol users (**Table 1**).

North Dakota men's heavy drinking prevalence was identical to U.S. men in 2008 (**Table 1**; BRFSS, 2009). North Dakota women's prevalence of heavy alcohol use has been below or slightly below the U.S. women's prevalence for every year within the period 2003-2007 but was identical in 2008 (**Table 1**). North Dakotans aged 18-24 years (10.8 percent) and 35-44 years (5.3 percent) were most likely to be heavy consumers of alcohol in 2008 (**Table 2**). Heavy use tends to decline with age, as only 2.3 percent of persons aged 65 and older indicated heavy use. Compared to the U.S., North Dakotans had higher prevalence of heavy drinking for ages 18-24 years and lower or equivalent rates for ages 25 years and older. Lower-earning (i.e., less than \$25,000 per year) North Dakotans were most likely (6 to 7 percent) to drink heavily and highest-earning (i.e., \$50,000 or more per year) residents were least likely (5.2 percent) to drink heavily (**Table 2**). Compared to the U.S., North Dakotans had higher prevalence among poorer income categories and lower prevalence among higher income categories (BRFSS, 2009).

The North Dakota CORE Alcohol and Drug Survey asked North Dakota's colleges students about the average number of alcoholic beverages they consume per week. Results were compared between the three time periods (1994, 2003-2005, 2006 and 2008) in which it was administered in the state. Compared to 1994, students in 2003-2005 were more likely to report consuming alcohol in higher quantities. Specifically, 40.4 percent in 2003-2005 reported having six or more alcoholic beverages per week as compared to 23.5 percent in 1994 (Walton, 2005). In 2008, this figure dropped to 30.0 percent (NDCORE, 2007; 2009).

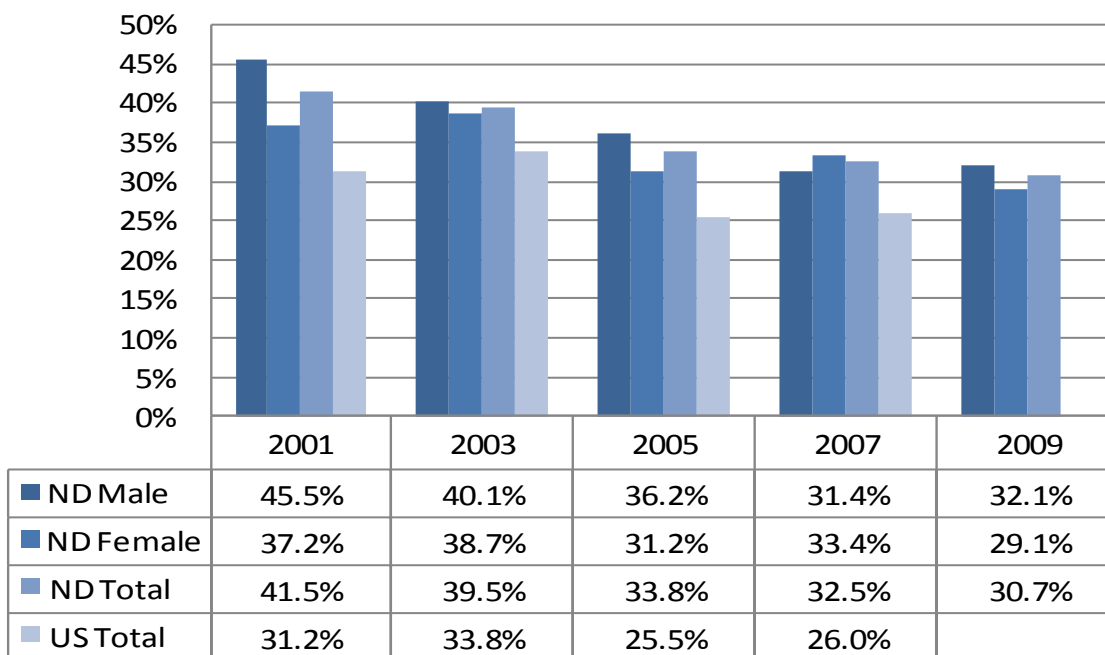
**Table 2: Percent of Recent, Heavy, and Binge Alcohol Use Among Adults Ages 18+, by Gender, Age, and Income, North Dakota and United States, 2008**

	Recent		Heavy		Binge	
	ND	US	ND	US	ND	US
Overall	57.8	54.5	5.1	5.1	21.6	15.6
Gender						
Male	65.1	61.3	5.6	5.6	29.2	21.0
Female	50.6	47.7	4.4	4.4	14.1	10.0
Age						
18-24	47.7	49.9	10.8	7.3	33.6	24.7
25-34	68.5	60.5	4.4	5.5	33.9	23.8
35-44	66.3	60.5	5.3	5.2	29.4	18.1
45-54	67.4	58.5	4.3	5.7	19.7	14.2
55-64	59.3	53.5	4.1	4.6	11.5	8.6
65+	40.0	40.7	2.3	3.0	4.5	3.2
Income (thousand)						
<\$15	32.8	32.4	6.0	4.1	15.8	10.9
\$15-24	47.1	39.2	6.8	4.4	21.5	12.9
\$25-34	55.8	47.3	3.9	5.2	19.8	12.9
\$35-49	57.0	53.3	5.2	5.2	22.0	16.1
\$50+	70.9	66.6	5.0	5.7	25.6	17.8

## BINGE ALCOHOL USE

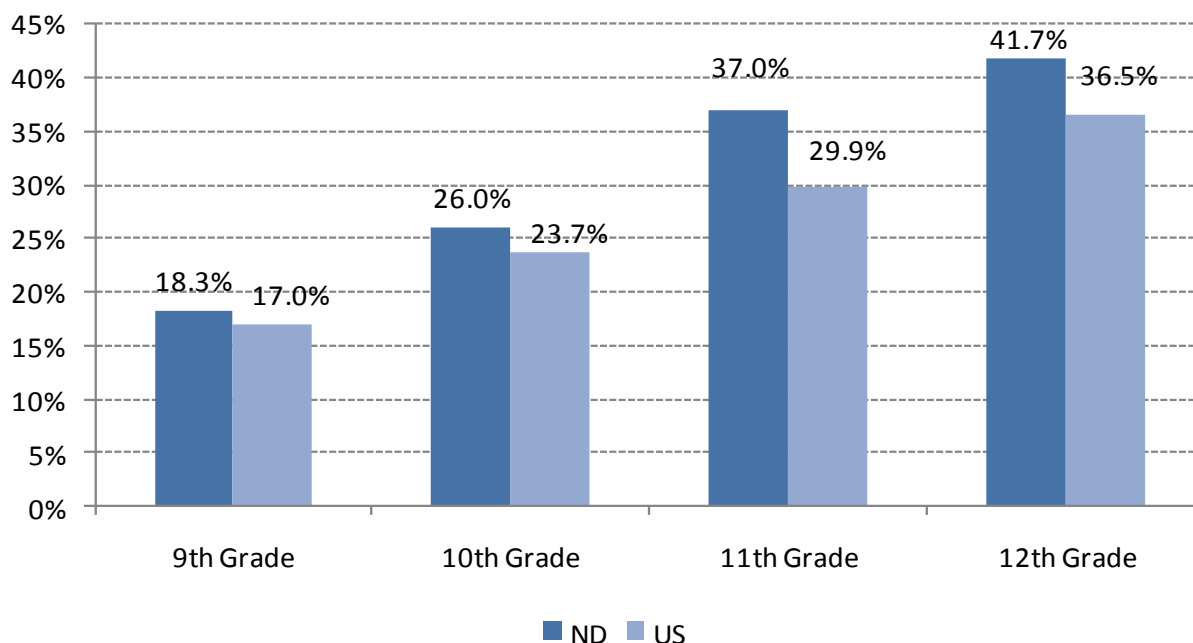
Binge alcohol use is defined by the YRBS as having five or more drinks of alcohol in a row on one or more of the past 30 days. One-third (30.7 percent) of North Dakota high school students (grades 9-12) were binge drinkers in 2009, compared to one-quarter (26.0 percent) of similarly-aged U.S. high school students in 2007 (**Figure 3**; YRBS, 2009). North Dakota's high school binge drinking rate has declined sharply over time from its high of 46.2 percent in 1999. Boys were more likely than girls to engage in this drinking behavior across all surveyed years (YRBS, 2009). From 2007 to 2009, the state's overall prevalence decreased slightly; males' prevalence increased slightly and females' prevalence increased.

**Figure 3: Binge Alcohol Use, by Gender, North Dakota and United States, Students Grades 9-12**



As North Dakota students (grades 9-12) advanced to higher grades, they were more likely to have engaged in binge alcohol use (**Figure 4**). North Dakota's recent binge drinking prevalence was higher than the U.S. prevalence rate for each grade. From 2007 to 2009, North Dakota's recent binge drinking prevalence decreased among 9<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> graders, but increased among 11<sup>th</sup> graders (YRBS, 2009).

**Figure 4: Binge Alcohol Use by Grade, North Dakota (2009) and United States (2007), Students Grades 9-12**



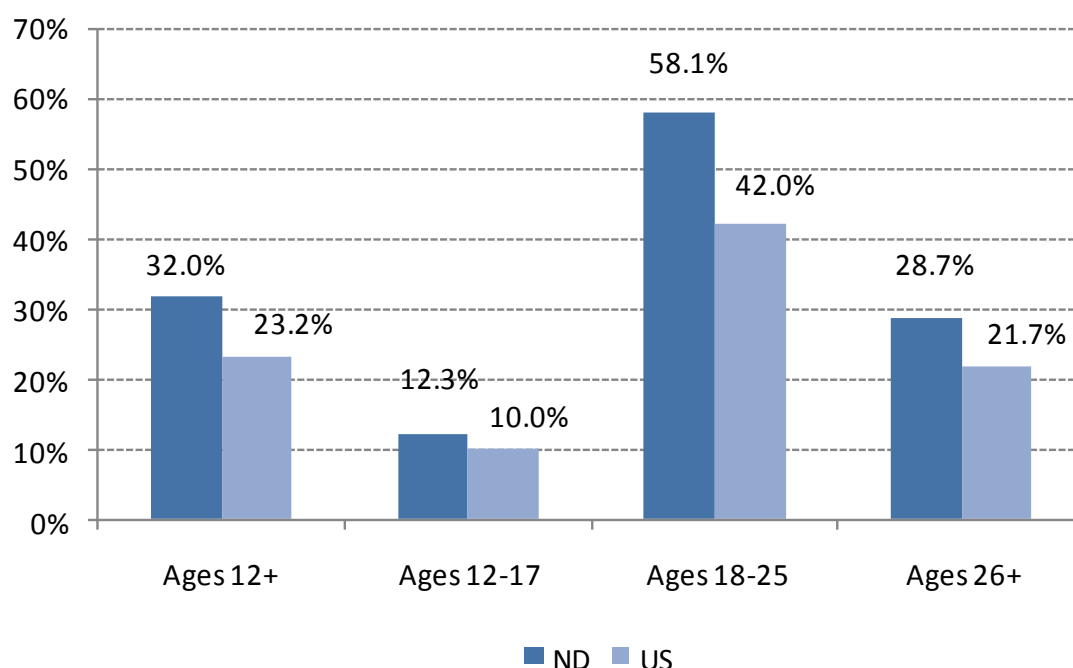
Source: Youth Risk Behavioral Surveillance Survey

\*5+ drinks of alcohol in a row on 1+ of the past 30 days

The NSDUH (Hughes et al., 2009) estimated that one-third (32.0 percent) of North Dakotans aged 12 years and older had binge alcohol on one or more of the past 30 days (**Figure 5**). This figure is substantially higher than the national prevalence of 23.2 percent. Among U.S. states, North Dakota ranked number one in binge drinking among persons aged 12 years and older. All of North Dakota's neighboring states (Minnesota, South Dakota, and Montana) were in the top 10 of alcohol bingeing states for this age group, suggesting this drinking behavior is a regional phenomenon.

Among persons aged 12 to 17 years, 12.3 percent of North Dakotans and 10.0 percent of U.S. residents indicated binge drinking in the survey years of 2006 and 2007 (**Figure 5**). Compared to the previous NSDUH survey period, binge drinking prevalence decreased slightly from 12.7 percent for this age cohort. North Dakota, along with other upper Midwestern states, was in the top 10 percent of U.S. states for binge drinkers aged 12 to 17 years (Hughes et al., 2009). Among persons aged 18 to 25 years, 58.1 percent of North Dakotans (up from 56.5 percent in 2005-2006) and 42.0 percent of U.S. residents indicated they had engaged in binge drinking on one or more of the past 30 days. Compared to all U.S. states, North Dakota ranked at the top for binge drinking among ages 18-25 years.

**Figure 5: Binge Alcohol Use in Past Month, North Dakota and United States, by Age Group, 2006-2007**



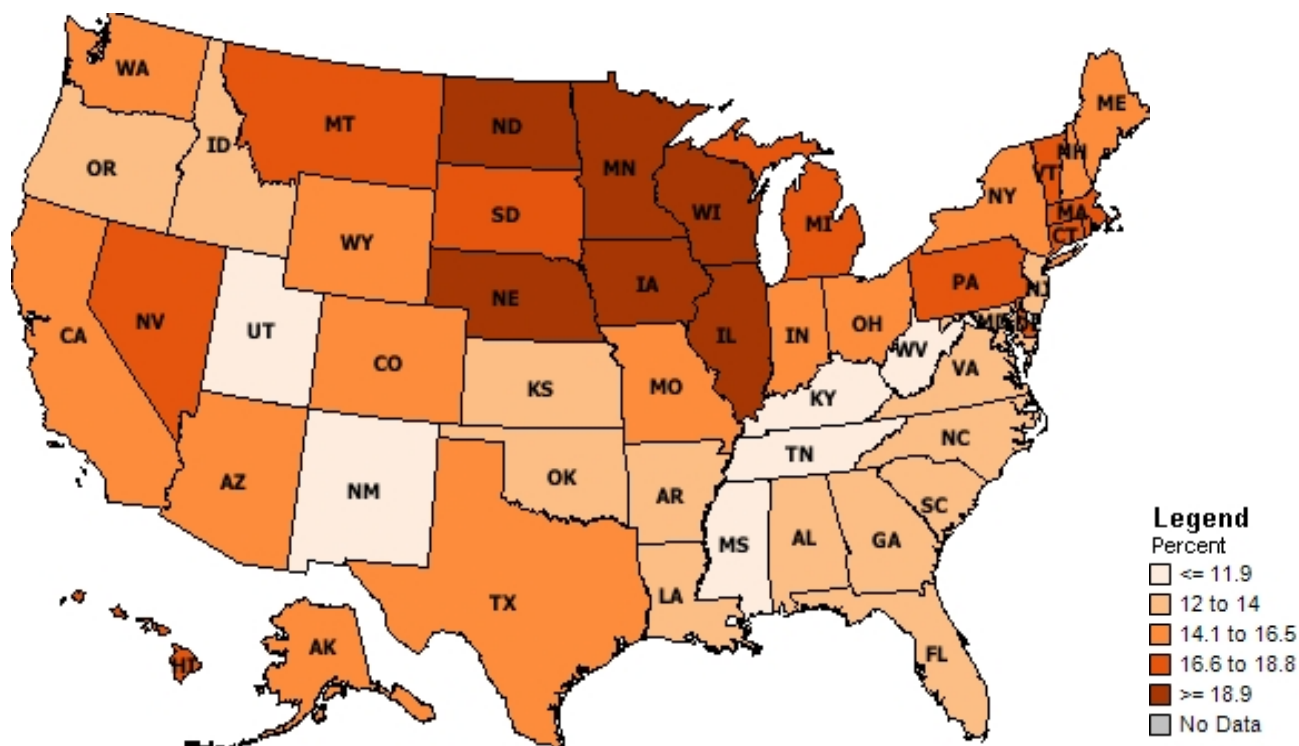
Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2006 and 2007. NOTE: Binge Alcohol Use is defined as drinking five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.

According to the NSDUH (Hughes et al., 2009), 28.7 percent of North Dakotans aged 26 years or older engaged in binge drinking on one or more of the past 30 days. Comparatively, 21.7 percent of similarly-aged U.S. residents binged alcohol within this time (**Figure 5**). North Dakota's binge drinking prevalence was highest among all U.S. states for persons aged 26 years and older (Hughes et al., 2009). For persons aged 12 to 20 years, North Dakota is also ranked number one among U.S. states with 29.5 percent indicating binge drinking behavior within the past month (Hughes et al., 2009). The neighboring states of Montana (24.0 percent) and South Dakota (22.2 percent) are ranked sixth- and eleventh-highest, respectively. Utah (13.3 percent) is lowest among all states.

The Behavioral Risk Factor Surveillance System (BRFSS) assesses the extent of binge drinking among adults aged 18 years and older. North Dakota's binge drinking prevalence has steadily declined from 22.3 percent in 2001 to 18.9 percent in 2005, but rose to 21.2 percent in 2006 and 23.2 percent in 2007. The most recent prevalence estimate for North Dakota, derived from 2008 data, is 21.6 percent, indicating a slight decrease from the previous year. Over these past six years, the state's prevalence has consistently been above the national average (BRFSS, 2009). North Dakota's prevalence was ranked second-highest among U.S. states, just below Wisconsin's 22.8 percent prevalence for recent binge drinking (BRFSS, 2009) (**Figure 6**).

North Dakota men were two times more likely than women to engage in binge drinking behavior (**Table 1**). Binging among men decreased from 33.7 percent in 2002 to 27.7 percent in 2005, then increased to 30.3 percent in 2007 and 29.2 percent in 2008. For women, binge alcohol use remained stable from 2001-2005 at approximately 10-11 percent, but increased to 13.9 percent in 2006 and 16.5 percent in 2007; in 2008, the prevalence decreased to 14.1 percent (BRFSS, 2009). Females' binge drinking prevalence increase may be explained in part by the CDC modifying the definition of binge drinking for women from "5 or more drinks in a row" to "4 or more drinks in a row" in 2006.

**Figure 6: Binge Alcohol Use, Ages 18+, 2008 (Source: BRFSS)**



Over the past six years, binge alcohol use among North Dakota males has consistently been higher than the U.S. rate for similarly-aged men (**Table 1**). Over this time period, the North Dakota males' rate has ranged from 28-33 percent, whereas the U.S. males' rate has ranged from 20-25 percent. The alcohol binge prevalence for North Dakota women, despite being substantially lower than North Dakota men's prevalence, is consistently higher than figures for U.S. women (**Table 1**). Typically, about 10-17 percent of North Dakota women and 7-10 percent of U.S. women indicate they have engaged binge alcohol use (BRFSS, 2009).

Binge drinking in North Dakota, similar to the nation as a whole, is predominantly a behavioral pattern that afflicts younger, rather than older, adults. North Dakotans aged 18 to 34 years were the most likely of all age cohorts to binge drink, as about one-third indicated engaging in this behavior in 2008 (**Table 2**). Compared to the U.S., North Dakotans were more likely to engage in binge alcohol use across all age groups. North Dakotans earning \$50,000 or more per year were most likely (25.6 percent) to engage in binge drinking (**Table 2**). Compared to the U.S. rates, North Dakotans had higher prevalence of binge drinking across all income categories (BRFSS, 2009).

The North Dakota CORE survey assessed the extent of binge drinking among the state's college students. Results were compared between the four time periods (1994, 2003-2005, 2006 and 2008) in which the survey was administered. Compared to the 1994 figures, North Dakota college students in 2003-5 reported higher percentages of binge drinking behavior and higher percentages of repeated alcohol binging within the past two weeks. Over this time period, the rate of persons reporting one or more alcohol binges within the past two weeks increased from 44.1 percent to 54.8 percent. Also, the rate of persons reporting three or more alcohol binges in the past two weeks increased from 15.4 percent to 25.9 percent (Walton, 2005). These figures declined to 52.7 percent (2006) and 50.5 percent (2008) indicating one or more alcohol binge episodes and 23.5 percent (2006) and 20.0 percent (2008) indicating three or more alcohol binge episodes in the past two weeks (NDCORE, 2007; 2009).

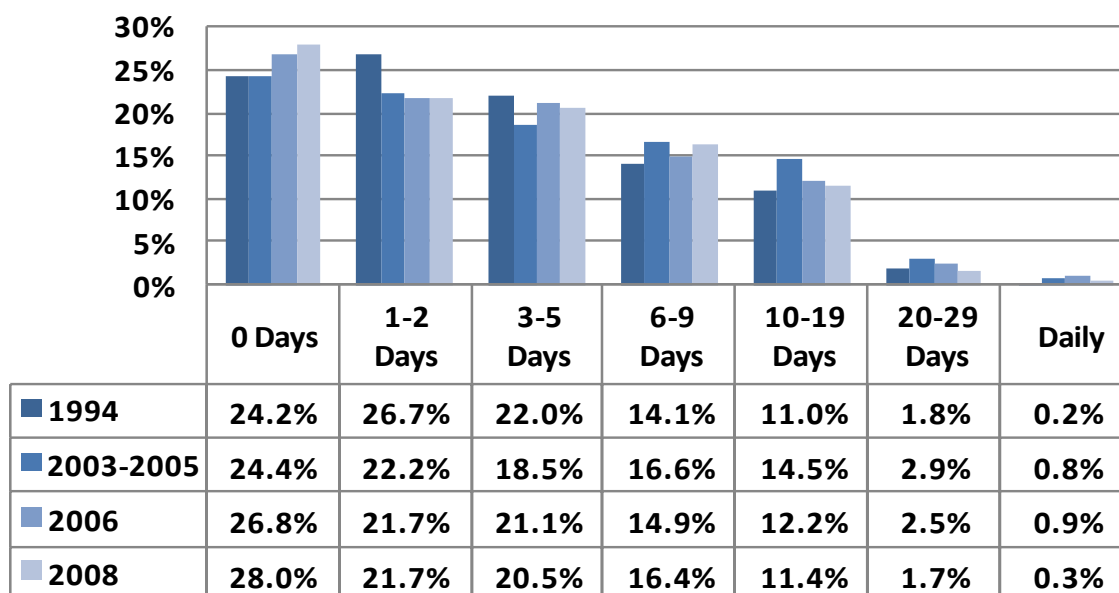
## **ATTITUDES TOWARD BINGE DRINKING**

The National Survey of Drug Use and Health (NSDUH, 2008) polled respondents about whether they agreed that having five or more alcoholic beverages once or twice a week posed a "great risk" to one's health. Across all U.S. states, the percent agreeing to this statement varied across age cohorts and ranged from approximately 33 to 37 percent. North Dakotans were found to agree with great health risks to binge drinking at very low levels relative to other states. In fact, North Dakota was in the lowest 20 percent of states for age groups of 12 years and older, 12 to 17 years, 18 to 25 years, and 26 years and older (Hughes et al., 2009).

The North Dakota CORE Alcohol and Drug Survey queried North Dakota college students about the 30-day frequency of alcohol consumption. CORE survey results were compared between the four time periods (1994, 2003-2005, 2006 and 2008) in which it was administered in North Dakota. Responses ranged from zero days in a month to everyday in a month. Compared to the 1994 findings, the major noted difference in 2003-2005 was a substantial increase in the percent of college students stating they drank six or more days per month (27.1 percent versus 34.8 percent). However, 2006 and 2008 figures reflected a decrease to 30.5 percent and 29.8 percent, respectively. Other recent decreases in alcohol use were noted. For drinking 6-9 days a month, rates dropped from 16.6 percent in 2003-2005 to 14.9 percent and 16.4 percent in 2006 and 2008. For those drinking 10-19 days a month, rates decreased from 14.5 percent in 2003-2005 to 12.2 percent in 2006 to 11.4 percent in 2008 (**Figure 7**) (Walton, 2005; NDCORE, 2009).



**Figure 7: 30-Day Frequency of Alcohol Consumption among North Dakota College Students, 1994, 2003-2005, 2006 and 2008**



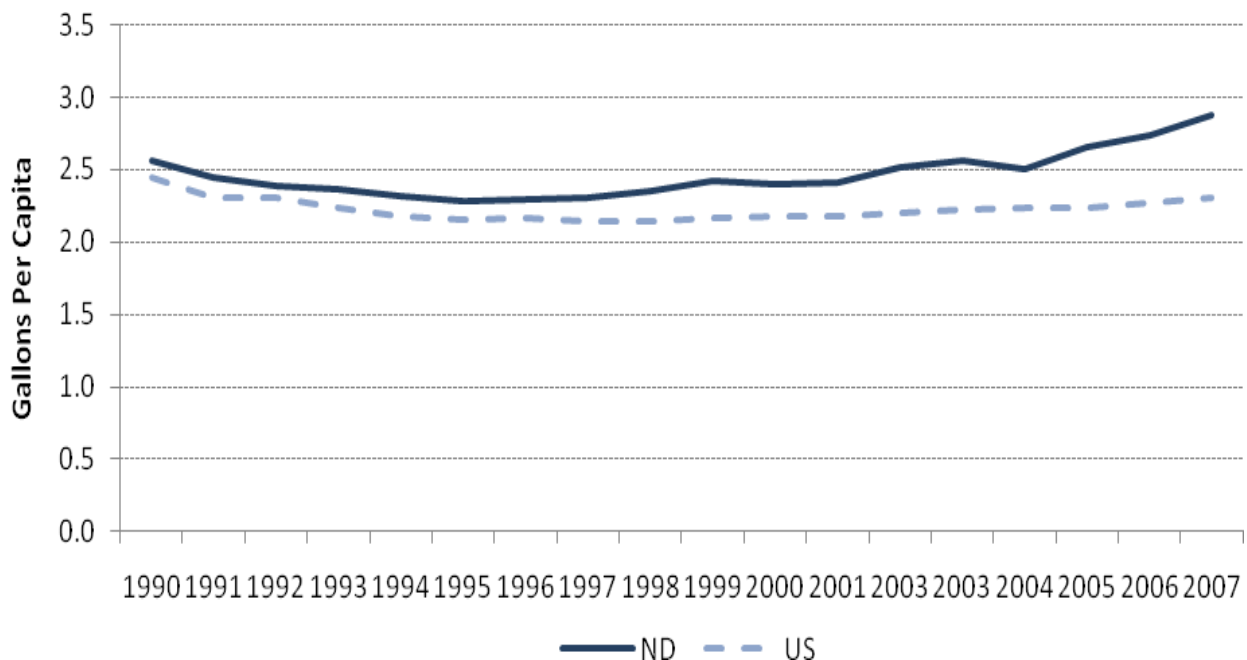
Source: ND CORE Survey

The North Dakota CORE survey asked college student students about their annual drinking behavior. Results from 1994 were compared to 2003-2005, 2006 and 2008. Over this time period, the most significant finding was an increase in the percent of students stating they drank at higher frequencies of occurrence. The percent of students who drank alcohol one or more times each week in the past year increased from 38.3 percent in 1994 to 48.1 percent in 2003-2005 (Walton, 2005). This figure declined slightly to 46.5 percent in 2006 to 44.1 percent in 2008 (NDCORE, 2007; 2009).

## ALCOHOL SALES

Alcohol sales are a well-known measure of alcohol consumption. In 2007, North Dakotans purchased and consumed 1.53 million gallons of ethanol. Alcohol purchases have steadily increased since 1994, when only 1.2 million gallons were purchased and consumed (NIAAA, 2009). By type of alcohol purchased, beer is the leading product in North Dakota with 829,000 ethanol gallons purchased in 2007. Beer gallons sold have also steadily increased over time as only 700,000 ethanol gallons were sold in 1993. Spirits are the second-leading alcohol consumption category, with 573,000 ethanol gallons being purchased in North Dakota in 2007. Lastly, wine totaled 124,000 ethanol gallons purchased in 2007. Compared to the U.S., North Dakotans purchase higher volumes of alcohol per person. In 2006, North Dakotans consumed 2.9 gallons per person (aged 14 or older), compared to 2.3 gallons per person for the U.S. (**Figure 8**; NIAAA, 2009).

**Figure 8: Per Capita Alcohol Consumption,  
North Dakota and United States, 1990-2007**

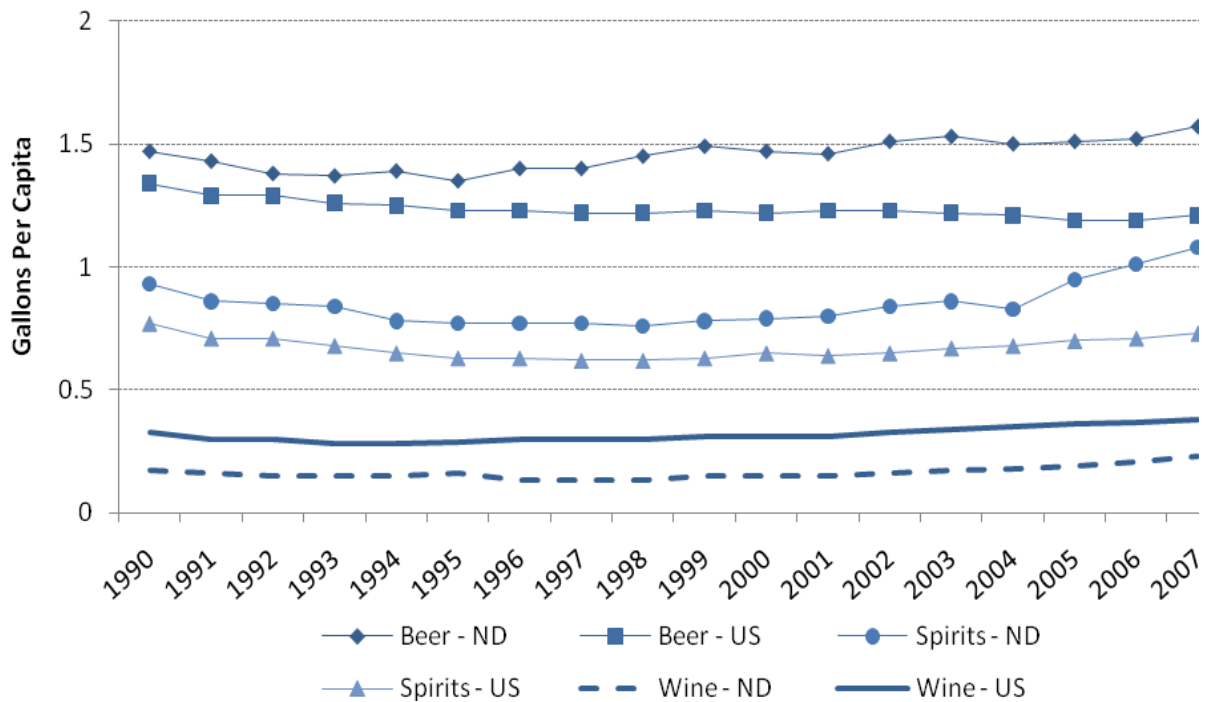


Source: National Institute on Alcohol Abuse and Alcoholism (NIAAA)

\*For population ages 14 and older.

North Dakota is at the 80-90th percentile among U.S. states for alcohol sales (NIAAA, 2009). Per capita alcohol sales by alcohol type indicate that North Dakotans consume beer and spirits at higher rates than the U.S., but lower rates for wine (**Figure 9**). In 2007, it was estimated that each North Dakotan aged 14 and older consumed an average of 1.6 gallons of beer ethanol, 1.1 gallons of spirits ethanol, and 0.2 gallons of wine ethanol (NIAAA, 2009).

**Figure 9: Per Capita Alcohol Sales by Beverage Type, North Dakota**



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

\*For population aged 14 and older

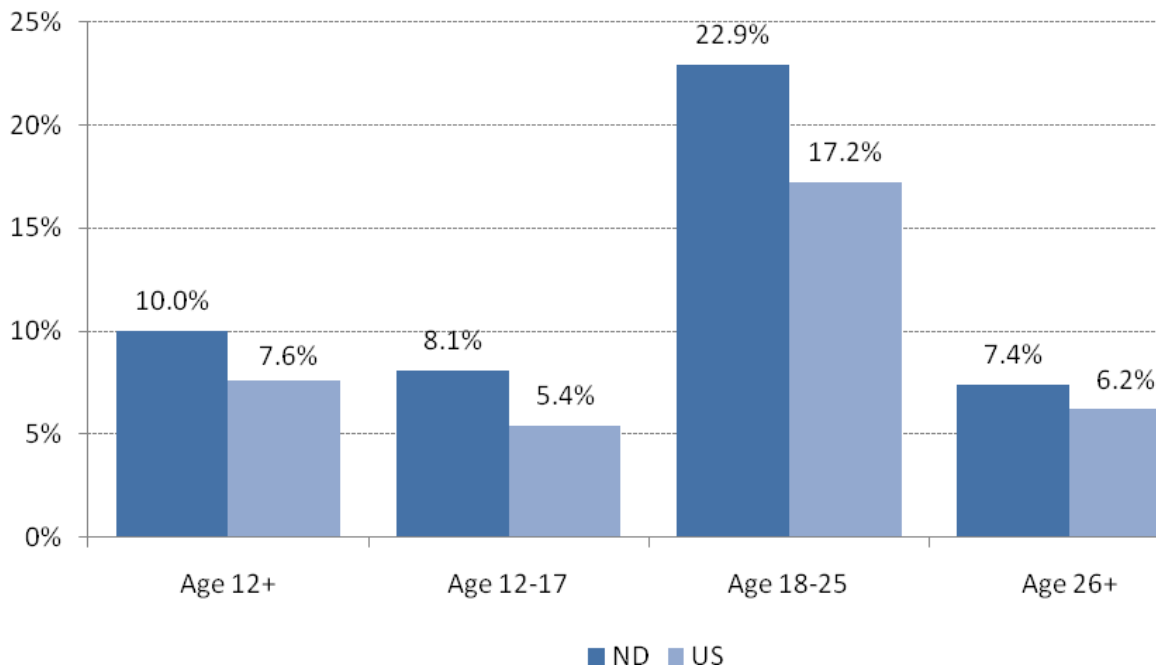
# Alcohol Consequences in North Dakota

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## ALCOHOL ABUSE OR DEPENDENCE IN THE PAST YEAR

The NSDUH (2008) assessed the extent to which U.S. and state residents aged 12 and older were dependent on or had abused alcohol in the past year. The survey questions that addressed these issues were based on the substance dependence/abuse definitions found in the Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> Edition (DSM-IV). The survey items on dependence address various issues such as health and emotional problems, attempts to reduce alcohol use, alcohol tolerance, alcohol withdrawal, and other symptoms. The survey items on abuse address problems with home, family, friends, work, physical danger, and contact with the law due to alcohol use. Dependence reflects a more severe alcohol problem than abuse, and persons can be classified as abusing alcohol only if they are not defined as being alcohol dependent. According to the Hughes et al. (2009), North Dakotans were either dependent on or abused alcohol in the past year at the following rates by age cohort: 12 and older – 10.0 percent; 12-17 years – 8.1 percent; 18-25 years – 22.9 percent; and 26 years or older – 7.4 percent. North Dakota was in the top 20 percent of all U.S. states for alcohol dependence or abuse for each of these age cohorts. North Dakota was in the second-highest quintile grouping for persons aged 26 and older (**Figure 10**). Since the previous NSDUH survey (i.e., 2005-2006), slight increases occurred for persons aged 12+ and 26+ and decreases were noted for persons ages 12-25 years.

**Figure 10: Alcohol Dependence or Abuse in Past Year, North Dakota  
and United States, by Age, 2006-2007**



Source: Hughes et al. 2009.

\*'Dependence' and 'abuse' defined by the Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> Edition

The OAS (2007) assessed the extent to which U.S. residents were dependent (note: based on DSM-IV criteria) on alcohol within the past year. States were categorized into five groupings based on the magnitude of their rate of alcohol dependence across the age cohorts of 12 years or older, 12-17 years, 18-25 years and 26 years or older. North Dakotans aged 12 and older were categorized in the second-highest grouping (prevalence range: 3.5-3.9 percent) for alcohol dependence. Also, North Dakotans aged 12-17 years were categorized in the second-highest grouping (prevalence rates of 2.1-2.3 percent) for alcohol dependence. North Dakotans aged 18-25 years also had a high prevalence of alcohol dependence in the past year and were subsequently classified in the second-highest group (dependence prevalence range: 7.7-8.3 percent) of U.S. states. Finally, North Dakotans aged 26 years and older were categorized in the fourth-highest grouping of U.S. states, which had prevalence figures ranging from 2.6 to 2.8 percent (Hughes et al., 2009).

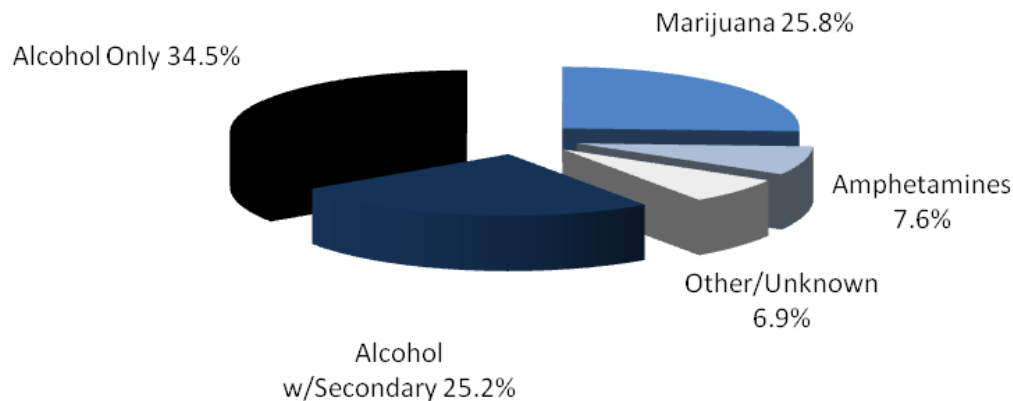
## **NEEDING BUT NOT RECEIVING TREATMENT**

The National Survey on Drug Use and Health (2008) assessed the percent of U.S. state residents that needed but did not receive treatment for alcohol use. This group was delineated through the use of a question that asked whether the respondent had received treatment for their alcohol use in the past year. North Dakotans were in the top 20 percent of all U.S. states for needing but not receiving alcohol treatment in the past year in all age groups under study. North Dakota's age cohorts and their corresponding prevalence ranges are as follows: 12 years and older (8.7-9.7 percent); 12-17 years (6.2-7.7 percent); 18-25 years (19.9-22.5 percent); and 26 years and older (6.8-8.3 percent) (Hughes et al., 2009).

## **TREATMENT FOR ALCOHOL DEPENDENCE AND ABUSE**

A consequence of alcohol consumption is becoming dependent and having to receive professional treatment. TEDS contains information on substance treatment admissions for persons who are eligible for and receive benefits from SAMHSA's Substance Abuse Prevention and Treatment (SAPT) Block Grant. TEDS does not contain information on persons who receive substance abuse treatment in private agencies or facilities. In 2008, 59.7 percent of North Dakota substance abuse admissions were related to alcohol (**Figure 11**).

**Figure 11: North Dakota Substance Abuse Treatment,  
by Primary Substance 2008**



Source: Treatment Episode Data Set

\*Total outpatient admissions=2,461

Of this figure, 34.5 percent were for alcohol only and 25.2 percent were for alcohol with a secondary drug. Males comprised 64.9 percent of alcohol-only treatment admissions and 65.8 percent of the alcohol with secondary drug admissions. Whites comprised 71.8 percent of the alcohol-only treatment admissions and 69.5 percent of the alcohol with secondary drug treatment admissions. American Indians, which comprise five percent of the state's population, comprised 24.2 and 25.7 percent of the alcohol-only and alcohol with secondary drug treatment admissions, respectively (TEDS, 2009).

Alcohol-only treatment admissions in North Dakota primarily involved persons aged 26-30 years (12.9 percent of the total admissions), followed by 46-50 years (12.7 percent), 21-25 years (12.3 percent), 31-35 years (11.7 percent) and 36-40 years (11.6 percent). Alcohol with secondary drug treatment admissions were most common among persons aged 21-25 years (23.9 percent of the total admissions), followed by 26-30 years (17.9 percent), 31-35 years (11.6 percent), 12-17 years (10.3 percent) and 18-20 years (9.5 percent) (TEDS, 2009).

North Dakota's alcohol-related outpatient treatment admission rates per 100,000 have steadily declined in recent years and tend to be lower than the overall U.S. rates. For alcohol-only treatment, North Dakota had about 151 admissions per 100,000 persons (ages 12 and older), compared to the U.S. at 163 admissions per 100,000 in 2006. Regarding treatment for alcohol with a secondary drug in 2006, there were about 117 admissions per 100,000 in North Dakota, compared to 132 per 100,000 in the U.S. (Office of Applied Studies, 2007).

## CRIME

One consequence of alcohol use is getting in trouble with the law, namely being arrested, fined, imposed with various other penalties (e.g., driver's license revocation), and/or being incarcerated. The North Dakota Uniform Crime Reporting (UCR) program collects and analyzes crime and arrest data reported by the various local law enforcement agencies in the state. In 2008, 46 sheriffs' departments and 40 police departments reported data to the state UCR program (North Dakota Office of Attorney General, 2009).

In 2008, 5,815 arrests were made for driving under the influence of alcohol, involving 5,718 adults and 93 juveniles (note: these figures exclude cases with missing age). In 2008, annual DUI arrests were up 12.3 percent from 1999, when 5,174 persons were arrested (note: cases with missing age were excluded from this analysis). It is unclear whether the increases in arrests were due to increased rates of drunk driving, increased law enforcement efforts, or both. DUI arrests in North Dakota typically involved offenders who were between the ages of 21 and 34 years (**Figure 12**). In fact, 48 percent of all DUI arrests in the state since 1999 involve this age cohort.

**Figure 12: DUI Arrests in North Dakota, by High-Risk Age Groups**



Source: Office of Attorney General, Bureau of Criminal Investigation

However, DUI arrests for offenders in their 20s and early 30s have decreased since 2007. Male offenders made up over three-quarters (77.7 percent) of DUI arrests. Since 2000, DUI arrests have increased 29 percent for males and 58 percent for females by 2008.

The U.S. Department of Transportation and the North Dakota Department of Transportation (2009) process and disseminate a variety of information on fatal motor vehicle crashes, including blood alcohol concentration (BAC) levels among persons involved in these crashes. Across all fatal crashes from 1999 to 2008, 46.6 percent (i.e., 510 of 1,094) of the fatalities tested positive for alcohol. Of the fatalities with some level of alcohol involvement, the overwhelming majority (83.5

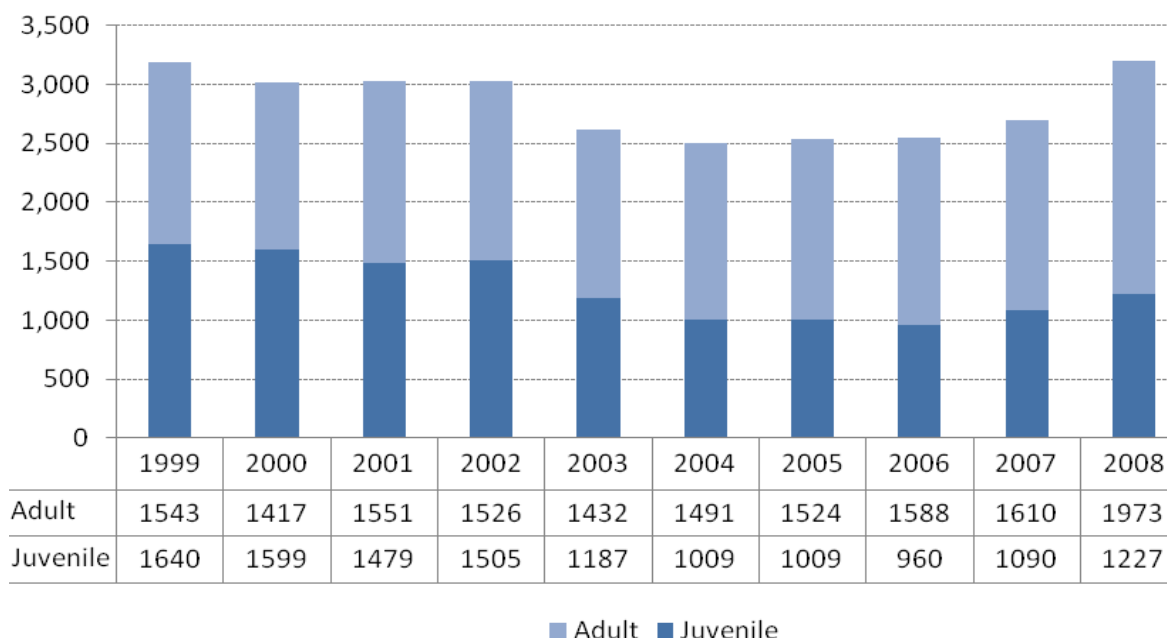
percent) had BAC levels at 0.10 or higher. Of the remainder, 19 (4.1 percent) had BAC levels of .08 to .09, and 58 (12.4 percent) had BAC levels of .01 to .07 (NDDOT, 2009).

A total of 3,219 blood tests and 2,061 breath tests were administered to DUI suspects in 2008. Aggregated results of the blood tests indicated that 95.8 percent of suspects were at or above the legal BAC level of 0.08. Comparatively, 90.5 percent of all breath tests yielded BAC levels that were at or above the 0.08 mark. Thirty-three percent of blood-tested and 20 percent of breath-tested suspects were highly inebriated, with BAC levels at or above 0.2 (NDDOT, 2009).

Violent behavior and crimes are associated with alcohol, although the causal pathway is not completely understood. Drinking on the part of the perpetrator or victim can increase the risk of assaults and related injuries. It is estimated that 23 percent of assaults, 30 percent of physical assaults and three percent of robberies are related to alcohol use (SAMHSA, 2006b).

“Index crimes” refer to seven common violent or property crimes, including burglary, larceny, motor vehicle theft, murder/non-negligent manslaughter, forcible rape, robbery, and aggravated assault. In North Dakota, the number of arrests for crime index offenses has increased by 0.4 percent from 3,191 offenses in 1999 to 3,204 offenses in 2008 (Figure 13). From 1999 to 2008, adult arrests increased by 27.9 percent (N=430) and juvenile arrests decreased by 25.2 percent (N=413) (ND OAG, 2009).

**Figure 13: Number of Arrests for Crime Index Offenses by Age, North Dakota**



Source: ND Office of Attorney General, Bureau of Criminal Investigation (BCI)

\*'Juvenile' is defined as under age 18; cases with missing age are excluded from this figure.

The total number of crime index offenses in North Dakota was 12,850 in 2008. Since 1999, crime index offenses have declined by 11.9 percent (1,742 fewer offenses in 2008). The crime index offense rate for North Dakota was about 2003 per 100,000 in 2008. This figure represents a substantial 13.0 percent decrease from 1999 when the rate was 2302 offenses per 100,000 population.

Regarding crime index offenses, the most common type in North Dakota was larceny/theft (8,926 offenses in 2008), followed by burglary (2,035 offenses in 2008). The next most common crime



index offenses included motor vehicle theft (854 offenses), aggravated assault (738 offenses), forcible rape (222 offenses), robbery (71 offenses), and murder/non-negligent manslaughter (4 offenses). In 2008, murders, burglary and motor vehicle thefts decreased since previous year by 76.5, 2.9 and 2.7 percent respectively, while the other crimes increase in prevalence (ND OAG, 2009).

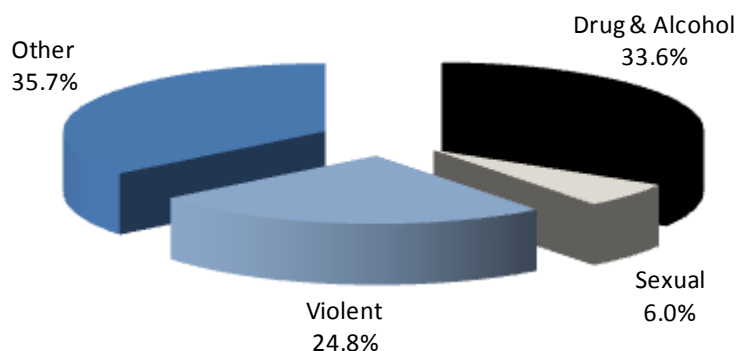
Violent crimes include murder, non-negligent manslaughter, forcible rape, aggravated assault and robbery. In 2008, violent crime arrests in North Dakota totaled 392. Since 1999, the number of these arrests increased 136.1 percent in 2008. The state's violent crime rate was about 161 offenses per 100,000 population in 2008, an increase of 16.5 percent from the previous year (ND OAG, 2009). North Dakota had the second-lowest violent crime rate among the 50 states in 2007 (United Health Foundation, 2008).

The North Dakota Office of Attorney General (2009) collects information of reported liquor law violations (LLVs) which include such offenses as minor in possession, minor in consumption, unlawful delivery to minor, minor in liquor establishment, and illegal manufacture of alcoholic beverages. In 2008, there were 5,592 total arrests, of which 4,369 (78.1 percent) involved adults and 1,217 (21.8 percent) involved juveniles (i.e., under age 18). From 2003 to 2008, total LLV arrests in North Dakota decreased by 19.8 percent; juvenile LLV arrests declined by 30 percent within this period (ND OAG, 2009).

## IMPRISONMENT

A harsh potential consequence of alcohol use is prison time. In 2009, 1,049 inmates entered prison in North Dakota (**Figure 14**).

**Figure 14: Offense Types among North Dakota Inmates, 2009**

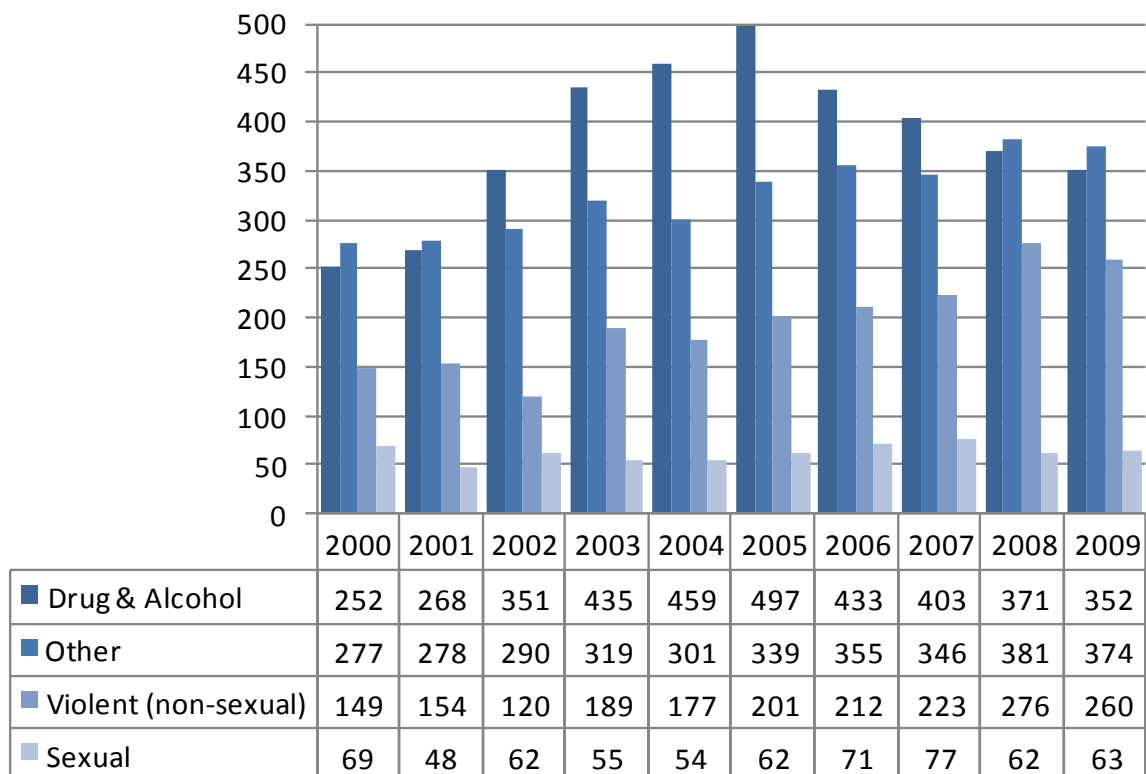


Source: ND Department of Corrections and Rehabilitation, Prisons Division, Inmate Population Information, 2009

Of this number, 33.6 percent were drug and alcohol offenders, 35.7 percent were 'other' offenders, 24.8 percent were violent crime offenders, and 6.0 percent were sex offenders (**Figure 14**). In 2009, there were 882 male offenders that entered the North Dakota prison system (ND Department of Corrections and Rehabilitation, 2009). Of these inmates, their criminal offenses comprised the following: drug (38.9 percent); other (34.1 percent); violent (26.9 percent); and sexual (7.1 percent). In 2009, there were 167 female offenders that entered the North Dakota prison system. Of these inmates, their criminal offenses comprised the following: drug (32.5 percent); other (35.9 percent); violent (24.4 percent); and sexual (0.0 percent).

Since 2000, the number of alcohol/drug-related prison admissions in North Dakota rose from 252 to 352 in 2009, an increase of 40 percent (**Figure 15**). In this same time period, 'other' crime admissions increased by 35 percent, violent crime admissions rose by 74 percent, and sex offenses decreased 9 percent (NDDOCR, 2009).

**Figure 15: Prison Inmate Admissions of Selected Offenses, North Dakota**



Source: ND Department of Corrections and Rehabilitation, Prisons Division, Inmate Population Information, 2009

## **DOMESTIC VIOLENCE, ABUSE, AND NEGLECT**

Domestic violence is a potential consequence of alcohol use, abuse, and dependence. The North Dakota Office of Attorney General, Bureau of Criminal Investigation (BCI), collects information on domestic violence incidents in the state. Since 1998, these incidents rose from 1,442 to 1,835 in 2001, an increase of 27 percent (ND OAG, 2001).

The North Dakota Council on Abuse Women's Services (CAWS) collects and disseminates information on domestic violence incidents in North Dakota. In 2008, there were 4,563 domestic incidents (representing a 2% increase from previous year; directly impacting at least 4,563 children) reported to crisis intervention centers. Also, 4,258 new victims (94% of which were women) received services from crisis intervention centers in 2008 (ND CAWS, 2009). Comparatively, in 2007, there were 4,496 domestic incidents (representing a 5% decrease from previous year; directly impacting at least 4,673 children) reported to crisis intervention centers. Also, 4,179 new victims (95% of which were women) received services from crisis intervention centers in 2007 (ND CAWS, 2008).

The Centers for Disease Control and Prevention's Pregnancy Risk Assessment System (PRAMS) collects information on domestic violence and substance use among pregnant women. According to PRAMS, 2.6 percent of expectant North Dakota mothers indicated they were victims of physical abuse by their husband or partner in 2002. This percentage ranked North Dakota 23<sup>rd</sup> out of 27 PRAMS-participating states (CDC, 2002).

North Dakota Kids Count (2009) reported there were 6,982 suspected victims of child abuse or neglect in North Dakota in 2008. This number represents a 3.5 percent increase from the number of suspected victims in 2006 and an 11.3 percent increase in the number of suspected victims reported in 2007.

## **ALCOHOL AND PREGNANCY**

According to PRAMS, 3.6 percent of North Dakota expectant mothers indicated they had used alcohol during the last three months of their pregnancy in 2002. This figure put North Dakota in 22<sup>nd</sup> place among the 27 PRAM states. Vermont had the highest rate (12 percent), while West Virginia had the lowest percent (2 percent). A potential consequence of alcohol use during pregnancy is delivering an underweight infant who, as a result, may face daunting health challenges as a neonate, toddler, adolescent, and adult. According to the North Dakota Division of Vital Records, North Dakota's 2005 low birth weight rate was 66.3 births per 1,000 live births. Since 1991, when there were 54.2 births per 1,000, the low birth weight rate has increased by 22 percent. Compared to the U.S., North Dakota's low weight birth rate is substantially lower (CDC, 2002).

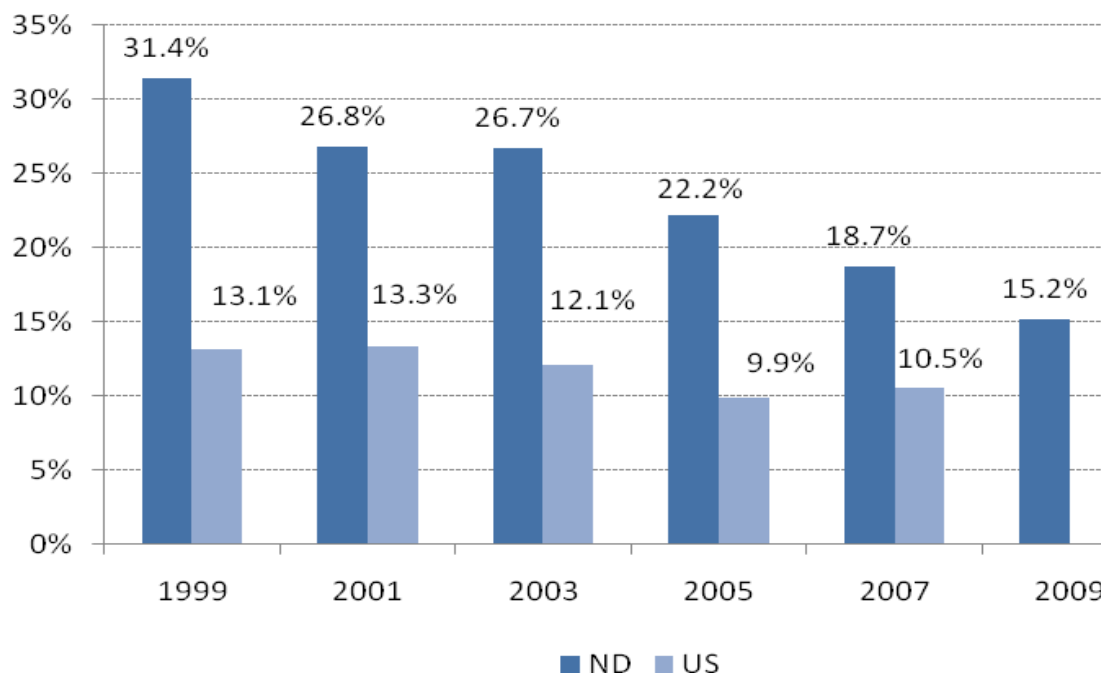
Fetal Alcohol Syndrome (FAS) is another potential consequence caused by mothers who use alcohol during their pregnancies. According to the North Dakota Division of Vital Records (2006), there are very limited numbers of these cases per year. In fact, there was only one documented FAS case in 2005 and only 17 documented cases since 1990. Burd (2006) derived estimates of Fetal Alcohol Spectrum Disorders and related developmental disorders (FASD) in the U.S., and each of the 50 states including North Dakota. In North Dakota, Burd estimated there were a total of 6,343 persons with FASD and 76 new cases each year. The annual costs for FASD in North Dakota are an estimated \$16.7 million (Burd, 2006).

## ALCOHOL AND VEHICLES

Alcohol-related motor vehicle crashes kill one person every 45 minutes (NHTSA, 2009). During 2008, 11,773 people in the U.S. died in alcohol-related motor vehicle crashes, representing 32 percent of all traffic-related deaths (NHTSA, 2009). In 2009, about 1.48 million drivers were arrested for driving under the influence of alcohol or narcotics (Department of Justice, 2009). This number represents less than one percent of the 159 million self-reported episodes of alcohol-impaired driving among U.S. adults each year (Quinlan et al., 2005). Each year, alcohol-related crashes in the U.S. cost about \$51 billion (Blincoe, 2002). Alcohol-related vehicle crashes are the leading cause of death among youth and young adults (CDC, 2009).

In the YRBS (2009), North Dakota high school students (grades 9-12) were asked whether they had driven a vehicle after consuming alcohol during the past 30 days (**Figure 16**). In 2007, 15.2 percent of students responded in the affirmative.

**Figure 16: Driving After Consuming Alcohol, North Dakota and United States, Students Grades 9-12**



Source: Youth Risk Behavior survey (Grades 9-12)

\*Within past 30 days.

Note: 2009 U.S. YRBS estimates are not yet available.

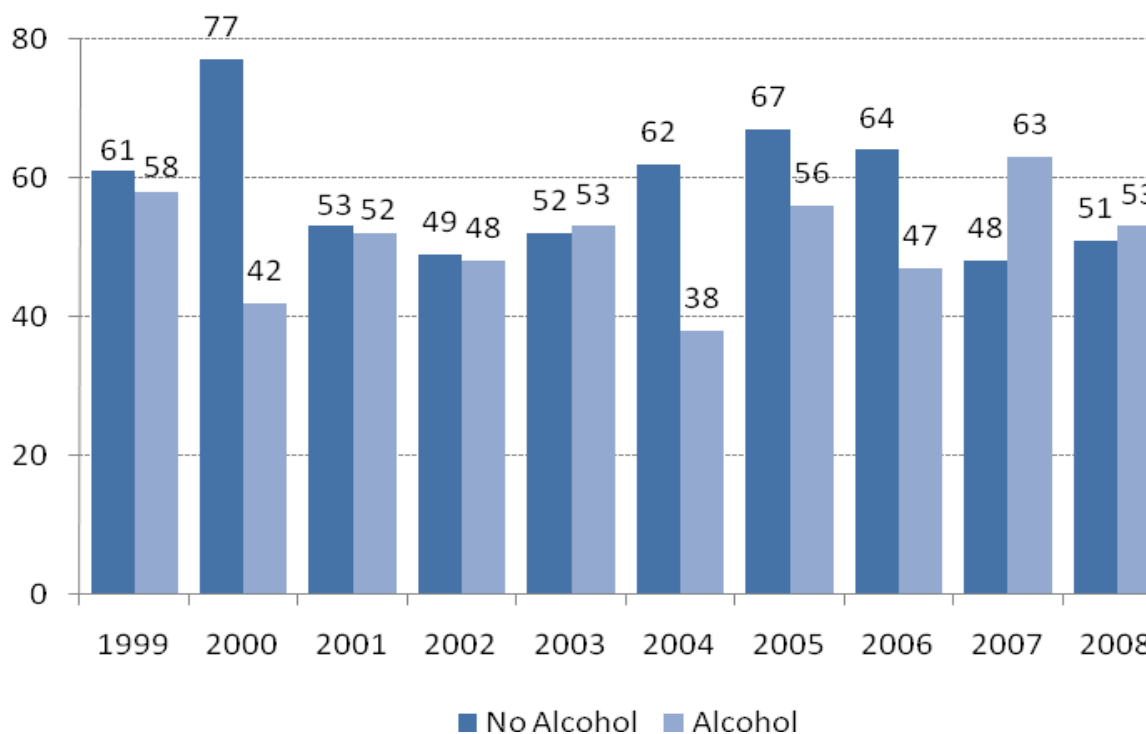
Since 1999, the percent of impaired teen drivers in North Dakota has declined from one-third to just under one-sixth. However, North Dakota's rates were more than twice the magnitude of U.S. rates. Boys were more likely than girls to have driven a vehicle after drinking alcohol. The percentage for both genders has substantially declined since 1999. By grade, it is clear that drinking and driving became more prevalent among North Dakota high school students as they became older, progressed toward, and reached the 12th grade. From 1999 to 2009, the percent of students by grade who drove after consuming alcohol has substantially declined (YRBS, 2009).

In 2009, slightly more than one-quarter (28.3 percent) of North Dakota high school students said that in the past month, they were a passenger of a driver who had consumed alcohol. This rate is substantially lower than North Dakota's 1999 prevalence rate of 48 percent and is slightly lower than the U.S. prevalence of 29.1 percent in 2007 (note: 2009 U.S. YRBS estimates are not yet available; YRBS, 2009).

The BRFSS asked U.S. adults aged 18 and older whether they drove a vehicle on at least one of the past 30 days when they "perhaps had too much to drink." Among North Dakotans, 7.2 percent said they had recently driven a vehicle when they had drunk alcohol in 2004. Compared to the U.S. rate, North Dakotans were twice as likely to engage in this illegal and dangerous behavior. Men were three times more likely than women to have driven a vehicle when they had drunk alcohol (BRFSS, 2005). Those age 18 to 29 years were far more likely than their older counterparts to have driven a vehicle when they had drunk alcohol (BRFSS, 2005).

From 1999 to 2008, there were 940 fatal vehicle crashes in North Dakota, or about 94 per year. The highest annual number of fatal crashes (i.e., 105) occurred in 2005. Within this ten-year period, approximately half (48.5 percent) of crashes had alcohol involvement. The percent of alcohol-related crashes varied across the years, ranging from a low of 40 percent in 2004 to a high of 55.8 percent in 2007. From 1999 to 2008, a total of 1,094 persons died in these 940 crashes, and 510 (46.6 percent) of these deaths were a result of alcohol-related crashes (North Dakota Department of Transportation, 2008) (**Figure 17**).

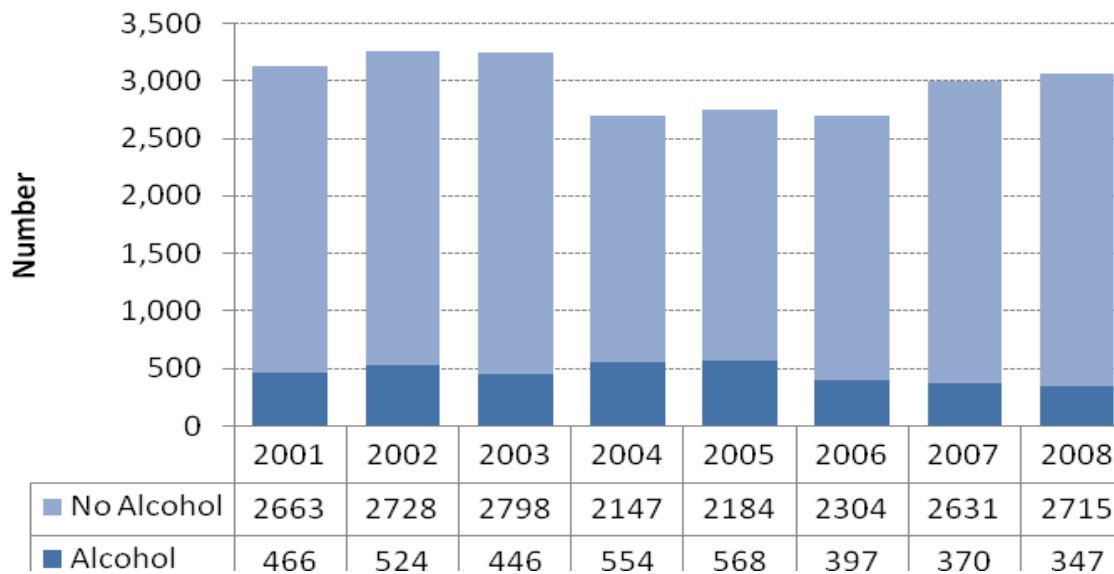
**Figure 17: Alcohol-Related Motor Vehicle Fatalities, North Dakota**



Source: ND Department of Transportation; Fatality Analysis Reporting System

In the period 2001-2008, there were 23,842 injury crashes, with 3,672 (15.4 percent) having alcohol involvement (**Figure 18**). Over this period, the number of injury crashes declined through 2006, but then increased in 2007; however, the percent of these crashes that were alcohol-related increased from 2001 (14.9 percent) to 2005 (20.6 percent), and then declined in 2006 (14.7 percent), 2007 (12.3 percent) and 2008 (11.3 percent). A total of 35,801 injuries were incurred in these 23,842 crashes for this eight-year period. About 14 percent (N=5,058) of these injuries were the result of alcohol-related crashes (North Dakota Department of Transportation, 2009).

**Figure 18: Alcohol-Related Motor Vehicle Crashes Involving Injury, North Dakota**



Source: ND Department of Transportation

North Dakota's motor vehicle crash fatality rate in 2008 was 1.37 deaths per 100 million vehicle miles traveled (North Dakota Department of Transportation, 2009). Comparatively, the U.S. rate for 2008 was 1.28 deaths per 100 million miles traveled. Thus, North Dakota's death rate was higher. Since 1997, North Dakota's rate has been lower than or equal to the U.S. rates, with the exceptions of 1999, 2005, 2007 and 2008, when it was higher. Regionally, North Dakota's 2008 rate of 1.37 deaths per 100 million miles traveled was higher than Minnesota's rate (0.79 deaths), but lower than the rates of Montana (2.4 deaths in 2007) and South Dakota (1.43 deaths) for the same year (North Dakota Department of Transportation, 2009). Regional state comparisons are of interest to assess whether North Dakota is unique to the Midwest in having a relatively high crash fatality rate or if it is a problem that is endemic to the area.

The North Dakota Department of Transportation (2009) estimated that traffic crashes cost the state \$478.3 million in 2008. Of this figure, \$117.5 million were due to fatalities, \$261.6 million were associated with injuries, and \$99.2 million were due to property damage. These figures are based on the following per-incident costs in 2008: death - \$1.13 million; injury - \$61,600; property damage - \$7,500 (North Dakota Department of Transportation, 2009).

## **SCHOOL EXPULSIONS/SUSPENSIONS**

The North Dakota Department of Public Instruction (NDDPI) collects data on the number of incidents involving use of alcohol among school-aged (K-12) children in the state. North Dakota's definition of 'alcohol-related incident' entails occurrences where those involved individuals were under the influence of alcohol, or if there was evidence that they had been drinking, based on testing or investigation at the scene. Possession, use, or sale of alcohol was included. Numbers of alcohol incidents have been decreasing in recent years. To illustrate, in 2007-2008, there were 95 alcohol-related incidents involving school-aged students in North Dakota, including 23 in-school suspensions, 70 out-of-school suspensions and two expulsions (North Dakota Department of Public Instruction, 2009). By comparison, there were 143 alcohol-related incidents, including 29 in-school suspensions, 105 out-of-school suspensions and one expulsion in the 2006-2007 school year (North Dakota Department of Public Instruction, 2008). Finally, during 2005-2006, there were 157 alcohol-related incidents involving students, including 39 in-school suspensions, 112 out-of-school suspensions and no expulsions (North Dakota Department of Public Instruction, 2007).

## **MORTALITY RATES**

Use, abuse, or dependence on alcohol can lead to premature death due to a variety of causes. Long term, heavy alcohol consumption is the leading cause of chronic liver disease (ex: cirrhosis), which is one of the 12 leading causes of death in the U.S. Each year, about 15,000 people die from cirrhosis. The link between alcohol and suicide is well documented. Suicidal individuals have high rates of alcohol use and abuse and alcohol abusers have high rates of suicidal behavior. It is estimated that 20 percent of suicides are alcohol-related (SAMHSA, 2006b). For homicide, an estimated 30 percent are attributable to alcohol use. In 2005, there were approximately 14,180 homicides in the U.S. (Department of Justice, 2009).

From 1999 through 2006, North Dakota had an average of 69 liver disease deaths per year. The state's age-adjusted liver disease death rate increased from 9.4 deaths per 100,000 in 1999 to 11.6 deaths per 100,000 in 2005. In 2006, the rate dropped to 8.7 deaths per 100,000 population. The U.S. liver disease death rate has remained stable over the time period at about 12 deaths per 100,000 population (CDC Wonder, 2010; ICD-10 Codes K70-76).

According to the Centers for Disease Control and Prevention (CDC), North Dakota averaged about 81 suicide deaths per year in the period 1999 to 2006. North Dakota's age-adjusted rate was approximately 10-11 suicides per 100,000 in 1999 and 2000, but increased to 14.4 suicides per 100,000 in 2002. The state's rate decreased to 11.3 suicides per 100,000 population in 2004 and then increased to 13.8 suicides per 100,000 in 2006. The U.S. rate has remained stable over the time period at about 11 suicides per 100,000 population (CDC Wonder, 2010; ICD-10 Codes X60-X84, Y87.0).

North Dakota has one of the lowest violent crime and murder rates in the country (Department of Justice, 2009). From 1999 to 2006, North Dakota averaged 9 homicides per year. The age-adjusted homicide rate for the state has ranged from 1 to 2 deaths per 100,000 populations. Comparatively, the U.S. rate was 6 deaths per 100,000 (CDC Wonder, 2010; ICD-10 Codes X85-Y09, Y87.1).

According to the CDC (2010), North Dakota averaged 260 unintentional injury deaths per year in the period 1999 to 2006. The state's age-adjusted injury mortality rate has typically been about 37 deaths per 100,000 population, which was highly similar to the typical U.S. rate of 36-37 deaths per 100,000. The state's rate in 1999 was slightly above the national rate and declined in years 2001 and 2002 to marks that were below the national benchmark. However, since 2002, North Dakota's unintentional injury mortality rate increased once again to a level that was higher than the U.S. rate in 2005 and 2006 (i.e., 39 deaths per 100,000; ICD-10 Codes V01-X59). It is plausible that alcohol use was in part responsible for this most recent increase in the state's injury mortality rate, given the known connection.

During the period 1999 through 2006, North Dakota averaged 125 motor vehicle crash fatalities per year. The state's age-adjusted mortality rate had fluctuated slightly over this eight-year period, ranging from 17 to 22 deaths per 100,000 population. In contrast, the U.S. rate has remained steady at about 16-17 motor vehicle crash deaths per 100,000 population (CDC Wonder, 2010; ICD-10 Codes V01-V99, X82, Y03, Y32, Y36.1).



# Tobacco Consumption in North Dakota

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## **AGE OF FIRST USE**

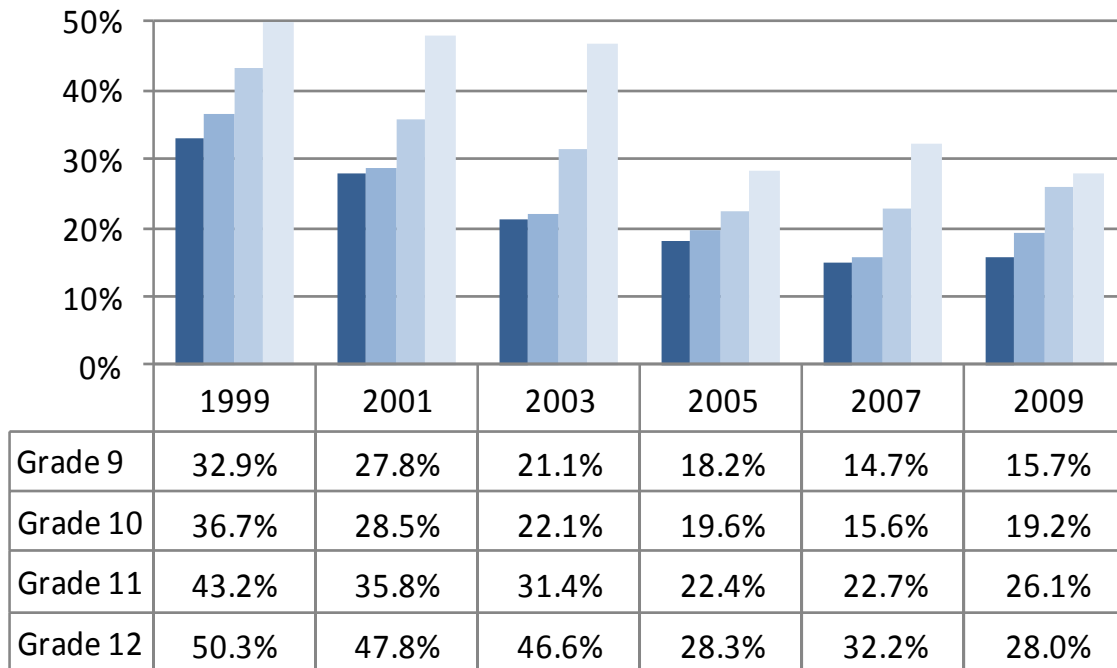
Many school-aged children encounter a situation where they may try cigarette smoking. The Youth Behavioral Risk Survey (YBRS) asked North Dakota student respondents if they had ever tried cigarette smoking, even if it was one or two puffs. In 2009, 46.5 percent of students said they had tried smoking, lower than the 2007 U.S. figure of 49.1 percent. North Dakota's prevalence rate has declined substantially from 73.1 percent in 1999. North Dakota's boys were more likely than girls to have ever tried cigarette smoking in years 1999-2005 and 2009, but less likely in 2007 (YBRS, 2009).

Children who try smoking at earlier ages are at greater risk of tobacco use and addiction in later years. The YBRS asked North Dakota high school students (grades 9-12) if they had smoked a whole cigarette before the age of 13 years. In 2009, 12.3 percent of the state's students responded in the affirmative, a figure that was slightly lower than the 2007 U.S. rate of 13.8 percent. North Dakota's percent of early smoking initiation has declined by one-half from a high of 25.4 percent in 2001. North Dakota boys were more likely than girls to have smoked a cigarette before age 13 years in 1999-2005 and 2009 and equally likely in 2007 (YBRS, 2009).

## **RECENT CIGARETTE USE AMONG STUDENTS**

North Dakota high school students (grades 9-12) were asked if they had smoked one or more cigarettes in the past month (YBRS, 2009). In 2009, the state's rate of 22.4 percent was slightly higher than the 2007 U.S. prevalence of 22.0 percent. This represented a nearly 50 percent decrease in North Dakota youth smoking since 1999 when 40.6 percent smoked. Generally, North Dakota girls were more likely than boys to have smoked in the past month. This pattern was present in all YBRS survey years until 2009 when boys had a higher 30-day smoking prevalence than girls (23.2% vs. 21.5%).

**Figure 19: Cigarette Smokers among North Dakota Students, by Grade**



Source: Youth Risk Behavioral Surveillance Survey, grades 9-12

\*Smoked cigarettes on one or more of the past 30 days.

Recent cigarette use among North Dakota high school students was assessed by grade and year (**Figure 19**). Findings demonstrated that higher cigarette use corresponds with higher grades. Recent cigarette use substantially declined from 1999 to 2005 within all grades (9 through 12). From 2007 to 2009, smoking prevalence increased slightly for grades 9 through 11, but decreased for 12<sup>th</sup> graders. Patterns of recent cigarette use among North Dakota high school students were assessed by grade and gender in 2009. In general, increased use of cigarettes corresponded with higher grades. Among 9<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> graders, boys' smoking prevalence rates were higher than for girls. Conversely, among 10<sup>th</sup> graders, girls' smoking rates were higher than for boys (YRBS, 2009).

## REGULAR CIGARETTE SMOKING AMONG STUDENTS

Students in grades 9-12 were asked if they smoked 20 or more cigarettes in the past month (YRBS). In 2009, 9.3 percent of North Dakota high school students, compared to 8.1 percent of U.S. students (2007), indicated they smoked cigarettes on 20 or more days in the past month. Between 2003 and 2007, North Dakota's rates of regular smoking among students were consistently higher than the U.S. rate (YRBS, 2009). Boys' rates were higher in 2009, and girls' rates were higher in 2003 and 2007. Rates of regular cigarette smoking among students for North Dakota and the U.S. have markedly declined since 1999 (YRBS, 2009).

High-consumption cigarette use among North Dakota high school students (grades 9-12) was examined by the YRBS in years 1995, 1999, 2001, and 2003. Students were asked if they had smoked more than 10 cigarettes a day during the past month. In 2003, 14.5 percent of North Dakota high school students and 13.7 percent of U.S. students indicated they had engaged in this smoking behavior. Across all years, North Dakota boys were more likely than their female counterparts to have smoked cigarettes in this manner (YRBS, 2005).

Another measure of high tobacco consumption used by the Youth Risk Behavioral Survey is smoking at least one cigarette per day for the past 30 days. Among students in grades 9-12, 13.6 percent of North Dakotans (2007) and 13.4 percent of U.S. respondents (2005) engaged in this smoking behavior. This state rate is a substantial decline from the YRBS survey year of 2003 in which 21.1 percent said they smoked cigarettes every day for the past month. North Dakota boys and girls smoked cigarettes at roughly equal rates (YRBS, 2008).

## **SMOKING ON SCHOOL GROUNDS**

Smoking among persons under age 18 years is illegal in the U.S.; therefore smoking on school grounds is unlawful and subject to punishment such as school suspension or expulsion. In 2007, 6.3 percent of North Dakota high school students said they had smoked cigarettes on school property on one or more occasions in the past 30 days (YRBS, 2008). This figure is slightly lower than the U.S. rate of 6.8 percent for the same year. The state's rate was two times higher in 1995, and has declined in each ensuing YRBS survey year. Boys were more likely than girls to engage in this rule-breaking behavior across all surveyed years (YRBS, 2008).

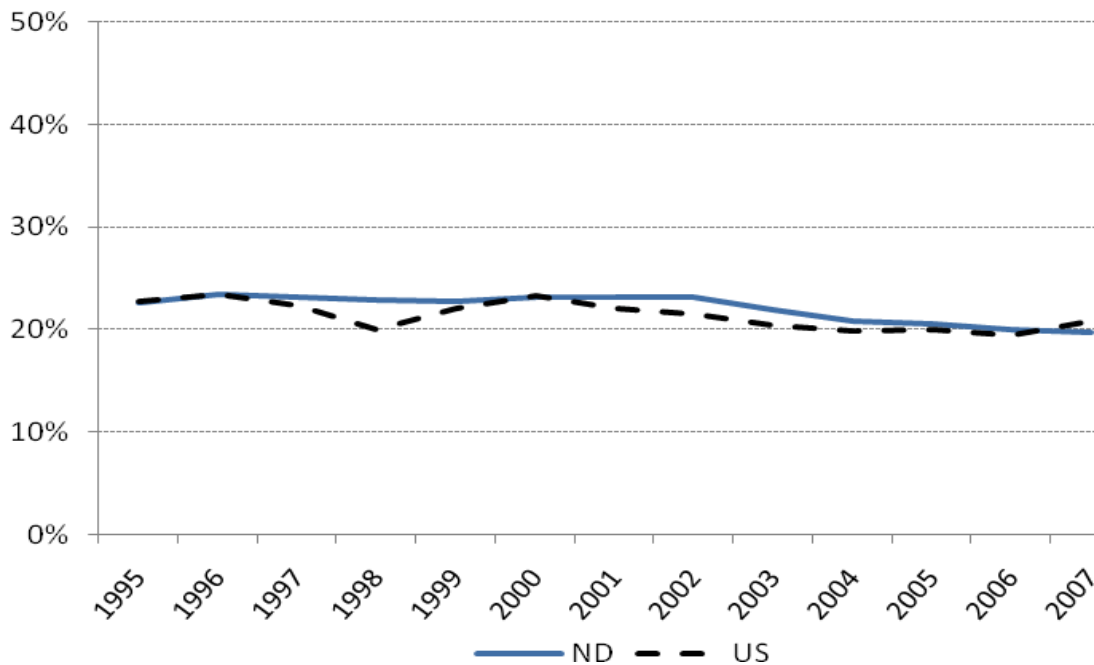
## **QUITTING CIGARETTES AMONG STUDENTS**

The cigarette smoking behavior continuum of children and adolescents can be described in stages of experimentation, regular smoking, and nicotine dependence. Smokers can quit at any stage, but successful cessation becomes more difficult as one becomes dependent on nicotine. According to the 2009 Youth Behavioral Risk Survey, 53.2 percent of North Dakota high school current smokers (grades 9-12) tried to quit smoking during the past year. This figure is slightly higher than the 2007 national figure of 49.7 percent. From 2001 to 2005, the percent of student smokers trying to quit has increased, which is perhaps a reflection of increased anti-tobacco advertisement campaigns in recent years. Girls have been more likely than boys to attempt quitting smoking (YRBS, 2008).

## **RECENT CIGARETTE SMOKING AMONG ADULTS**

One of the best data sources for assessing smoking behavior among adults in the United States is the Behavioral Risk Factor Surveillance System. The BRFSS defines 'current cigarette smoker' as one who has smoked 100 cigarettes in their lifetime and who currently smokes every day or some days. In North Dakota, the percent of adult (18 and older) cigarette smokers has remained relatively constant from 1995 through 2008, at about 18 to 22 percent (**Figure 20**). In 2008, current smoker prevalence among North Dakota adults was 18.1 percent. Over the past seven years, North Dakota's smoking percentages have generally mirrored U.S. figures (BRFSS, 2009).

**Figure 20: Adult Cigarette Smokers, North Dakota and United States, Age 18+**



Source: Behavioral risk Factor Surveillance System

\*Smoked 100 cigarettes in their lifetime and reported smoking every day or some days

Compared to the other U.S. states, North Dakota has a lower prevalence of current smokers than most states. Specifically, North Dakota's 18.1 percent smoker prevalence ranked it 28th highest among U.S. states and DC. Comparatively, West Virginia had the highest smoker prevalence of 26.5 percent, and Utah had the lowest prevalence of 9.3 percent. Regionally, the lowest smoker prevalence appeared in Western states and the highest prevalence was concentrated in the Southern and Appalachian regions (BRFSS, 2009).

North Dakota men were more likely than women to smoke cigarettes. This pattern has occurred across virtually every year since 1990. In 2008, 20.4 percent of men and 15.8 percent of women were cigarette smokers. North Dakotans were more likely to smoke cigarettes at younger ages (**Table 3**). Slightly less than one-quarter (23.6 percent) of persons aged 18 to 24 years smoked cigarettes, compared to 16.9 percent of persons aged 55 to 64 years and only 8.0 percent of persons aged 65 and older (BRFSS, 2009).

**Table 3: Cigarette Smoking Among Adults Ages 18+, North Dakota, 2008**

Overall:	18.1
Gender:	
Male	20.4
Female	15.8
Age:	
18-24	23.6
25-34	21.8
35-44	20.0
45-54	19.9
55-64	16.9
65+	8.0
Race (comb. 1999-2008)	
American Indian	48.4
White	19.2
Asian	18.0
Black	20.6
Other	24.0
Education:	
Less Than High School	25.5
High School or GED	21.5
Some Post-High School	21.3
College Graduate	9.3
Income (thousand):	
<\$15,000	32.1
\$15,000-24,999	27.7
\$25,000-34,999	20.8
\$35,000-49,999	19.2
\$50,000+	14.0

American Indians (48.4 percent) in North Dakota were more than twice as likely to smoke cigarettes as persons of other races, including whites (19.2 percent) (BRFSS, 1999-2008; Table 3). Other races and their corresponding smoking rates were as follows: Asian (18.0 percent); Black (20.6 percent); and other (24.0 percent). North Dakotans with lesser education were more likely to smoke cigarettes than their higher educated counterparts (Table 3). Persons with less than a high school diploma smoked at 25.5 percent, whereas those with some post-high school education smoked at a rate of 21.3 percent, and only 9.3 percent of college graduates smoked cigarettes. Similarly, North Dakotans with lower incomes were more likely to smoke cigarettes (Table 3). About one-third (32.1%) of persons earning less than \$15,000 a year smoke cigarettes, compared to only 14.0 percent of those earning \$50,000 or more per year (BRFSS, 2009).

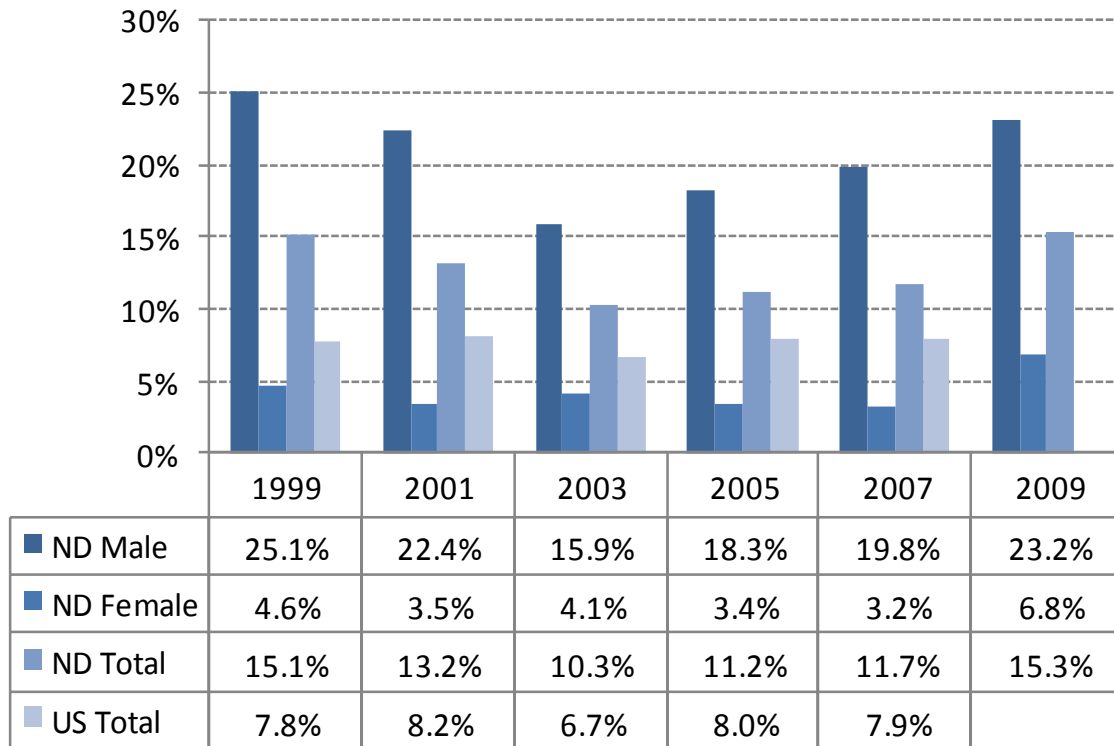
The National Survey of Drug Use and Health (NSDUH) is another source of information on tobacco use in the U.S. This survey, similar to the YRBS and BRFSS, assesses the percent of persons that smoked one or more cigarettes in the past month. The NSDUH determines the percent of state residents that are recent cigarette smokers by age cohort (12+, 12-17, 18-25, 26+), categorizes the rates into five ranked groupings and plots these groupings on U.S. maps (Hughes et al., 2009). North Dakotans age 12 and older were classified in the third-highest group of U.S. states (24.6-25.8 percent smokers). Compared to similarly-aged persons in other U.S. states, North Dakotans aged 12-17 were in the highest grouping (12.2-15.9 percent smokers) for recent smokers. State residents aged 18-25 years were in the third-highest grouping (38.1-40.7 percent). Finally, state residents aged 26 years and older were classified in the fourth-highest ranked group of U.S. states (22.0-23.9 percent smokers) (Hughes et al., 2009).

## SMOKELESS TOBACCO

According to the YRBS, chewing tobacco, snuff, or dip was used in the past 30 days by 15.3 percent of North Dakota high school students in 2009 (**Figure 21**). By comparison, 7.9 percent of U.S. high school students used chewing tobacco, snuff, or dip on one or more of the past 30 days in 2007. North Dakota's smokeless tobacco rate declined from a high of 15.1 percent in 1999 to 11.7 percent in 2007, but has resurged in 2009. Compared to its U.S. counterparts, North Dakota high school students' smokeless tobacco use is higher across every YRBS survey year. By gender, North Dakota boys were three times more likely than girls (23.2 percent versus 6.8 percent) to use smokeless tobacco in 2007 (YRBS, 2009). Increases in smokeless tobacco use from 2007 to 2009 were noted among boys and especially girls (i.e., 3.2 percent to 6.8 percent) in North Dakota high schools.

In 2007, 6.3 percent of North Dakota high school students used smokeless tobacco on school property. Similarly, among U.S. high school students, 5.0 percent used it on school premises in 2005. The North Dakota prevalence has decreased since 1995 when 8.3 percent of North Dakota high school students used smokeless tobacco at school. Boys were 11 times more likely than girls to use it on school property (YRBS, 2008).

**Figure 21: North Dakota Students, Grades 9-12 Who Used Chewing Tobacco, Snuff or Dip, 1999-2009**

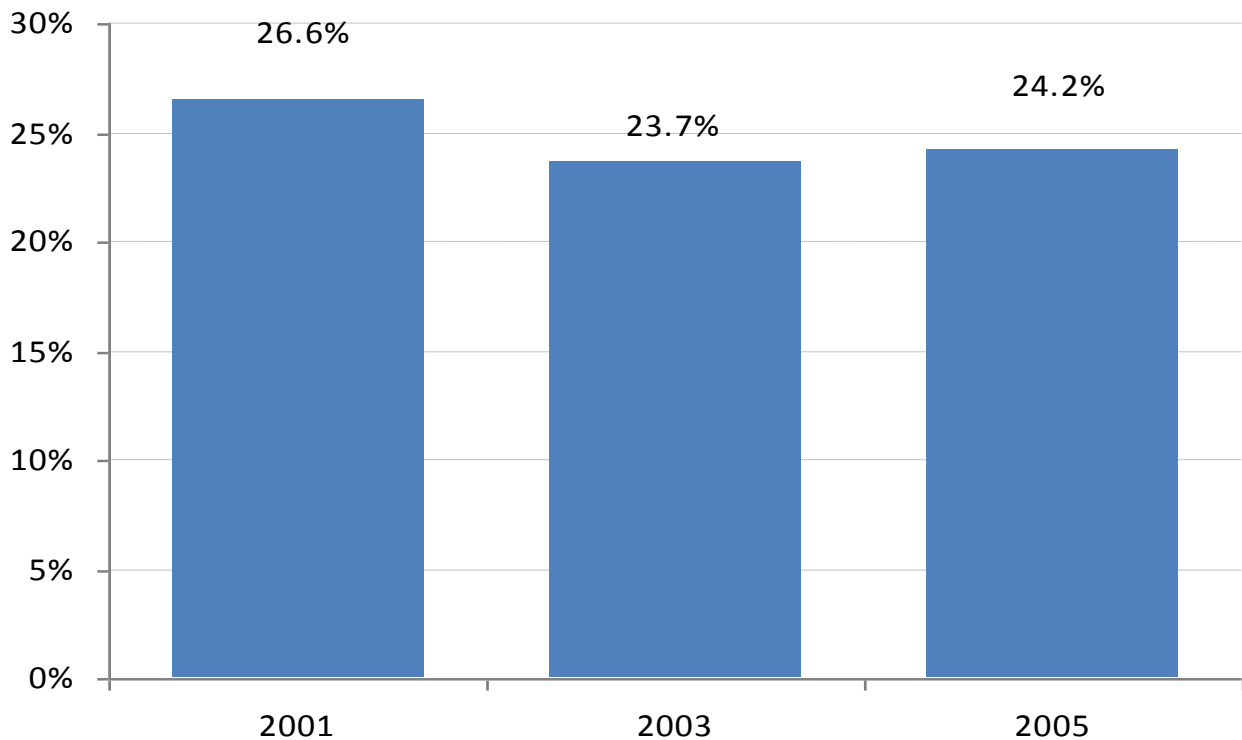


Source: Youth Risk Behavioral Surveillance Survey, Grades 9-12

\*\*Used on one or more of the past 30 days

Smokeless tobacco use data from the BRFSS is very sparse for North Dakota, as available information is from 2001, 2003, and 2005 (**Figure 22**). Based on these years of data, it is estimated that about one-quarter of North Dakotans (primarily men) who have ever tried smokeless tobacco are current users.

**Figure 22: Current Smokeless Tobacco Users, North Dakota, Adults Ages 18+**



Source: Behavior Risk Factor Surveillance System

\*Among those that have tried smokeless tobacco.

## **ANY FORM OF TOBACCO**

The YRBS estimated that 34.1 percent of North Dakota high school students used some form of tobacco in the past month in 2003. In 2009, this figure dropped to 30.6 percent of students recently using tobacco. The comparable U.S. rate for 2005 was 28.4 percent. Boys (36.3 percent) were more likely than girls (24.5 percent) to have recently used some form of tobacco in North Dakota in 2009 (YRBS, 2009).

In the NSDUH, respondents were asked whether they had used any form of tobacco in the past 30 days. North Dakotans aged 12 and older used any tobacco at a rate that warranted classification into the third-highest ranked U.S. state grouping which had prevalence figures of 29.5-30.8 percent (Hughes et al., 2009). North Dakotans aged 12-17 were categorized in the second-highest ranked grouping of U.S. states which had prevalence figures of 14.4-15.4 percent. North Dakotans aged 18-25 years were classified in the second-highest ranked grouping of U.S. states that possessed (any) tobacco use prevalence of 47.2-49.1 percent. Finally, North Dakota residents aged 26 years and older were classified in the third-highest ranked grouping of U.S. states, which had tobacco use



prevalence ranging from 28.7 to 30.2 percent (Hughes et al., 2009). In examining data from previous years of the NSDUH, tobacco use in North Dakota has continually declined across all age groups, especially younger people. The North Dakota CORE survey (conducted in 2003-05, 2006 and 2008) found that North Dakota college students were more likely than U.S. college students in 2005 to have used some form of tobacco in the past 30 days (38.9 percent vs. 28.1 percent) (Walton, 2005). In 2006 and 2008, North Dakota's figure dropped to 32.0 percent and 31.7 percent, respectively (ND CORE, 2007; 2009); however, these figures are still higher than the most up-to-date (2006) national benchmark prevalence of 26.2 percent (Core Institute, 2009).

## **ATTITUDES TOWARD CIGARETTE SMOKING**

The NSDUH polled respondents about whether they agreed that smoking one or more packs of cigarettes per day posed a "great risk" to one's health. Across all U.S. states, the percent agreeing to this statement varied across age cohorts and ranged from approximately 68 percent to 79 percent. North Dakotans were found to agree that there were great health risks associated with cigarette smoking at very low levels relative to other states (Hughes et al., 2009). In fact, North Dakota was in the lowest 20 percent grouping of states for ages 12 and older, 18-25 and 26 and older. The state was in the fourth-lowest group among persons aged 12-17 years (Hughes et al., 2009).

The North Dakota Department of Health implemented a Youth Tobacco Survey (YTS) to North Dakota middle and high school respondents every two years, coinciding with the YRB survey, for the past decade. In 2009, findings from the high school student survey indicated that, aside from notable reductions in cigarette smoking prevalence (in support of state YRBS findings), respondents' attitudes toward tobacco use were changing in a positive manner (from previous YTS years; Winkelman, 2009). To illustrate, North Dakota high school survey results indicated the following: the percent of respondents who think that cigarette smokers have more friends and/or smoking cigarettes makes young people look cool or fit in appeared to be decreasing; the percent of respondents who watch TV and/or go to movies who have seen actors using tobacco appeared to be decreasing; the percent of respondents who use the Internet, watch TV, and/or go to movies and saw advertisements for tobacco products on the Internet, on TV, and/or in movies appeared to be decreasing; the percent of respondents who reported they bought or received anything with a tobacco company name or picture on it in the past year, would ever use or wear anything with a tobacco company name or picture on it most or some of the time, and are "receptive" to tobacco advertising appeared to be decreasing; and the percent of respondents who think people should have rules about smoking in work places and in public places appeared to be increasing. It was suggested that these positive changes in attitudes toward tobacco among high school respondents were perhaps due in part to recent smoke-free laws and media campaigns within North Dakota (Winkelman, 2009).

# Tobacco Consequences in North Dakota

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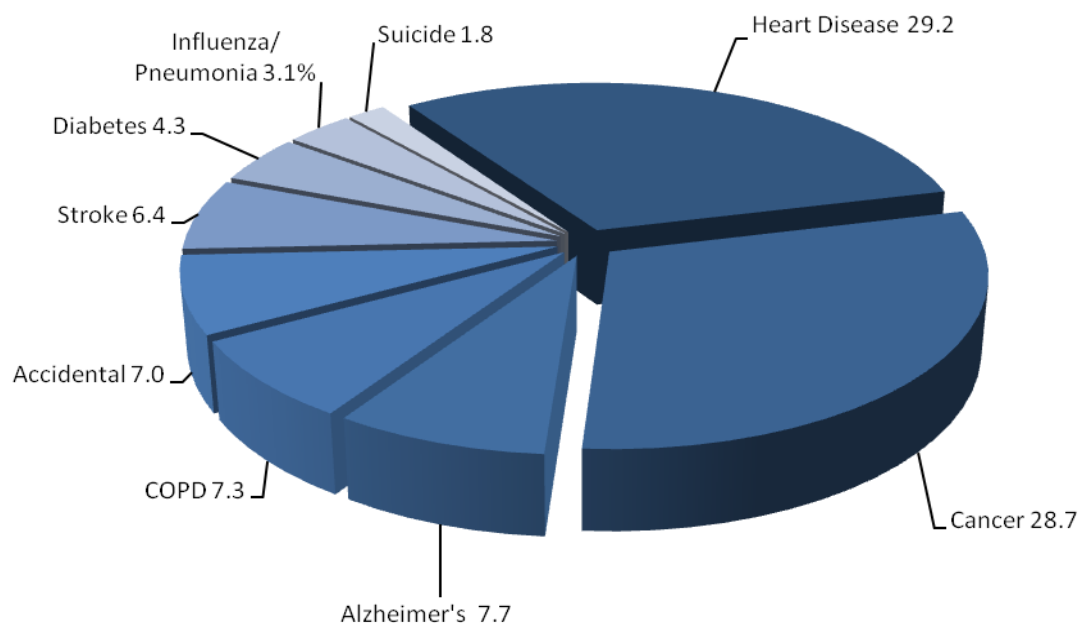
## SMOKING AND PREGNANCY

According to the North Dakota Division of Vital Records, North Dakotan expectant mothers smoked during pregnancy at a rate of 17 percent. Since 1990, the percentage of smokers dropped gradually from a high of 22.1 percent in 1991. According to the CDC's (2002) Pregnancy Risk Assessment Monitoring System, 15.6 percent of North Dakota expectant mothers smoked cigarettes during the last three months of pregnancy in 2002. This figure ranked North Dakota as 10th out of 27 PRAMS states. Among other states, West Virginia had the highest rate (25.3 percent) and Utah had the lowest rate (6.8 percent).

## MORTALITY

According to the North Dakota Division of Vital Records (2009), almost one-half (48%) of all North Dakota deaths were the result of heart disease (29.2%) or cancer (28.7%) in 2007 (**Figure 23**). Tobacco use may have contributed to these two major causes of death, as well as other causes such as stroke (6.4%) and chronic obstructive pulmonary disease (COPD; 7.3%). Tobacco use played a part in the deaths of North Dakotans due to a variety of cancer types, namely lung cancer. One-quarter of all cancer deaths in the state were due to lung cancer, which was caused by tobacco use in 87 percent of the cases (American Cancer Society, 2009). Other cancers linked to tobacco use included oral/pharynx and head/neck.

**Figure 23: Causes of Death, Percent, North Dakota 2008**



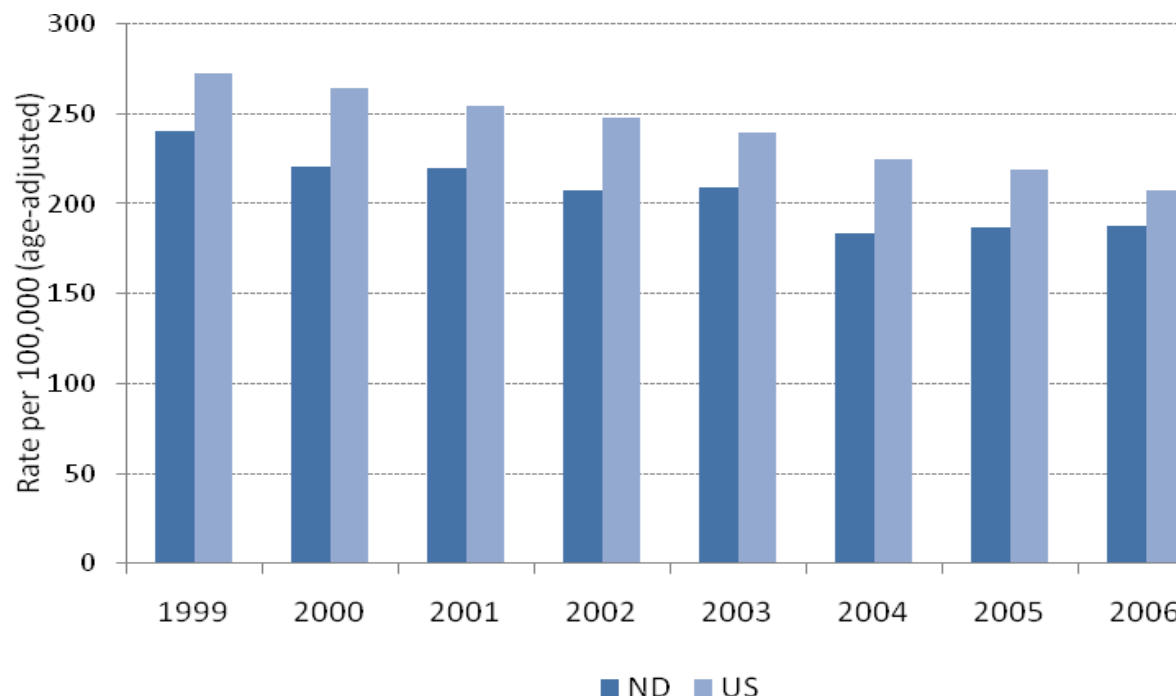
Source: ND Vital Records

North Dakota's lung/bronchus cancer incidence (i.e., new cases or diagnoses) and mortality rates are lower than the U.S. rates across all years. On average, there are an estimated 403 new cases of lung/bronchus cancer each year in North Dakota (North Dakota Cancer Registry, 2010). North Dakota men were much more likely to be diagnosed with and die from lung/bronchus cancer (North Dakota Cancer Registry, 2010; CDC Wonder, 2010). From 1999 through 2006, there was an average of 325 lung/bronchus cancer deaths per year in North Dakota. Concerning age-adjusted rates, North Dakota's lower rates within this time period occurred in 1999 (41.6 per 100,000) and 2002 (42.7 per 100,000), and its highest rates occurred in 2001 (49.1 per 100,000) and 2004 (49.0 per 100,000). By comparison, U.S. lung/bronchus cancer rates have ranged from 52 to 56 deaths per 100,000 during 1999-2006 (CDC Wonder, 2010; ICD-10 Code C34).

Chronic obstructive pulmonary disease (COPD) and emphysema are grave health consequences associated with chronic tobacco use. In the period from 1999 to 2006, North Dakota averaged 291 such deaths per year. North Dakota's age-adjusted COPD/emphysema mortality rate ranged from 35 to 42 deaths per 100,000 population. These rates were generally lower than U.S. figures of 41-45 deaths per 100,000 (CDC Wonder, 2010; ICD-10 Codes J40-47).

Heart disease, the leading cause of mortality in the nation and state, was responsible for approximately 1,684 deaths per year in North Dakota from 1999-2006 (**Figure 24**). The state's age-adjusted rate, substantially lower than the U.S. rate, has declined from 240 deaths per 100,000 in 1999 to 188 deaths per 100,000 in 2006. The U.S. heart disease mortality rate has also declined from 273 deaths per 100,000 in 1999 to 207 deaths per 100,000 in 2006 (CDC Wonder, 2010; ICD-10 Codes I00-I52).

**Figure 24: Heart Disease Mortality, North Dakota and United States**



Source: CDC Wonder (2010)

The CDC (2007) developed estimates of smoking-attributable mortality using 2000-2004 data for every U.S. state. North Dakota's smoking-attributable mortality rate of 225.6 deaths per 100,000 population, was ranked 48th (highest) out of 50 states and DC. The state's smoking-attributable mortality rate decreased by 10.9 percent since 1996-1999. Neighboring states of South Dakota (41st) and Minnesota (49th) were also in the bottom 10 ranked states for years 2000-2004. Kentucky had the highest mortality rate (370.6 deaths per 100,000) and Utah had the lowest rate (138.3 deaths per 100,000).

# Illicit Drug Consumption in North Dakota

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Many North Dakotans acknowledge that drug use and abuse are major problems in their communities (Hair et al, 2008). In a 2008 statewide survey on community perceptions of alcohol and other drugs, polled North Dakota community members characterized the following as being a “serious problem” in their communities: contribution of drug/alcohol use to crashes or injuries (34.7 percent); adult use of methamphetamine (24.4 percent); and youth use of methamphetamine (22.8 percent). Other key survey findings which alluded to community-level problems with drugs included the following: 33.3 percent indicated it was not at all difficult for adults/youth to obtain marijuana in their community; and 24.1 percent indicated it was not at all difficult for adults/youth to access methamphetamine in their community (Hair et al., 2008).

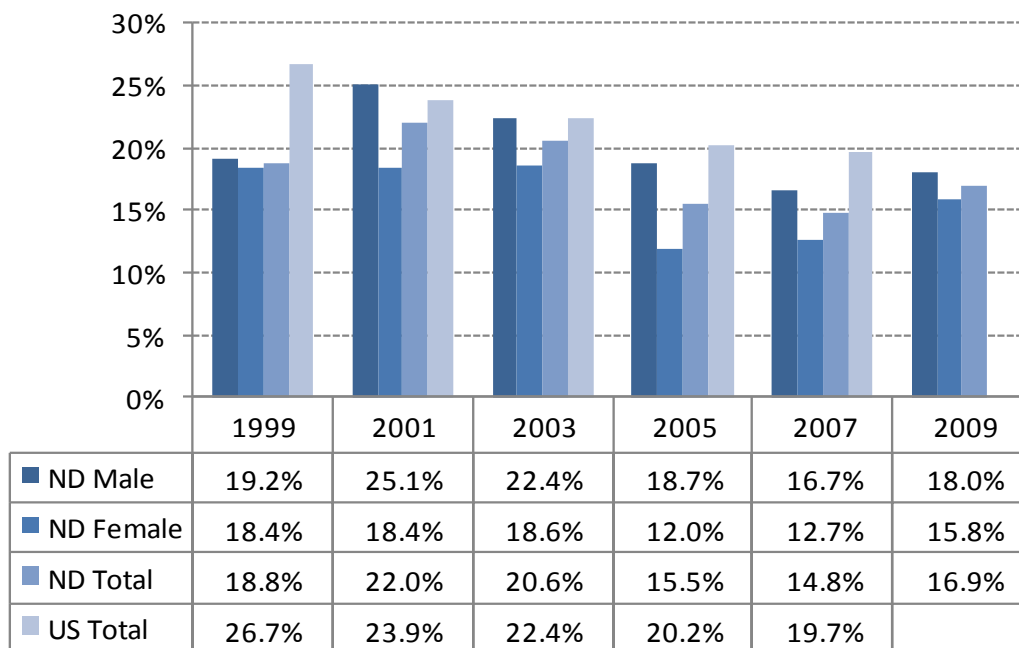
## **TRYING MARIJUANA FOR THE FIRST TIME**

The Youth Risk Behavioral Survey indicated that 6.4 percent of North Dakota high school students in 2009 tried marijuana for the first time before the age of 13 years. Comparatively, the U.S. prevalence was 8.3 percent in 2007 and, in fact, the U.S. prevalence was higher than the North Dakota prevalence across all YRBS survey years. North Dakota boys (7.4 percent) were more likely than girls (5.2 percent) to have tried marijuana before age 13 (YRBS, 2009).

## **RECENT MARIJUANA USE**

The YRBS (2009) found that North Dakota’s 16.9 percent prevalence of marijuana use in the past month in 2009 was substantially lower than the 2007 U.S. prevalence of 19.7 percent. North Dakota’s recent marijuana use prevalence among high school students was lower than the U.S. prevalence for all available YRBS survey years. North Dakota’s overall prevalence increased from 14.9 percent in 1995 to 22 percent in 2001, then declined to 20.6 percent in 2003 and finally 14.8 percent in 2007. Thus, the 2009 recent marijuana use prevalence among North Dakota high school students represents a rise from the previous YRBS survey year (**Figure 25**).

**Figure 25: North Dakota Students, Grades 9-12, Who Used Marijuana One or More Times in the Past 30 Days**



Source: Youth Risk Behavioral Surveillance Survey

In the past ten years, North Dakota boys were consistently more likely than girls to have used marijuana in the past month (YRBS, 2009). From 2007 to 2009, both boys and girls had an increase in recent marijuana use. Regarding North Dakota college students, 11.4 percent indicated using marijuana in the past month in 2005. This prevalence represents a two-fold increase in marijuana use since 1994 (Walton, 2005). In 2008, the 30-day marijuana prevalence for North Dakota college students dropped to 10.9 percent (NDCORE, 2009). Comparatively, the U.S. prevalence figure for marijuana use in the past month was 16.7 percent in 2005 and 16.8 percent in 2006 (Core Institute, 2009).

## LIFETIME COCAINE USE AMONG STUDENTS

North Dakota high school students were asked if they had used cocaine one or more times during their lifetime. In 2009, 5.1 percent of North Dakota students, compared to 7.2 percent of 2007 U.S. students, indicated they had used cocaine at least once (YRBS, 2009). From 1995 to 2007, the U.S. prevalence for student cocaine use was higher than the North Dakota prevalence for five of these six YRBS years. In 2003, North Dakota's prevalence of 9.7 percent was higher than the U.S. prevalence of 8.7 percent. Of North Dakota students, boys were consistently more likely than girls to have tried cocaine at least once in the lifetime (YRBS, 2009).

## LIFETIME INHALANT USE AMONG STUDENTS

The use of inhalants to get high is a very dangerous and potentially lethal activity that is particularly hazardous to children and adolescents. The use of inhalants includes sniffing glue, breathing contents of aerosol spray cans, and sniffing paints or sprays. Among North Dakota high school

students, 11.5 percent indicated using inhalants one or more times during their lives in 2009 compared to 13.3 percent of 2007 U.S. high school students (YRBS, 2009). Since 1999, prevalence for both North Dakota and the U.S. have gradually but steadily declined over time. North Dakota girls had a higher prevalence than for boys (9.7 percent and 13.2 percent, respectively) in 2009 to have used inhalants during their lives. The prevalence among both genders has declined over time; however, the 2009 figure for girls represents an increase from the previous YRBS survey year (YRBS, 2009).

## **LIFETIME HEROIN USE AMONG STUDENTS**

Heroin is a very powerful and lethal drug, especially in the hands of juveniles. The Youth Risk Behavioral Survey inquires about the use of heroin but the data are somewhat limited for North Dakota. In 1999, 2.8 percent of North Dakota high school students and 2.4 percent of U.S. students had used it one or more times during their lives (YRBS, 2005). In 2001, 3.4 percent of North Dakota high school students and 3.1 percent of U.S. high school students had used heroin at least once. Finally, in 2007, the North Dakota and U.S. prevalence dropped to 2.4 percent and 2.3 percent, respectively. North Dakota boys were more likely than girls to have tried this drug (YRBS, 2008).

## **LIFETIME METH USE AMONG STUDENTS**

Methamphetamine, one of the nation's most dangerous illicit drugs, is highly toxic and addictive (Office of National Drug Control Policy, 2008). Use of this drug is escalating, especially in rural areas and among populations not previously known to use illicit drugs (RAC, 2008). The production of methamphetamine can be conducted anywhere such as rural farmhouses, apartments, suburban areas, garages, motels, warehouses, and rental storage spaces (ONDCP, 2008). In 2009, 3.4 percent of North Dakota high school students had tried meth at least once, compared to 4.4 percent of 2007 U.S. high school students. North Dakota's use prevalence for 2009 was one-third of the state's 1999 prevalence of 10.5 percent (YRBS, 2009). Thus, the state has experienced a healthy decline in youth use of this illegal substance over time. Boys were more likely than girls to have used meth at least once during 2001, 2003, 2005, 2007 and 2009. However, girls (11.7 percent) were more likely than boys (9.4 percent) to have used meth in 1999 (YRBS, 2009).

## **ECSTASY LIFETIME USE AMONG STUDENTS**

Ecstasy is an illegal drug used as a stimulant and as a means to relax one's inhibitions. Among North Dakota high school students, 6.4 percent (2003), 4.3 percent (2005), 4.4 percent (2007) and 5.3 percent (2009) indicated having used ecstasy at least once in their lives. Comparatively, U.S. high school students used the drug at a prevalence of 11.1 percent (2003), 6.3 percent (2005) and 5.8 percent (2007), figures that are all higher than the corresponding prevalence estimates for North Dakota high school students. North Dakota boys were more likely than girls to have tried ecstasy at least once (YRBS, 2009).

## **STEROID LIFETIME USE AMONG STUDENTS**

Illegal use of non-prescribed, anabolic steroids is popular among some persons for its ability to add muscle bulk and increase endurance among athletes. These steroids can take the form of pills or

injections and can be quite dangerous to one's health and well-being. Across five different years of Youth Risk Behavioral Survey data, North Dakota's steroid prevalence rates among high school students decreased from 4.7 percent in 1995 to 3.0 percent in 2005 to 2.6 percent in 2007. Steroid use prevalence for U.S. students spanned from 3.7 percent in 1995 to 6.1 percent in 2003 to 4.0 percent in 2005 and to 3.9 percent in 2007. North Dakota boys were three times more likely than girls to have used steroids in 2007 (YRBS, 2008).

## **LIFETIME INTRAVENOUS DRUG USE AMONG HIGH SCHOOL STUDENTS**

According to the Youth Risk Behavioral Survey, 2.2 percent of North Dakota high school students in 2009 and 2.0 percent of U.S. high school students in 2007 had used illegal drug injections at least once. North Dakota boys were much more likely than girls to have used illegal injections at least one time in their lifetime in 2009 (YRBS, 2009).

## **MARIJUANA ON SCHOOL GROUNDS**

High school students who use marijuana on or near school grounds run the risk of receiving severe punitive actions that could include school suspension, expulsion, and criminal charges via law enforcement authorities. In 2009, 3.8 percent of North Dakota high school students, compared to 4.5 percent of U.S. high school students (2007) indicated using marijuana on school grounds in the past 30 days. North Dakota's prevalence has remained relatively stable (4-6 percent) from 1995 through 2009, with the exception of 2007 when the prevalence was 2.7 percent. The U.S. prevalence has steadily declined over time from a high of 8.8 percent in 1995 (YRBS, 2009).

## **CONTACT WITH ILLEGAL DRUGS ON SCHOOL PROPERTY**

About one-fifth of North Dakota high school students (19.5 percent in 2009) and U.S. high school students (22.3 percent in 2007) indicated they had used, were offered, sold, or given an illegal drug on school property during the past year. For both North Dakota and the U.S., prevalence has declined steadily over time to their lowest levels in 2007. North Dakota boys were substantially more likely than girls to have engaged in this drug-related behavior on school property in 2009 (YRBS, 2009).

## **RECENT ILLICIT DRUG USE**

In the NSDUH (2006-2007), respondents are asked whether they had used any illicit drug in the past 30 days. North Dakotans aged 12 and older used any illicit drug at a rate that warranted classification into the lowest-ranked U.S. state grouping which had prevalence of 5.2-7.0 percent (Hughes et al., 2009). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states which had prevalence figures of 7.2-8.8 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states that possessed (any) illicit drug use prevalence of 12.4-16.9 percent. Finally, North Dakota residents aged 26 years and older were classified in the lowest-ranked grouping of U.S. states which had illegal drug use prevalence ranging from 3.5 to 5.0 percent (Hughes et al., 2009).



## **MARIJUANA USE**

In the NSDUH (2006-2007), respondents were asked whether they had used marijuana in the past year. North Dakotans aged 12 and older used this drug at a prevalence that warranted classification into the lowest-ranked U.S. state grouping which had prevalence figures of 7.2-8.7 percent. North Dakotans aged 12-17 were categorized in the second lowest-ranked grouping of U.S. states which had a prevalence range of 11.6-12.5 percent (Hughes et al., 2009). North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states which had annual marijuana use prevalence figures of 17.3-24.2 percent. Finally, North Dakota residents aged 26 years and older were classified in the lowest-ranked grouping of U.S. states which had marijuana use prevalence figures ranging from 4.2 to 5.6 percent (Hughes et al., 2009).

Respondents were asked whether they had used marijuana in the past month. North Dakotans aged 12 and older used this drug at a prevalence that warranted classification into the lowest-ranked U.S. state grouping which had prevalence figures of 3.8-5.1 percent (Hughes et al., 2009). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states which had prevalence figures ranging from 4.4-5.8 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states which had monthly marijuana use prevalence of 10.0-13.9 percent. Finally, North Dakota residents aged 26 years and older were classified in the second lowest-ranked grouping of U.S. states which had marijuana use prevalence figures ranging from 2.4 to 3.3 percent (Hughes et al., 2009).

## **ATTITUDES TOWARD MARIJUANA SMOKING**

The NSDUH (2006-2007) polled respondents about whether they agreed that smoking marijuana once a month posed a “great risk” to one’s health. North Dakotans were found to agree with “great health risks to marijuana smoking” at moderate levels relative to other states. To illustrate, North Dakotans age 12 and older were categorized in the third-highest ranked grouping of U.S. states, which had prevalence figures ranging from 37.5-39.6 percent (Hughes et al., 2009). State residents aged 12-17 years were classified in the second-highest ranked grouping of U.S. states which had prevalence figures ranging from 35.7 to 37.8 percent. North Dakotans aged 18-25 years were placed in the second-highest ranked grouping, which had prevalence figures of 25.2-27.0 percent. Finally, state residents aged 26 years and older were categorized in the third-highest ranked grouping of U.S. states, which had agreement of 40.3-43.0 percent (Hughes et al., 2009). NSDUH trend data indicate that North Dakotans are increasingly becoming more aware of the harmful effects of marijuana use.

## **ILLICIT DRUG USE OTHER THAN MARIJUANA**

Respondents were asked whether they had used any illegal drug other than marijuana in the past month. North Dakotans aged 12 and older used these drugs at a prevalence that warranted classification into the lowest-ranked U.S. state grouping which had prevalence of 2.6-3.3 percent (Hughes et al., 2009). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states which had prevalence of 3.8-4.2 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states which had monthly illicit drug use prevalence of 5.9-7.3 percent. Finally, North Dakota residents aged 26 years and older were classified in the lowest-ranked grouping of U.S. states which had illicit drug use prevalence ranging from 1.7 to 2.3 percent (Hughes et al., 2009).

The North Dakota Core Survey, conducted in 2006 and 2008, asked college students how often they had used an illicit drug in the past 30 days (Walton, 2005; NDCORE, 2009). Findings indicated that North Dakota college students consumed illicit drugs at prevalence that were mostly lower than the National college student prevalence for 2006. The North Dakota (2008) and U.S. (2006) prevalence for each of the following drugs were as follows: amphetamines (1.4 percent vs. 3.1 percent); cocaine (0.7 percent vs. 2.2 percent); sedatives (0.7 percent vs. 2.0 percent); hallucinogens (0.6 percent vs. 1.1 percent); designer drugs (1.0 percent vs. 0.9 percent); opiates (0.4 percent vs. 0.6 percent); inhalants (0.4 percent vs. 0.5 percent); steroids (0.4 percent vs. 0.4 percent); other (0.5 percent vs. 0.8 percent) (NDCORE, 2009; Core Institute, 2009). Figures from the 2008 NDCORE survey were notably lower than those from the year 2006, with the only increase in use of designer drugs (NDCORE, 2009).

## **COCAINE USE IN PAST YEAR**

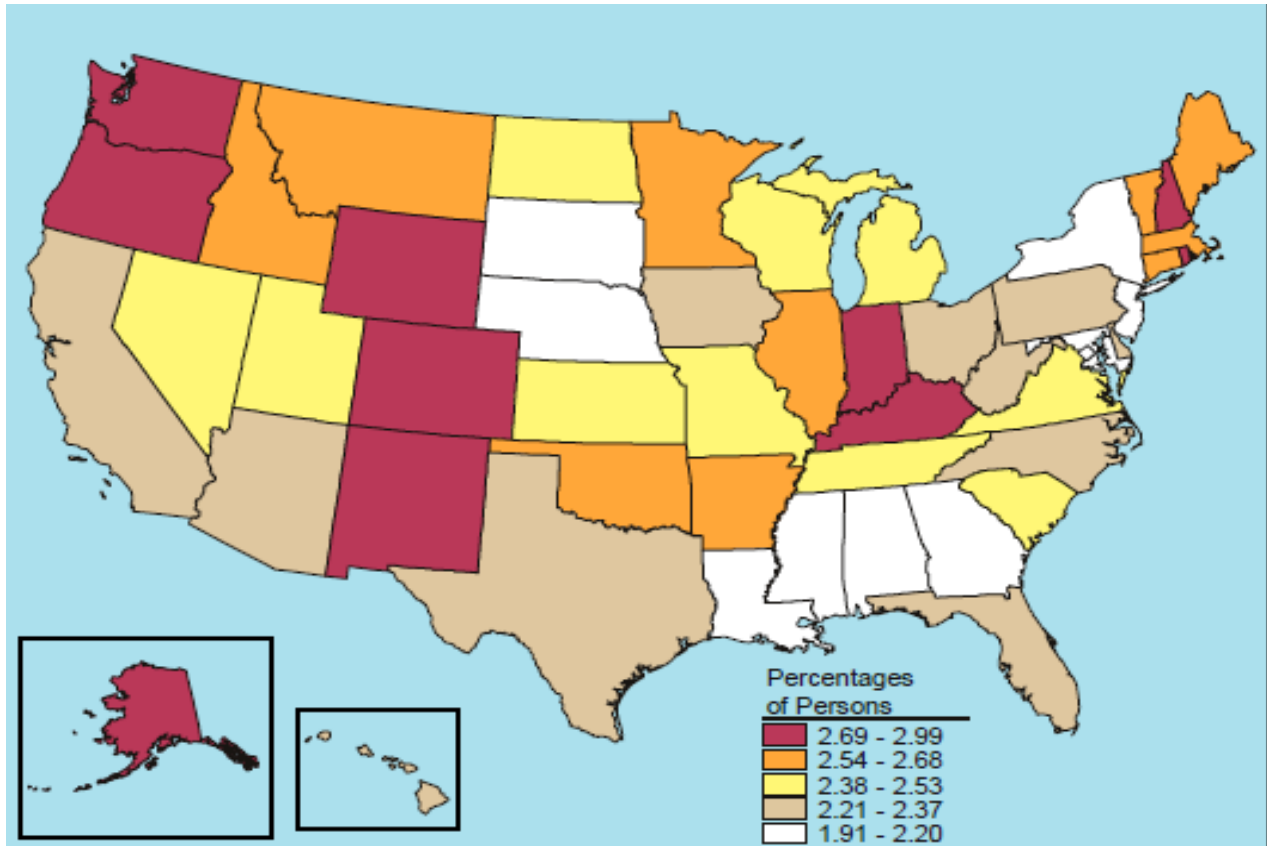
In the NSDUH (2006-2007), respondents were asked whether they had used cocaine in the past year. North Dakotans aged 12 and older used this drug at a prevalence that warranted classification into the lowest-ranked U.S. state grouping which had prevalence figures of 1.6-2.0 percent (Hughes et al., 2009). North Dakotans aged 12-17 were categorized in the fourth-highest ranked grouping of U.S. states, which had prevalence of 1.3-1.4 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states, which had annual cocaine use prevalence of 3.7-5.8 percent. Finally, North Dakota residents aged 26 years and older were classified in the lowest-ranked grouping of U.S. states which had cocaine use prevalence ranging from 1.0 to 1.4 percent (Hughes et al., 2009).

## **PAINKILLER USE**

During 2006-2007, NSDUH respondents were asked whether they had engaged in non-medical use of painkillers in the past year. North Dakotans aged 12 and older used these drugs at a prevalence that warranted classification into the lowest-ranked U.S. state grouping which had a prevalence of 3.4-4.2 percent (Hughes et al., 2009). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states, which had a prevalence of 6.6-7.3 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states, which had painkiller use prevalence of 8.7-10.3 percent. Finally, North Dakota residents aged 26 years and older were classified in the fourth-highest ranked grouping of U.S. states, which had painkiller use prevalence ranging from 2.1 to 2.9 percent (Hughes et al., 2009).

## **DRUG DEPENDENCE OR ABUSE**

NSDUH respondents (2006-2007) were asked whether they had any illicit drug dependence or abuse in the past year. North Dakotans aged 12 and older had dependence/abuse that warranted classification into the lowest-ranked U.S. state grouping, which had prevalence figures of 2.1-2.6 percent (Hughes et al., 2009). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states, which had a prevalence of 3.8-4.1 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states which had dependence/abuse prevalence of 5.9-7.1 percent. Finally, North Dakota residents aged 26 years and older were classified in the lowest-ranked grouping of U.S. states, which had dependence/abuse prevalence ranging from 1.1 to 1.4 percent (Hughes et al., 2009).



NOTE: Any illicit drug includes marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or any other illicit substance.

# Illicit Drug Consequences in North Dakota

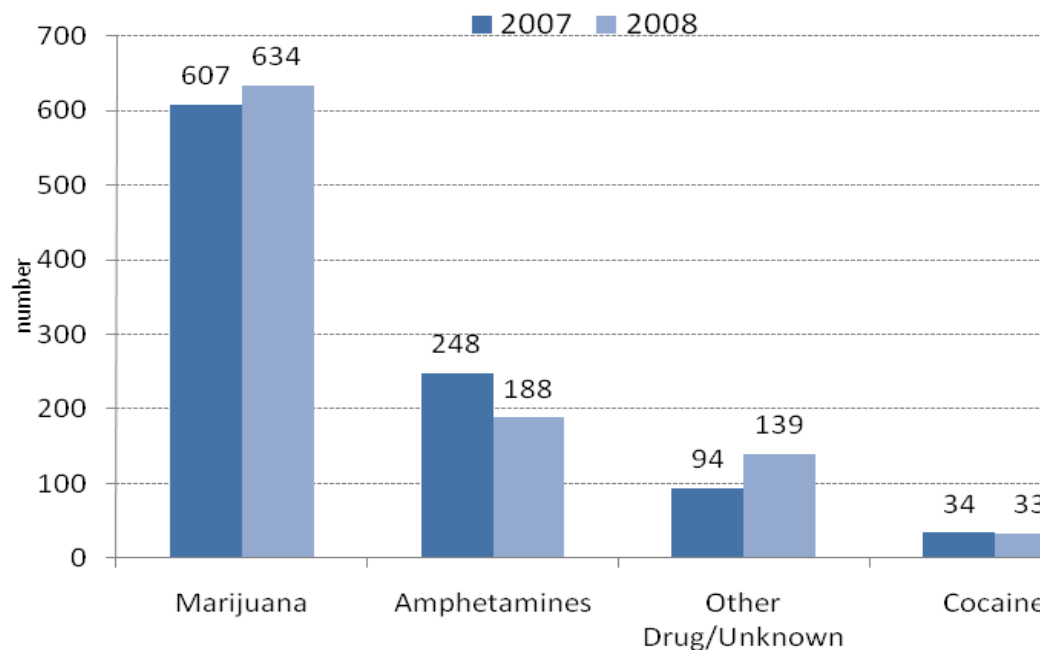
## NEEDING TREATMENT BUT NOT RECEIVING IT

In the NSDUH (2006-2007), respondents were asked whether they needed drug treatment but did not receive it in the past year. North Dakotans aged 12 and older warranted classification into the lowest-ranked U.S. state grouping which had prevalence of 1.9-2.3 percent (Hughes et al., 2009). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states, which had prevalence figures of 3.4-3.9 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states, which had prevalence figures of 5.3-6.5 percent. Finally, North Dakota residents aged 26 years and older were classified in the lowest-ranked grouping of U.S. states, which had dependence prevalence ranging from 0.0 to 1.3 percent (Hughes et al., 2009).

## GETTING DRUG TREATMENT

According to the Treatment Episode Data Set (TEDS), marijuana (634 admissions) was the most commonly abused drug for which people sought professional outpatient treatment in North Dakota in 2008; this figure was up slightly from 607 marijuana outpatient admissions in 2007 (**Figure 27**).

**Figure 27: Illicit Drug Treatment Admissions, North Dakota, 2007**



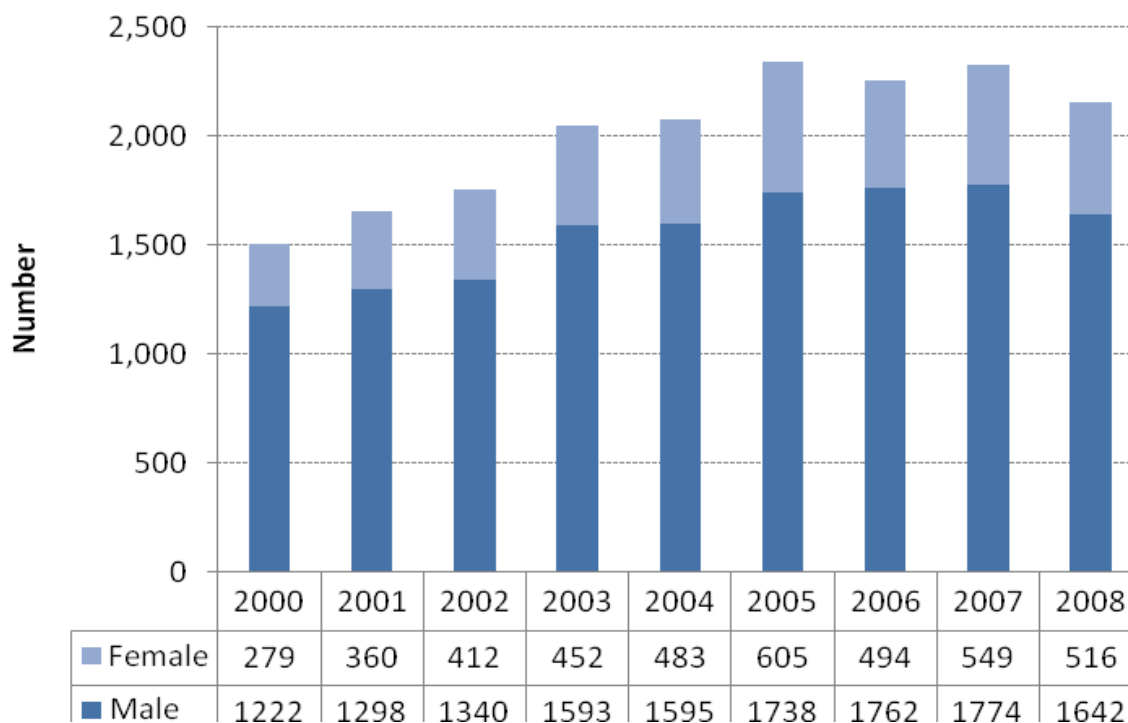
Source: Treatment Episode Data Set

Amphetamines were the second most commonly abused drug with 188 admissions in 2008. Among the other drug-related treatment admissions, 33 admits were for cocaine addiction and 139 admits were for some other drug (TEDS, 2008). Men comprised 69.2 percent of marijuana admissions and 51.6 percent of amphetamine admissions in North Dakota in 2008. Whites comprised 77.8 percent of marijuana admissions and 85.1 percent of amphetamine admissions. American Indians, totaling 5 percent of the state's population, comprised 15.8 percent of the marijuana admissions and 11.2 percent of the amphetamine admissions in 2008. Marijuana clearly is a teen problem, as those aged 12-17 years comprised 29.3 percent (i.e., the largest share) of marijuana admissions in 2008. For amphetamines, admitted persons in North Dakota were most commonly aged 21 to 25 years. In comparing North Dakota and U.S. treatment admissions for illicit drugs in 2007, North Dakota had a higher percentage of admissions being for marijuana and amphetamines and a lower percentage for cocaine and heroin (TEDS, 2008). Compared to the previous year (2007), North Dakota's 2008 treatment admissions had increases in numbers for alcohol and marijuana addiction and decreases for amphetamine addiction.

## DRUG ARRESTS

In North Dakota, drug arrests have increased 44 percent since 2000 (**Figure 28**).

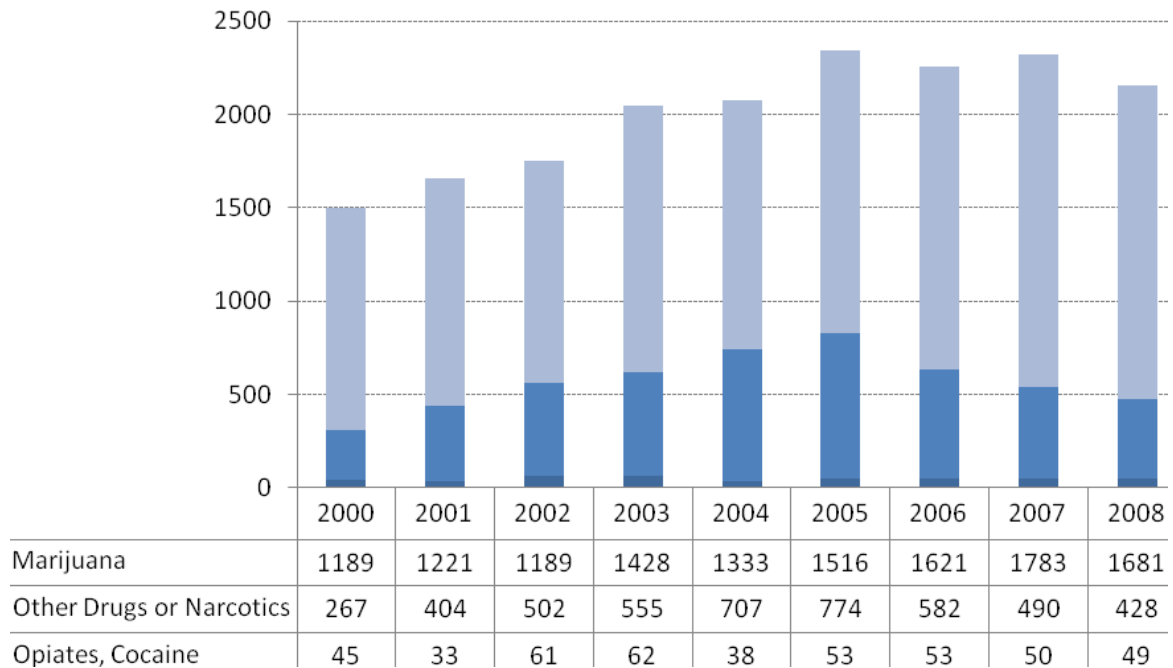
**Figure 28: Drug Arrests by Gender, North Dakota**



Source; ND Office of Attorney General, BCI, 2009

Large increases have been noted for both males and females. Regarding drug arrests by type, marijuana remains the number one drug. Arrests for “other drugs and narcotics,” including amphetamines, steadily increased to its peak prevalence in 2005, but has substantially dropped off in 2006 through 2008 (ND OAG, 2009) **(Figure 29)**.

**Figure 29: Drug Arrests by Type of Drug, North Dakota**

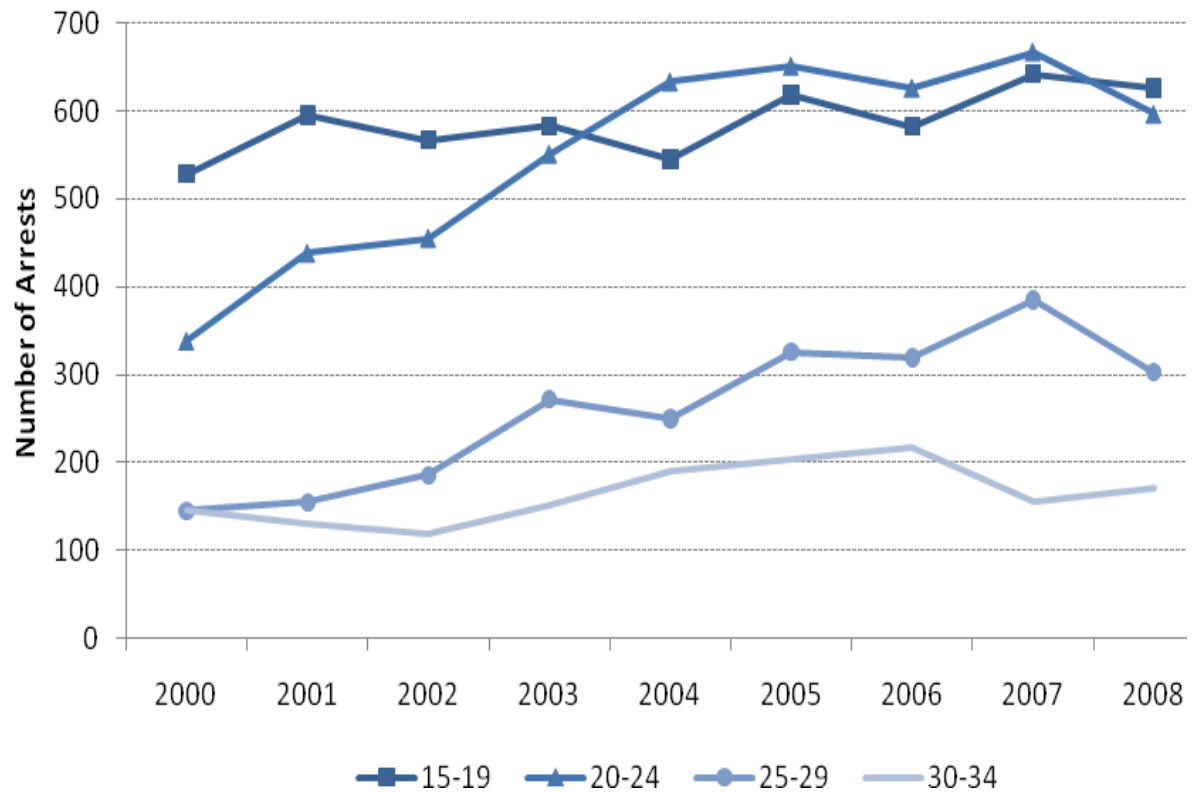


Source: ND Office of the Attorney General, BCI, 2009

NOTE: Meth is included in the 'Other Drugs' category.

Regarding drug arrests in North Dakota, ages 15 to 24 years account for 56.6 percent of arrests **(Figure 30)**. Large percentage increases in arrests were noted since 2000 for persons aged 15 to 29 years (ND OAG, 2009).

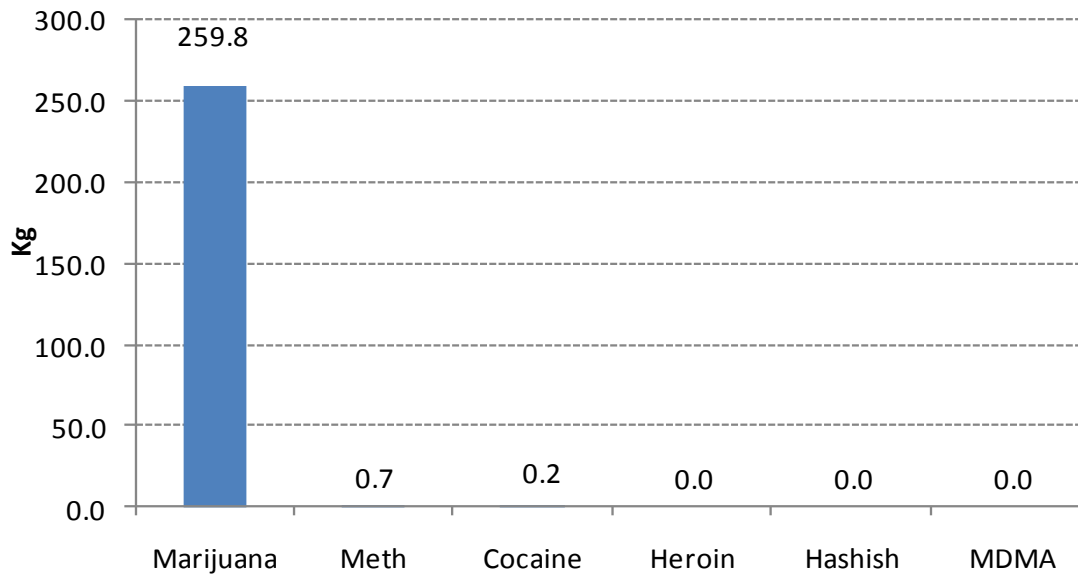
**Figure 30: Drug Arrests by High-Risk Age Groups, North Dakota**



Source: ND Office of Attorney General, BCI, 2009

In North Dakota, federal Drug Enforcement Administration (DEA) drug violation arrests in 2008 netted the following drugs in the specified quantities: marijuana (260 Kg); methamphetamine (0.7 Kg); and cocaine (0.2 Kg) (**Figure 31; DEA, 2009**).

**Figure 31: Federal Drug Seizures, North Dakota, 2008**

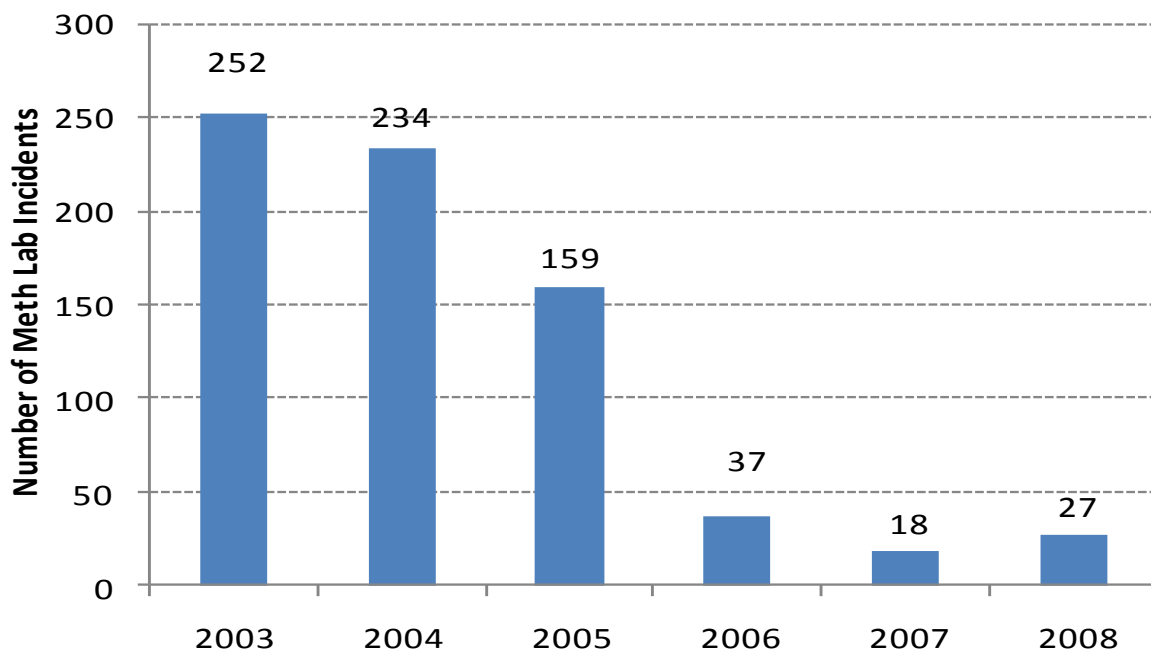


Source: U.S.DEA; [http://www.justice.gov/dea/pubs/state\\_factsheets/northdakota2008.html](http://www.justice.gov/dea/pubs/state_factsheets/northdakota2008.html)



According to the U.S. Drug Enforcement Administration (2007), there were 7,347 meth lab incidents in the U.S. in 2006. According to the DEA, the number of meth lab incidents in North Dakota decreased from 252 in 2003 to 27 in 2008 (**Figure 32**).

**Figure 32: Methamphetamine Lab Incidents, North Dakota**

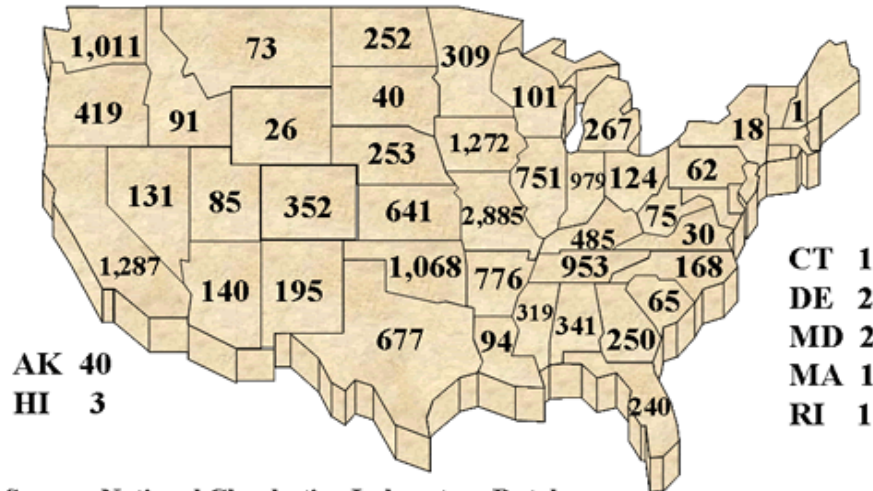


Source: U.S. Drug Enforcement Agency (2009); [http://www.justice.gov/dea/concern/map\\_lab\\_seizures.html](http://www.justice.gov/dea/concern/map_lab_seizures.html)

Clandestine meth lab seizures included laboratories, manufacture chemicals only, manufacture equipment only, or dumpsites (DEA, 2005). **Figure 33** depicts the dramatic decline in the number of meth lab seizures for North Dakota and all other states from 2003 to 2008. In 2005, the state of North Dakota followed the lead of other states, by restricting the availability of cold medicines containing pseudoephedrine. The restriction of pseudoephedrine, one of the key ingredients in manufacturing methamphetamine, was part of a nationwide movement to cut meth use, and may in part explain these sharp declines in lab seizures.

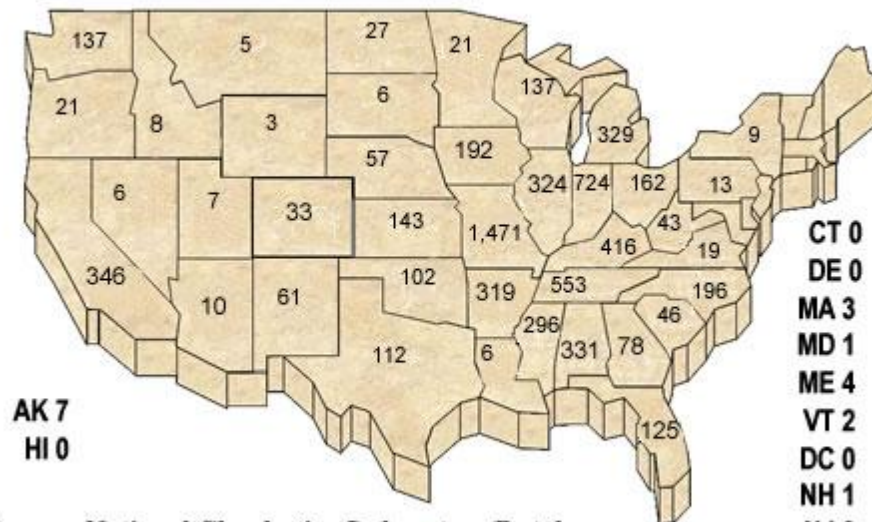
Figure 33: Nationally Reported Methamphetamine Seizures, 2003 and 2008

**Total of All Meth Clandestine Laboratory Incidents  
Including Labs, Dumpsites, Chem/Glass/Equipment  
Calendar Year 2003**



Source: National Clandestine Laboratory Database  
Total: 17,356/ 47 States Reporting  
Dates: 01/01/03 to 12/31/03

**Total of All Meth Clandestine Laboratory Incidents  
Including Labs, Dumpsites, Chem/Glass/Equipment  
Calendar Year 2008**



Source: National Clandestine Laboratory Database  
Total: 6,783  
Dates: 01/01/2008 - 12/31/2008

Map last updated March 2009

Source: U.S. Drug Enforcement Agency (2009); [http://www.justice.gov/dea/concern/map\\_lab\\_seizures.html](http://www.justice.gov/dea/concern/map_lab_seizures.html)

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# Appendix A: Charter

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North Dakota

State Epidemiological Outcomes Workgroup

CHARTER (Updated March 2010)

## OVERVIEW OF THE SEOW

### Mission:

Utilize relevant state, tribal, and local data to guide substance use prevention planning, programming and evaluation.

### Principles of the SEOW:

Five principles direct the work of the North Dakota State Epidemiological Outcomes Workgroup (SEOW):

- The prevention framework throughout ND addressing substance use and consequences will be outcomes based.
- A public health approach will be used when developing the prevention framework.
- The prevention framework will be developed using epidemiological data.
- The framework will be developed addressing the unique issues of North Dakota involving our rurality and cultural diversity.
- The SEOW will use a collaborative process inviting tribal and state agencies, skilled professionals, community based programs and other identified stake holders at all stages of its work.

### Functions of the SEOW:

- Systematically analyze the causes and consequences of the usage of Alcohol, Tobacco, and Other Drugs (ATOD) in order to effectively and efficiently utilize prevention resources
- Promote decision making based on reliable data throughout the State substance use prevention system
- Facilitate interagency and community collaboration
- Provide a mechanism for exchange, access, and utilization of data across organizations related to substance use and consequences.

### Organizational Overview:

### Lead Agency:

The lead agency for North Dakota's SEOW is the Department of Human Services, Division of Mental Health and Substance Abuse Services.

#### Structure:

The North Dakota SEOW is comprised of a core group with time allocated for the completion of work outside the SEOW meetings, and general membership from state, tribal, and community agencies and organizations that will provide the direction and guidance for the work of the SEOW.

#### Data Collection:

The North Dakota SEOW will collect and analyze data to support a framework for advancing the North Dakota prevention system's mission. The data will be summarized in an epidemiological profile that will characterize consumption patterns and consequences of various substances in the state of North Dakota. These substances include alcohol, tobacco, and other drugs such as methamphetamines, marijuana, and prescription drugs. Data will be collected from a variety of state agencies. Data will include race, gender, and race/ethnicity where available. Additionally, sub-state data sources will be collected. In addition, data gaps will be identified at a state and local level.

Members of the SEOW will share data collection instruments to develop a data inventory. Data from already developed reports, including spreadsheets and graphic data will be supplied to the epidemiologists for the purposes of developing the epidemiological profiles and the National Outcome Measures (NOMs) data collection plan.

#### Time Frames for SEOW Work Completion:

ND SEOW Contract Initiated

March 15, 2006

SEOW Expiration: The work of the SEOW will be ongoing.

#### SEOW Members:

##### Contractual and Division Staff:

SEOW Project Director

Don Wright

Asst. Director of Division of Substance Abuse & Mental Health Services

5% FTE

Responsibilities:

- Attend SEOW meetings



- Monitor work of SEOW
- Submit regularly scheduled progress reports/deliverables
- Monitor budget

Internal Research Consultant

Elizabeth Cunningham

Research Analyst, ND Department of Human Services

Responsibilities:

- Provide technical assistance to contracted SEOW staff
- Attend SEOW meetings
- Consult with epidemiologists on assessment methods

Project Staff

Pamela Sagness

Prevention Administrator, Division of Substance Abuse & Mental Health Services

10% FTE

Responsibilities:

- Facilitate the SEOW meetings
- Provide technical assistance to the SEOW

SEOW Epidemiologists:

Dr. Kyle Muus

Center for Rural Health, University of North Dakota

40% FTE

Responsibilities:

- Attend all SEOW meetings
- Communicate with agencies and organizations to receive reports and data files
- Review supporting databases
- Design, conduct, and analyze data
- Identify current assessment tools
- Reference sources of data and indicators used for Epi Profiles
- Draft, with SEOW member guidance, the Epi Profiles
- Prepare presentation of the Epi Profiles

SEOW Process Evaluators:

Dr. Kevin Thompson

Criminal Justice Department, North Dakota State University

Student Intern

Criminal Justice Department, North Dakota State University

31% FTE

Responsibilities:

- Develop process evaluation methodology
- Write quarterly normative evaluations and final summative evaluation

Workgroup Members:

Workgroup members participate in the scheduled meetings of the SEOW.

Their responsibilities include:

- Attending the scheduled meetings of the SEOW
- Providing updated, relevant data on substance use and consequences
- Providing direction in the analysis and interpretation of the data
- Provide direction and guidance for the development of the Epi Profiles

Agencies and organizations currently participating in the SEOW include the following (Updated 03/2010):

Agency/Organization	Individual Representative(s)	Title
Dacotah Foundation	Doreen Eichele	Chief Operating Officer
Mental Health America of North Dakota	Susan Helgeland	Executive Director
ND Department of Corrections and Rehabilitation	Patrick Foley	Research and Program Evaluation
	Rick Hoekstra	Director of Programs & Treatment Services
	Melanie Flynn	James River Correctional Center
ND Department of Health	Clint Boots	Division of Tobacco Prevention and Control Data Analyst
	Terry Dwelle	State Health Officer
	Devaiah Muccatira	Research Analyst III State System Development Initiative Coordinator
	Melissa Parsons	BRFSS Program Director
	Diana Read	Injury Prevention and Control
	Neil Charvat	Outreach/Disparities Coordinator
	Stephen Pickard	Medical Epidemiologist

ND Department of Human Services	Don Wright	Division of Mental Health & Substance Abuse Services Assistant Director
	Pamela Sagness	Division of Mental Health & Substance Abuse Services Prevention Administrator
	Elizabeth Cunningham	Decision Support Services Research Analyst
	Laura Anderson	Division of Mental Health & Substance Abuse Services PRMC Administrator
	Susan Wagner	Division of Mental Health & Substance Abuse Services Program Administrator
ND Department of Public Instruction	Valerie Fischer	Director of School Health
	Nita Wirtz	Coordinated School Health Manager
	Wayne Sanstead	State Superintendent
ND Department of Transportation	Chad Ihla	Traffic Safety Division, Research Analyst
	Carol Thurn	Safe Communities
	Francis G. Ziegler	Director
ND Highway Patrol	Col. James Prochniak	Superintendent
	Elizabeth Johnson	Research Analyst
	Mike Gerhart	Safety and Education Officer
ND Office of the Attorney General	Colleen Weltz	Bureau of Criminal Investigation UCR/IBR Program Manager
ND Students Against Destructive Decisions	Lee Erickson	Coordinator
ND State University	Student Intern	Project Evaluator
	Kevin Thompson	Criminal Justice & Political Science Professor & Department Chair
	Deb Gebeke	Extension Service Assistant Director
Office of the First Lady	Mikey L. Hoeven	First Lady
Office of the State Tax Commissioner	Kathy Strombeck	Research Analyst
Three Affiliated Tribes	Coby Rabbithead	Boys & Girls Club Prevention Coordinator

University of North Dakota	Kyle Muus	Center for Rural Health Assistant Professor & Senior Research Associate
	Jane Vangsness	ND Higher Education Consortium for Substance Abuse Prevention Director
Minot State University, Rural Crime and Justice Center	Rodney Hair	Director
	Matt Schaefer	Training and Research Associate
	Tom Volk	Region 1 Prevention Coordinator
	Amber Jensen	Region 2 Prevention Coordinator
	Kelsie Bye	Region 3 Prevention Coordinator
	Sarah Shimek	Region 4 Prevention Coordinator
	Danielle Schoeler	Region 5 Prevention Coordinator
	Ron Pfaff	Region 6 Prevention Coordinator
	Vacant	Region 7 Prevention Coordinator
	Holly Bloodsaw	Region 8 Prevention Coordinator
Turtle Mountain	Marianne Young Eagle	Public Health Nursing
	Dave Garcia	Prevention Coordinator
Spirit Lake	Lisa Burdick	Prevention Coordinator
Standing Rock	Deanne Bear Catches	Prevention Coordinator

Action Plan:

YEAR ONE:

Activities	Completion Date (mm/yy)
Key personnel orientation to SEOW	06-06
Attend national SEOW workshop	06-06
First SEOW meeting & member orientation	07-06
Develop Charter	08-06
Gather data instruments from participants; begin data inventory	08-06
Finalize and submit Charter for initial review	09-06
SEOW members begin draft format for Epi Profiles – review indicators and constructs	09-06

Review feedback and make changes to Charter based on recommendations	11-06
SEOW members make final recommendations for Epi Profiles	11-06
Draft of Epi Profiles completed and submitted	12-06
Review feedback on Epi Profiles and make recommended changes	01-07
Develop NOMs data collection plan	01-07
Document data sources and indicators into a Data Workbook and submit	02-07
Submit NOMs data collection plan	02-07
Final changes to Epi Profiles	02-07
Final changes to Charter	02-07
Submit final Epi Profiles	03-07
Submit final Charter	03-07
Submit final summative evaluation of the SEOW process	03-07

#### YEAR TWO:

Activities	Completion Date (mm/yy)
Attend national SEOW workshop	4-07
Select a data gap in consequences and/or consumption substance abuse indicators.	04-07
Develop a plan to address this gap and increase data capacity	06/07
Outline data limitations.	06/07
Narrative description of challenges related to data capacity encountered during community epi profile development process.	09/07
Submit final data gap plan	09/07
Develop a community level epidemiological profile	10/07
Submit community level epidemiological profile	
Submit NOMs data at the State and community level	01/08
Submit updated SEOW charter	02/08
Submit updated state epidemiologic profile	02/08

YEAR THREE:

Submit quarterly reports on all activities, progress, challenges, and technical assistance received or requested	06/08, 09/08, 12/08, 03/09
Attend national SEOW workshop	04/08
Determine materials relating to dissemination of materials developed for legislatures, prevention groups, public, etc.	07/08
Submit final dissemination plan	07/08
Update plan outlining the community data gap selected, and action items describing how the gap has been addressed to increase data capacity	09/08
Submit final data gap plan	09/08
Update or new community level epidemiological profile	10/08
Submit final community level epidemiological profile	10/08
Develop a plan outlining steps taken and future plans for maintaining the SEOW, profile distribution, progress monitoring, and evaluating prevention projects	01/09
Submit NOMs data at the State and community level	01/09
Update State epidemiological profile	02/09
Submit SEOW sustainability plan	03/09

YEAR FOUR:

Activities	Completion Date (mm/yy)
Progress reports	07/09, 10/09, 01/10, 04/10
Dissemination Plan or Update	10/09
Sustainability Plan or Update	01/10
Substance Abuse Monitoring System	02/10
Charter Work Plan & Goals	03/10
State Epidemiological Profile or Update	03/10
NOMs Community Data	03/10
Community Profile or Update	03/10

### Process Evaluation Plan:

Process evaluations will consist of quarterly evaluation reports assessing the successful process of the SEOW workgroup. Formative evaluations will be submitted to the group and the Project Director. A summative process evaluation report will be submitted in March of every year. The evaluation methodology used will primarily consist of observing group meetings and ensuring that the group is successfully meeting required dates and deadlines.

### Structural Linkages:

State level agencies and organizations represented on the SEOW are related to education, health, mental health services, law enforcement, corrections, human services, treatment, transportation, and administration. These agencies are charged with developing and implementing policy, program planning, and working with community and statewide agencies and organizations to deliver programs to the citizens of North Dakota. Most of these agencies collect and analyze various types of substance use data.

The Native American population is represented by reservation programs. The SEOW will continue to pursue additional representation.

Several regional, community, tribal and statewide organizations, charged with program delivery, are represented on the SEOW. Several of these organizations collect and analyze data for their own programs, as well as use data provided by the state agencies. These organizations represent higher education, youth organizations, mentoring programs, and community coalitions.

### Information Sharing:

Information regarding SEOW activities and procedures is shared between members through the SEOW facilitator and support staff, primarily through email and at meetings. Agendas, meeting minutes, deliverables, and support documentation will be sent to all members. SEOW information can be accessed from the ND DHS Prevention website ([www.nd.gov/dhs/prevention](http://www.nd.gov/dhs/prevention)).

### Sustainability:

The SEOW will continue to update the sustainability plan and remains committed to this effort.

Charter was unanimously approved by workgroup on January 31, 2007.

Updated Charter for year two was approved January 30, 2008.

Updated Charter for year four was approved March 15, 2010.

# Appendix B: North Dakota SEOW Committee Members

<b>NAME</b>	<b>AGENCY</b>	<b>CITY</b>
Ericka Wentz	North Dakota State University	Fargo
Clint Boots	North Dakota Department of Health	Bismarck
Melissa Parsons	North Dakota Department of Health	Bismarck
Terry Dwelle	ND Department of Health	Bismarck
Lee Erickson	North Dakota SADD	Hillsboro
Patrick Foley	ND Dept. of Corrections/Rehabilitation	Bismarck
Melanie Flynn	ND Dept of Corrections/Rehabilitation	Bismarck
Mike Gerhardt	ND Highway Patrol	Bismarck
Deb Gebeke	NDSU Extension Service	Fargo
Lynn Heinert	ND Department of Transportation	Bismarck
Mikey Hoeven	Office of the First Lady	Bismarck
Devaiah Muccatira	ND Department of Health	Bismarck
Susan Helgeland	Mental Health America of ND	Bismarck
Kyle Muus	University of North Dakota	Grand Forks
James Prochniak	North Dakota Highway Patrol	Bismarck
Melissa Parsons	ND Department of Health	Bismarck
Nita Wirtz	ND Department of Public Instruction	Bismarck
Stephen Pickard	ND Department of Health	Bismarck
Pamela Sagness	ND Department of Human Services	Bismarck
Wayne Sanstead	ND Department of Public Instruction	Bismarck
Kathy Strombeck	ND Office of the State Tax Commissioner	Bismarck
Kevin Thompson	North Dakota State University	Fargo
Jan Vangsness	North Dakota State University	Fargo
Colleen Weltz	ND Office of the Attorney General	Bismarck
Susan Wagner	ND Department of Human Services	Bismarck
Don Wright	ND Department of Human Services	Bismarck



Francis Ziegler	ND Department of Transportation	Bismarck
Rodney Hair	Minot State University, Rural Crime/Justice Center	Minot
Matt Schaefer	Minot State University, Rural Crime/Justice Center	Minot
Carol Thurn	ND Department of Transportation	Bismarck
Neil Charvat	ND Department of Health	Bismarck
Chad Ihla	ND Department of Transportation	Bismarck
Valerie Fischer	ND Department of Public Instruction	Bismarck
Elizabeth Cunningham	ND DSS	Bismarck
Laura Anderson	ND PRMC	Bismarck
Diana Read	ND Department of Health	Bismarck
Elizabeth Johnson	ND Highway Patrol	Bismarck
Marianne Young Eagle	Turtle Mountain Indian Reservation	Belcourt

Prevention Coordinators:

Tom Volk – Region 1; Amber Jenson – Region 2; Kelsie Bye – Region 3; Sarah Shimek – Region 4; Ron Pfaff – Region 5; Danielle Schoeler – Region 6; vacant – Region 7; Holly Bloodsaw – Region 8; Coby Rabbithead – Three Affiliated Tribes; Dave Garcia – Turtle Mountain; Lisa Burdick – Spirit Lake; DeAnne Catches – Standing Rock

## Appendix C: Data Sources Used

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Appendix C. Data Sources Used					
Data	Description	Sponsoring Agency	Years	North Dakota Data Contributors/Contacts	Location
Alcohol Consumption and Sales	Alcohol consumption and sales for ND and US	NIAAA	1990-2007	Kathy Strombeck, ND OSTC	<a href="http://www.niaaa.nih.gov/Resources/DatabaseResources/QuickFacts/AlcoholSales/default.htm">http://www.niaaa.nih.gov/Resources/DatabaseResources/QuickFacts/AlcoholSales/default.htm</a>
American Indian Health Risk Data	Health risk information on ND American Indians	UND CHPPR	2004	Nancy Vogeltanz-Holm, Jeff Holm, UND CHPPR	<a href="http://www.med.und.nodak.edu/depts/chptr/">http://www.med.und.nodak.edu/depts/chptr/</a>
BRFSS	Annual state survey of adults ages 18+	CDC; ND DoH	1999-2008	Dr. Stephen Pickard, Melissa Parsons, Clint Boots, ND DoH	<a href="http://www.cdc.gov/brfss/index.htm">http://www.cdc.gov/brfss/index.htm</a>
Cancer Mortality	Cancer mortality rates, ND vs. US	National Cancer Institute	1990-2006	Joyce Sayler and Marlys Knell, ND DoH	<a href="http://statecancerprofiles.cancer.gov/index.html">http://statecancerprofiles.cancer.gov/index.html</a>
Child Abuse and Neglect	Annual numbers of child abuse and neglect incidents and victims	ND KIDS COUNT	1996-2003	Richard Rathge, Executive Director, ND KIDS COUNT	<a href="http://www.ndkidscount.org/">http://www.ndkidscount.org/</a>
CORE Survey	Survey conducted periodically with ND college students	ND HECSAP	1994, 2003-5, 2006, 2008	Jane Vangsness, ND HECSAP	<a href="http://www.und.edu/org/ndhec/">http://www.und.edu/org/ndhec/</a> <a href="http://www.siu.edu/~coreinst/">http://www.siu.edu/~coreinst/</a>
Domestic Violence	Domestic violence statistics for ND	ND OAG	1998-2001	Colleen Weltz, ND OAG, BCI	<a href="http://www.ag.state.nd.us/Reports/BCIReports/Domvio2001.pdf">http://www.ag.state.nd.us/Reports/BCIReports/Domvio2001.pdf</a>
MVC Fatality Rate	Motor vehicle crash fatality rate per 100,000	US DOT; FARS	1995-2008	Lynn Heinert, ND DOT	<a href="http://www.dot.nd.gov/">http://www.dot.nd.gov/</a>
MVCs	Number of annually reported ND MVCs with alcohol involvement	ND DOT; FARS	2001-2008	Chad Ihla and Lynn Heinert, ND DOT	<a href="http://www.dot.nd.gov/">http://www.dot.nd.gov/</a> <a href="http://www-fars.nhtsa.dot.gov/">http://www-fars.nhtsa.dot.gov/</a>
National Survey on Drug Use and	Data on substance use among persons	SAMHSA	2007-2008	Don Wright, ND DHS	<a href="http://oas.samhsa.gov/">http://oas.samhsa.gov/</a>

Health	aged 12+				
ND Criminal Offender and Crime Reporting	Number of offenses and reported crimes in ND	ND OAG, BCI	1998-2008	Colleen Weltz, ND OAG, BCI	<a href="http://www.ag.state.nd.us/">http://www.ag.state.nd.us/</a> <a href="http://www.ag.state.nd.us/Reports/BCIReports/CrimeHomicide/Crime05.pdf">http://www.ag.state.nd.us/Reports/BCIReports/CrimeHomicide/Crime05.pdf</a>

Appendix C - Data Sources Used (continued)					
Data	Description	Sponsoring Agency	Years	North Dakota Data Contributors/Contacts	Location
ND Inmate Population	Characteristics of ND prison inmates	ND DCR	2000-2009	Patrick Foley, NDDOCR	<a href="http://www.state.nd.us/docr/">http://www.state.nd.us/docr/</a>
PRAMS	Health risk data on pregnant women	CDC	2002	Devaiah Muccatira, ND DHS, DoH	<a href="http://www.cdc.gov/prams/">http://www.cdc.gov/prams/</a>
Sexual assault	Sexual assault and violence data on ND college students	North Dakota CAWS	2004	North Dakota CAWS	"Experiences of and Attitudes about Sexual Assault, Violence, and Stalking Among North Dakota College Students," by S. Steiner & K. Kraft
Smoking-Attributable Mortality	Smoking-attributable mortality rates for ND vs. all other states	CDC NCCDPHP	1996-2004	Clint Boots, ND DoH	<a href="http://www.cdc.gov/tobacco/research_data/economics/mm5425_intro.htm">http://www.cdc.gov/tobacco/research_data/economics/mm5425_intro.htm</a> .
TEDS		SAMHSA	2008	Don Wright and Myrna Bala, ND DHS	<a href="http://www.dasis.samhsa.gov/web/New Mapv1.htm">http://www.dasis.samhsa.gov/web/New Mapv1.htm</a>
Vital Statistics, ND vs. US	Substance-related mortality incidence and rates	ND DVR; NCHS	2008	Carmell Barth, ND DoH, DVR	<a href="http://wonder.cdc.gov/">http://wonder.cdc.gov/</a>
YRBS	State survey conducted every 2 years among students in grades 9-12	CDC; ND DPI	1995-2009	Nita Wirtz, ND DPI	<a href="http://apps.nccd.cdc.gov/YRBS/SelectHealthTopic.asp?Loc=ND">http://apps.nccd.cdc.gov/YRBS/SelectHealthTopic.asp?Loc=ND</a>



## Appendix D: Data Sources Not Used

Appendix D. Data Sources Not Used				
Document Name	Type & Description	Date	Author(s) and Publisher	Reason for Non-Use
The Survey of Student Resources and Assets.	Report; details sub-state survey findings among students in grades 6-12; includes a variety of topics including health risk behaviors.	2006	America's Promise & Search Institute. Minneapolis, MN: Search, Inc.	Sub-state information; beyond the Epidemiological Profile's scope
American College Health Association-National College Health Assessment: Reference Group Executive Summary.	Report; details national findings of a survey that was used by a few ND universities, including UND.	2005	American College Health Association. Baltimore: Author.	National survey findings of a survey that was not used throughout the ND University System
Behavioral Health Dashboard Indicators: All Students Attending UND.	Summary Table; Snapshot of health risks among UND students, 2000-2006.	2006	UND Student Health Services. Grand Forks, ND: Author.	Sub-state information; beyond the Epidemiological Profile's scope
Behavioral Health Status Report 2005.	Report; details health risk behaviors among UND students.	2005	Chen, J., & Allery, A. Grand Forks, ND: UND.	Sub-state information; beyond the Epidemiological Profile's scope
2005 North Dakota High School (Grades 9-12) YRBS: Summary of the National, Statewide, Regional & Urban/ Rural Results.	Report; summarizes YRBS survey findings on health risk behaviors among ND students in grades 9-12.	2005	Division of Adolescent and School Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.	Sub-state information; beyond the Epidemiological Profile's scope
Community Readiness Survey: One Size Does Not Fit All.	Report; details findings of a state regional survey of adults on perceptions of substance problems.	2005	Minnesota Institute of Public Health. Mounds View, MN: Author.	Sub-state information; beyond the Epidemiological Profile's scope



Appendix D - Data Sources Not Used (continued)

Document Name	Type & Description	Date	Author(s) and Publisher	Reason for Non-Use
North Dakota Community Action Association: Needs Assessment Questionnaire.	Questionnaire; used in some ND communities to assess the needs of low income persons and families.	Undated	North Dakota Community Action Association.	No data; questionnaire used at the local level.
Community Perception Survey: Region VIII, North Dakota.	Questionnaire; survey of parents or guardians on perceptions of alcohol, tobacco, and other drug use.	2005	Region VIII Prevention, Community Action Partnership, Dickinson, ND.	No data; questionnaire used at the sub-state level
Law Enforcement Survey on Underage Drinking.	Questionnaire; survey of ND regional law enforcement officers.	Undated	Region VIII Prevention, Community Action Partnership, Dickinson, ND.	No data; questionnaire used at the sub-state level
Youth and Young Adult Perception Survey: Region VIII, North Dakota.	Questionnaire; survey of youth and young adults on perceptions of alcohol, tobacco, and other drug use.	Undated	Region VIII Prevention, Community Action Partnership, Dickinson, ND.	No data; questionnaire used at the sub-state level
School Health Profiles.	Brochure; details information about profiles that can be developed for U.S. schools.	2006	U.S. Department of Health & Human Services, CDC.	No data; profiles are specific to individual schools

## Appendix E: Constructs for Alcohol, Tobacco, and Illicit Drug Use and Consequences

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Appendix E: Constructs for Alcohol, Tobacco, and Illicit Drug Use and Consequences	
	Mean Rating Score
Alcohol Consequence Constructs	
Mortality and Morbidity	3
Motor vehicle crashes	3
Crime	2.5
Dependence or abuse	3
Tobacco Consequence Constructs	
Mortality and Morbidity	3
Crime	1.5
Dependence or abuse	2.75
Illicit Drug Consequence Constructs	
Mortality and Morbidity	3
Motor vehicle crashes	2.5
Crime	3
Dependence or abuse	3
Alcohol Use Constructs	
Current use	2.5
Current binge drinking	2.75
Heavy drinking	3
Age of initial use	3
Drinking and driving	3
Consumption per capita	2.5
Tobacco Use Constructs	
Current use	2.25
Daily use	2.75
Age of initial use	3
Consumption per capita	2.5
Illicit Drug Use Constructs	
Current use	2.75
Lifetime use	2
Age of initial use	3
Note: Mean rating scores ranged from 1 (low) to 3 (high); scores were derived from a ND SEOW monthly meeting where grouped committee members considered these constructs and rated them based on their perceived quality and utility for North Dakota; constructs with mean scores of 1.5 or lower were targeted for exclusion from the Epidemiological Profile	



## Appendix F: Indicators for Alcohol, Tobacco, and Illicit Drug Use and Consequences

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Appendix F: Indicators for Alcohol, Tobacco, and Illicit Drug Use and Consequences			
Alcohol Consumption Indicators	Mean Rating	Source	Action
30-Day alcohol use	2.75	YRBS BRFSS NSDUH	U
Age started drinking regularly	3		O-NU
Age of first Alcohol use	2.75	YRBS	U
% of students reporting drunk or high at school	2.75		U
Heavy drinkers (adult: men >2 drinks/day; women >1 drink/ day)	2.5	BRFSS	U
Lifetime Alcohol Use	3	YRBS	U
Number of liquor licenses	3	NDDOR	O-NU
Per capita consumption (all beverages), based on population >14 years	3	NIAAA	U
% of students reporting drinking >4 drinks at least once in the past 14 days	2.75		O-ND
% of students reporting drinking >4 drinks at least once in the past 30 days	3	YRBS NSDUH BRFSS	U
% of women reporting alcohol use during pregnancy	3	NDVR	U
% of adults (18+) reporting driving after having “perhaps too much to drink” in past 30 days	2.75	BRFSS	U
% of case sales	3		O-ND
% of cash sales	2.5		O-NU
% of students drinking alcohol & driving car/other vehicles during the past 30 days	2	YRBS	U
% of students riding in car/other vehicle driven by someone drinking alcohol during the past 30 days	3	YRBS	U
% of students who had at least one drink of alcohol on school property on one or more of the past 30 days	2.5	YRBS	U
OTHERS:			
Number of parties attended			
Kegs sold			

How minors get access			
TAXABLE liquor sales			
Compliance checks			
Tribal and military alcohol use			
Alcohol Consequence Indicators:			
Chronic liver disease/cirrhosis deaths/100,000 population using ICD-10 codes K70-K74	2.5	CDC_w onder, NDVR	U
Suicides/100,000 population using ICD-10 codes X60-X84, Y87	3	CDC_w onder NDVR	U
The rate (per 100,000) of suicide deaths among youths aged 15 – 19	3	CDC_w onder	O-NU

Appendix F: Indicators for Alcohol, Tobacco, and Illicit Drug Use and Consequences (continued)			
Alcohol Consequence Indicators: (continued)	Mean Rating	Source	Action
Homicides/100,000 population using ICD-10 codes X85-Y09,Y87.1	2.5	CDC_w onder NVSS_ M NDVR	U
Vehicle & traffic deaths/100,000 population	2.25	US DOT	U
Motor vehicle crash death rate/100,000 for unintentional injuries among children <15 years	2.25	CDC_w onder NDVR	U
Motor vehicle crash death rate/100,000 for unintentional injuries among youth aged 15-24 from unintentional injuries	2.25	NDVR	O-NU
Motor vehicle crashes rate/100,000 of nonfatal injuries among children <15	2	NDVR	O-NU
Rate of other unintentional injuries	2.5	NDVR	O-NU
Unintentional accident deaths per 100,000 population	2	CDC_w onder	U
The death rate/100,000 due to unintentional injuries among children <15	2.25	NDVR	O-NU
Teen deaths by accident, homicides, & suicide:	3	KC	O-NU
Teen Deaths all Causes:	3	KC	O-NU
Infant Mortality:	2.25	KC	U
Child deaths:	2.5	KC	O-NU
Infant mortality rate/100,000 live births	2.25	NDVR	U
The child death rate/100,000 children aged 1-14	2.5	NDVR	O-NU
Percent of fatal Motor crashes that are Alcohol related	3	FARS NHTSA DOT	U
Alcohol-related vehicle Death Rate	3	FARS NHTSA DOT	U
% of Alcohol-involved drivers among all drivers in fatal crashes	3	FARS	U
Deaths caused by motor vehicle accidents	3	FARS	U
% of injury crashes that are alcohol-related	3	NHTSA DOT	U
% of non-fatal injuries that are alcohol-related	3	NHTSA DOT	U
% of property damage that is alcohol-related	3	NHTSA DOT	U
Rate of nonfatal injuries caused by motor vehicle crashes	2.25	NHTSA	O-NU



Rate of boating fatalities per year	2	USCG	O-NU
Total boating accidents per year	2.25	USCG	O-NU
Total boating fatal accident per year	2	USCG	O-NU
Total boating fatalities per year	2	USCG	O-NU
Number of boating injuries per year	2	USCG	O-NU
Number of boating accidents per year	1.75	USCG	O-NU
Number of boating fatalities with alcohol involvement	3	USCG	O-NU
Number of boating injuries with alcohol involvement	3	USCG	O-NU

Appendix F: Indicators for Alcohol, Tobacco, and Illicit Drug Use and Consequences (continued)			
Alcohol Consequence Indicators: (continued)	Mean Rating	Source	Action
Number of boating accidents with alcohol involved	3	USCG	O-NU
Number of violent crimes reported	2.75	NDBCI UCR	U
Number of murder, manslaughter reported	2.5	NDBCI UCR	U
Number of rapes reported	2.5	NDBCI UCR	U
Number of robberies reported	2.25	NDBCI UCR	U
Number of aggravated assaults reported	2.25	NDBCI UCR	U
Number of violent crimes arrests	2.75	NDBCI UCR	U
Number of murder, manslaughter arrests	2.5	NDBCI UCR	U
Number of rapes arrests	2.5	NDBCI UCR	U
Number of robberies arrests	2.5	NDBCI UCR	U
Number of aggravated assaults arrests	2.5	NDBCI UCR	U
DUI	3	NDBCI UCR	U
Liquor law violations	2.75	NDBCI UCR	U
Drunkenness	1.66667	NDBCI UCR	O-ND
Total number of domestic violence incidents	2.75	NDBCI	U
Total number of domestic violence arrests	3	NDBCI	U
Percent of persons aged 12 and older meeting DSM_IV criteria for alcohol abuse or dependence	3	NSDUH	U
Number of persons receiving treatment for alcohol-related disorders from licensed public treatment facilities, per 100000	2.75	TEDS	U
Number of North Dakota K12 alcohol related expulsions	3	SDFS	U
Number of North Dakota K12 alcohol related suspensions	3	SDFS	U

Number of EMS trauma response (MV incidents)	2.25	EMSP	O-NU
Number of EMS trauma response (fall) (EMSP)	1.75	EMSP	O-NU
Number of EMS trauma response (assault)	2.25	EMSP	O-NU
Number of EMS trauma response (altercation))	2	EMSP	O-NU
Number of EMS trauma response stabbing/gunshot)	2	EMSP	O-NU
Number of EMS trauma response (poisoning)	1.75	EMSP	O-NU
Number of EMS trauma response (water accidents)	2	EMSP	O-NU
Number of EMS trauma response (drowning)	1.75	EMSP	O-NU

Appendix F: Indicators for Alcohol, Tobacco,  
and Illicit Drug Use and Consequences (continued)

Alcohol Consequence Indicators: (continued)	Mean Rating	Source	Action
Number of EMS trauma response (firearm/self inflicted)	2.5	EMSP	O-NU
Number of EMS trauma response (suicide attempts)	3	EMSP	O-NU
Number of EMS trauma response (stabbing)	2	EMSP	O-NU
Number of EMS trauma response (sexual assault)	2.5	EMSP	O-NU
Number of EMS medical response (psychological/emotional)	2	EMSP	O-NU
Number of EMS medical response (acute alcohol intoxication)	3	EMSP	O-NU
Number of EMS medical response (poisoning)	1.75	EMSP	O-NU
Number of EMS medical response (intoxication)	2.5	EMSP	O-NU
OTHERS:			
Fetal Alcohol Syndrome/Effects			
Number of birth defects due to substance use			
Note: Use "per vehicle miles traveled"			
Farm implement accidents			
Campus alcohol consequences			
Tribal alcohol consequences			
Military alcohol consequences			
Emergency room data			

Action Key

U = Used

O-NU = Omitted, not useful

O-ND = Omitted, no data

Appendix F. Indicators for Alcohol, Tobacco and Illicit Drug Use and Consequences (continued)			
Tobacco Consumption Indicators	Mean Rating	Source	Action
Percent of students smoking cigarettes in the past 30 days	3	YRBS NSDUH	U
Percent of students using chewing tobacco or snuff in the past 30 days	3	YRBS	U
Percent of students using any tobacco in the past 30 days	3	YRBS	U
Percent of students smoking cigars, cigarillos, or little cigars in the past 30 days	3	YRBS	U
Percent of students smoking >1 cigarettes/day on the days they smoked in the past 30 days	2.75	YRBS	U
Percent of adults (18+) reporting smoking 100 cigarettes in their lifetime & now smoke everyday	1.25	BRFSS	O-NU
Percent of students smoking cigarettes on >19 of the past 30 days	2.75	YRBS	U
Percent of students ever smoked cigarettes daily (1+ cigarette/ every day for 30 days	3	YRBS	U
Percent of students ever trying cigarette smoking, even one or two puffs	1.75	YRBS	U
Have you smoked 100+ cigarettes in lifetime	2	BRFSS	O-NU
Percent of students reporting any use of cigarettes in their lifetime	1.75		O-NU
Percent of students reporting any use of smokeless tobacco in their lifetime	2.25	YRBS	U
Percent of students who smoked a whole cigarette for the first time < 13	2.75	YRBS	U
Age of first use of cigarettes	3		O-ND
Age of first use of smokeless tobacco	3		O-ND
Number of packets of cigarettes sold per capita	2.5		O-NU
Percent of students smoking > 10 cigarettes/day on the days that they smoked in the past 30 days	3	YRBS	U
Of smokers: on average, how many cigarettes/day do you now smoke	2.5		O-ND
Of smokers: During the past 30 days, how many days did you smoke cigarettes	2.5		O-ND
Of Smokers: on days when you smoked during the past 30 days, about how many cigarettes did you smoke a day?	2.25		O-ND
Percent of births to mothers smoking during pregnancy	3	NDVR	O-NU
Percent of students using chewing tobacco or snuff on school property on 1+ of the past 30 days	2.75	YRBS	U
Percent of students smoking cigarettes on school property on 1+ of the past 30 days	2.5	YRBS	U
Percent of students currently smoking & have tried to quit in the past 12 months	3	YRBS	U
OTHERS - Please list:			
Second-hand smoke			
Tribal and military tobacco use			

Appendix F. Indicators for Alcohol, Tobacco and Illicit Drug Use and Consequences (continued)			
Tobacco Consumption Indicators	Mean Rating	Source	Action
Lung cancer deaths per 100,000 population	3	CDC_w onder NDVR	U
Chronic lower respiratory diseases per 100,000 population	3	CDC_w onder, NDVR	U
Cardiovascular deaths per 100,000 population	3	CDC_w onder, NDVR	U
Percent of low birth weight babies	2	NDVR	U
Percent of live births weighing less than 2,500 g.	2.25	NDVR	U
Percent of live singleton births weighing less than 2,500 g.	2.25	NDVR	O-NU
Percent of live births weighing less than 1,500 g.	2.5	NDVR	O-NU
Percent of live singleton births weighing less 1,500 g.	2.5	NDVR	O-NU
Adults who have been told they currently have asthma	2	BRFSS	O-NU
Adults who have ever been told they have asthma	2	BRFSS	O-NU
OTHERS:			
Other cancer types (ex: mouth)			
Stillbirth or SIDS			
Respiratory disease by age			

Action Key

U = Used

O-NU = Omitted, not useful

O-ND = Omitted, no data

Appendix F. Indicators for Alcohol, Tobacco and Illicit Drug Use and Consequences (continued)			
Illicit Drug Consumption Indicators	Rating	Source	Action
30-day marijuana use	3	CORE YRBS NSDUH	U
30-day cocaine use	3	CORE YRBS	U
30-day inhalant use	3	CORE YRBS	U
30-day any illicit drug use other than marijuana	3	NSDUH	U
30-day LSD	2.75	CORE	U
30-day stimulant use	2.75	CORE	U
30-day sedative use	2.75	CORE	U
30-day heroin use	2.75	CORE	U
30-day ecstasy use	2.75	CORE	U
30-day steroid use	3	CORE	U
Lifetime marijuana use	2.25	YRBS	U
Lifetime cocaine use	2.25	YRBS	U
Lifetime inhalant use	2.25	YRBS	U
Lifetime heroin use	2.25	YRBS	U
Lifetime methamphetamine use	2.25	YRBS	U
Lifetime stimulant use	2.25		O-ND
Lifetime ecstasy use	2.25	YRBS	U
Percent of students taking steroid pills/shots w/o a Dr. Rx 1+ times in their life	3	YRBS	U
Lifetime LSD use	2.25		O-ND
Lifetime sedative use	2.25		O-ND
Lifetime steroid use	2.25	YRBS	U
Percent of students trying marijuana for the first time <13	3	YRBS	U
Age of first use of marijuana	3	YRBS	U
Daily marijuana use in past 30 days	3	CORE	O-NU
Lifetime injecting drugs	2.75	YRBS	U
Percent of students using marijuana on school property 1+ times in the past 30 days	2.75	YRBS	U
Percent of students offered, sold, or given an illegal drug on school property in the past 12 months	3	YRBS	U
Illicit Drug Consequence Indicators			
Viral hepatitis deaths per 100,000 population	2.75	CDC_w onder NDVR	O-NU
HIV deaths per 100,000 population	2.25	NVSS_ M NDVR	U

Appendix F: Indicators for Alcohol, Tobacco and Illicit Drug Use and Consequences (continued)			
Illicit Drug Consequence Indicators (continued)	Rating	Source	Action
Malnutrition deaths per 100,000 population	2.25	CDC_wonder	O-NU
Number of property crimes reported	2.25	NDBCI UCR	U
Number of burglaries reported	2.25	NDBCI UCR	U
Number of larceny reported	2.25	NDBCI UCR	U
Number of vehicle thefts reported	2	NDBCI UCR	U
Amount of arson reported	2	NDBCI UCR	U
Number of property crimes arrests	2.5	NDBCI UCR	U
Number of burglaries arrests	2.5	NDBCI UCR	U
Number of larceny arrests	2.5	NDBCI UCR	U
Number of vehicle thefts arrests	2.25	NDBCI UCR	U
Amount of arson arrests	2.25	NDBCI	O-NU
Drug abuse violations	2.75		O-NU
Drug manufacture violations	2.75	NDBCI	U
Drug possession violations	2.75	NDBCI	U
Number of North Dakota K12 drug related expulsions	2.75	ND DPI	U
Number of North Dakota K12 drug related suspensions	2.75	ND DPI	O-NU
Number of EMS medical response (drug overdose)	2.5	Div of EMS	O-NU
Reported AIDs cases and annual rates per 100,000	2.75	CDC Wonder	U
Estimated numbers of cases and rates (per 100,000 population) of AIDS (Population +13)	2.25	CDC Wonder	U
DEA drug violation arrests	3	DEA	U
Controlled substance arrests/charges (cocaine)	3	NDBCI	U
Controlled substance seizures/purchases (cocaine)	2.75	NDBCI	U
Controlled substance seizures/purchases (crack cocaine)	2.75	NDBCI	U
Highway patrol cocaine seizure	2.25	NDBCI	O-NU
Highway patrol cocaine cases	2.25	NDBCI	O-NU
Federal drug seizures (cocaine)	2.75	DEA	U
Controlled substance arrests/charges (marijuana)	3	NDBCI	U
Controlled substance seizures/purchases (marijuana)	2.75	NDBCI	U
Controlled substance seizures/purchases (hashish)	2.75	NDBCI	U
Controlled substance seizures/purchases (sinsemilla plants)	2.25	NDBCI	O-NU
Controlled substance seizures/purchases (marijuana plants)	2.75	NDBCI	U
Controlled substance seizures/purchases (ditchweed/wild plants)	1.75	NDBCI	O-NU
Highway patrol marijuana seizure	2.25	NDBCI	O-NU
Highway patrol marijuana cases	2	NDBCI	O-NU
Federal drug seizures (marijuana)	2.75	DEA	U



Highway patrol hashish seizure	2.25	NDBCI	O-NU
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Appendix F. Indicators for Alcohol, Tobacco and Illicit Drug Use and Consequences (continued)			
Illicit Drug Consequence Indicators (continued)	Rating	Source	Action
Highway patrol hashish cases	2.25	NDBCI	O-NU
Controlled substance arrests/charges (methamphetamine)	3	NDBCI	U
Controlled substance seizures/purchases (methamphetamine)	2.75	NDBCI	U
Highway patrol methamphetamine seizure	2.5	NDBCI	O-NU
Highway patrol methamphetamine cases	2.5	NDBCI	O-NU
Federal drug seizures methamphetamine	3	DEA	U
Controlled substance seizures/purchases (clandestine labs)	2.75	NDBCI	U
Highway patrol clandestine labs seizures	2.25	NDBCI	O-NU
Number of meth clandestine labs seizures	2.75	DEA	U
Federal drug seizures (labs -DEA, State, local)	2.75	DEA	U
NDBCI other stimulant seizures	2.75	NDBCI	O-NU
Controlled substance seizures/purchases (heroin)	3	NDBCI	U
Highway patrol heroin seizure	2.25	NDBCI	O-NU
Highway patrol heroin cases	2.5	NDBCI	O-NU
Federal drug seizures (heroin)	3	DEA	U
Controlled substance arrests/charges (opiates)	3	NDBCI	U
Controlled substance seizures/purchases (morphine)	3	NDBCI	U
Controlled substance seizures/purchases (opium)	3	NDBCI	U
Controlled substance arrests/charges (hallucinogenic)	3	NDBCI	U
Controlled substance seizures/purchases (LSD)	3	NDBCI	U
Controlled substance seizures/purchases (hallucinogens)	3	NDBCI	U
Highway patrol hallucinogens seizure	2.5		O-NU
Controlled substance seizures/purchases (psilocybin)	3	NDBCI	O-NU
Highway patrol hallucinogens cases	2.25	NDBCI	O-NU
Highway patrol MDMA seizure	2.5	NDBCI	O-NU
Highway patrol MDMA cases	2.25	NDBCI	O-NU
Federal drug seizures (ecstasy)	2.5	DEA	U
Controlled substance seizures/purchases (club drugs)	2.5	NDBCI	U
Highway patrol pharmaceutical seizure	2.5	NDBCI	O-NU
Highway patrol pharmaceutical cases	2.25	NDBCI	O-NU
Controlled substance arrests/charges (other)	3	NDBCI	U
Controlled substance seizures/purchases (other narcotic)	3	NDBCI	U



## Appendix G: Needed Data to Address Gaps

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Appendix G. Needed Data to Address Gaps			
Data Needs	Description	Benefits to the State	Barriers to Fruition
Statewide Hospital Discharge Database	All hospitals in the state submit electronic copies of their patient information on an annual basis; standardized data fields; data stored in a centralized location and routinely utilized for health research purposes	Derive incidence rates for ATOD-related health conditions; Monitor emergency room use for ATOD-related health concerns	Cost; public unawareness of its need; hesitation from hospitals regarding confidentiality issues
BRFSS at the regional and county levels	Specific BRFSS survey methods are used to derive valid estimates for state regions and counties	Sub-state analysis of substance use and consequences among adults by geographic region	Cost; Low population in state's rural areas
YRBS at the regional and county levels	Specific YRBS survey methods are used to derive valid estimates for state regions and counties	Sub-state analysis of substance use and consequences among students in grades 9-12 by geographic region	Cost; Low population in state's rural areas
Statewide Treatment Data	Statewide, centralized repository for ATOD treatment data; standardized data fields; available for health research purposes	Improve the quality of ATOD treatment data beyond TEDS, which has limitations on quality and generalizability	Cost; Public support for addressing this data need is uncertain
NSDUH at the regional and county levels	Specific NSDUH survey methods are used to derive valid estimates for state regions and counties	Sub-state analysis of substance use and consequences among ND residents by geographic region	Cost; Low population in state's rural areas

