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

The North Dakota Epidemiological Profile

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Executive Summary

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., 2008; BRFSS, 2007). 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, 37.6 percent consumed alcohol in the past 30 days and 28.5 percent engaged in binge alcohol use in the past 30 days (Hughes et al., 2008). These figures, despite having dropped slightly since the previous year, rank North Dakota #2 and #1, respectively, among all 50 states. 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., 2008). 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., 2008). 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, 2008). Among DUI arrests in the state, persons aged 21-24 are the most frequent offenders and their arrest rate has increased in recent years (ND Office of the Attorney General, 2008).

North Dakota adults and children smoke cigarettes at rates that are comparable to the U.S. However, the state's American Indian adults smoke cigarettes at twice the rate of white adults (50.1 percent vs. 19.6 percent; BRFSS, 1998-2007). Smokeless tobacco use in North Dakota appears higher than the U.S. for both adults (BRFSS, 2007) and children (YRBS, 2008). Regarding recent use of any tobacco product, North Dakota children's and adults' prevalence is higher than the U.S. prevalence (Hughes et al., 2008).

Associated with illicit drug use, arrests in North Dakota have increased by 3% from 2,256 in 2006 to 2,323 in 2007. 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, 2008). Methamphetamines are also a problem in North Dakota, but to a lesser extent. North Dakota's 2004 meth lab seizure rate per 100,000 population placed it in the top 20% of all states. However, in recent years, meth lab incidents have been drastically reduced and meth possession arrests have been somewhat reduced in North Dakota.

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Introduction

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

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), North Dakota State University (NDSU; Process Evaluator; Fargo, ND), and DLN Consulting, Incorporated (DLN; Facilitators and Organization; Dickinson, 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) we 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 February 2009.

Alcohol Consumption in North Dakota

Alcohol is the most commonly used substance in the United States (SAMHSA, 2005). 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, 2005). Excessive alcohol consumption leads to many adverse health and social consequences and results in approximately 4,500 deaths among underage youth each year (CDC, 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 (19.7 percent) in 2007 was lower than the national rate (25.6 percent in 2005). 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.

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 and 2006. The majority (55-56 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).

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 the state's high school students, 4.4 percent said they had consumed alcohol on school property on one or more occasions in 2005. This figure is comparable to the 2005 U.S. figure of 4.3 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, 2008).

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.

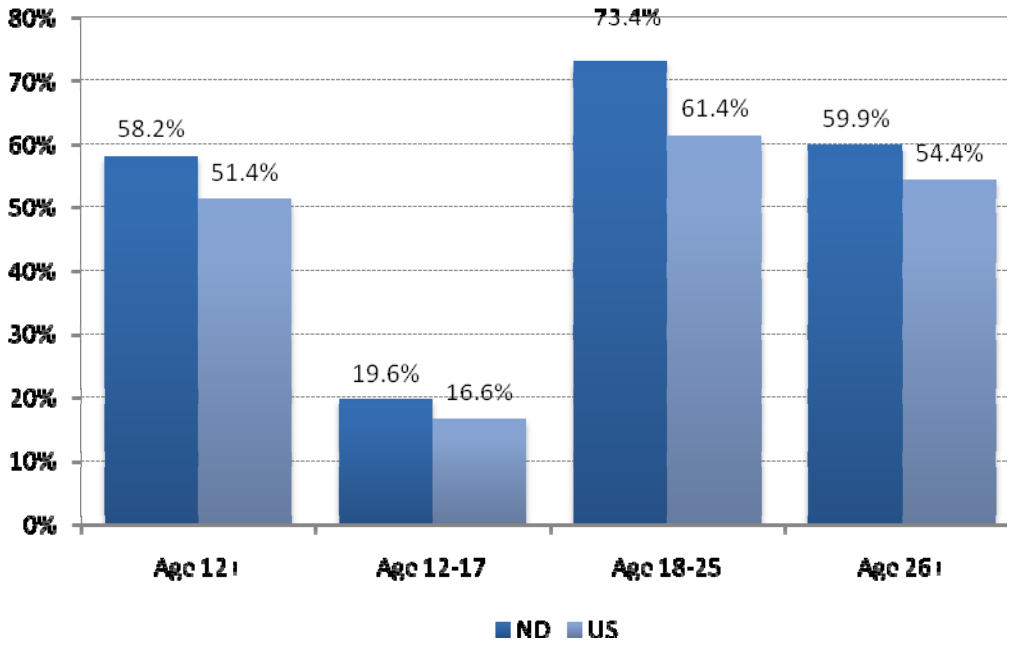
Another analysis of alcohol use by race was conducted using North Dakota's BRFSS combined data for years 1998-2007. Results indicated that, compared to Whites, American Indians were less likely to have recently consumed alcohol (52.2 percent vs. 64.7 percent), more likely to have recently binged alcohol (26.4 percent vs. 21.1 percent) and less likely to be heavy drinkers (4.8 percent vs. 5.1 percent).

RECENT ALCOHOL USE

According to the YRBS, slightly less than one-half (46.1 percent) of North Dakota high school students (grades 9-12) in 2007 took one or more drinks of alcohol in the past month, a figure that is higher than the national rate of 43.3 percent. North Dakota's 2007 rate is 15 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, but the state's rates remain higher than the U.S. usage rates (YRBS, 2008).

The National Survey of Drug Use and Health (Hughes et al., 2008) found that 58.2 percent of North Dakotans aged 12 and older had one or more drinks of alcohol in the past month **(Figure 1)**.

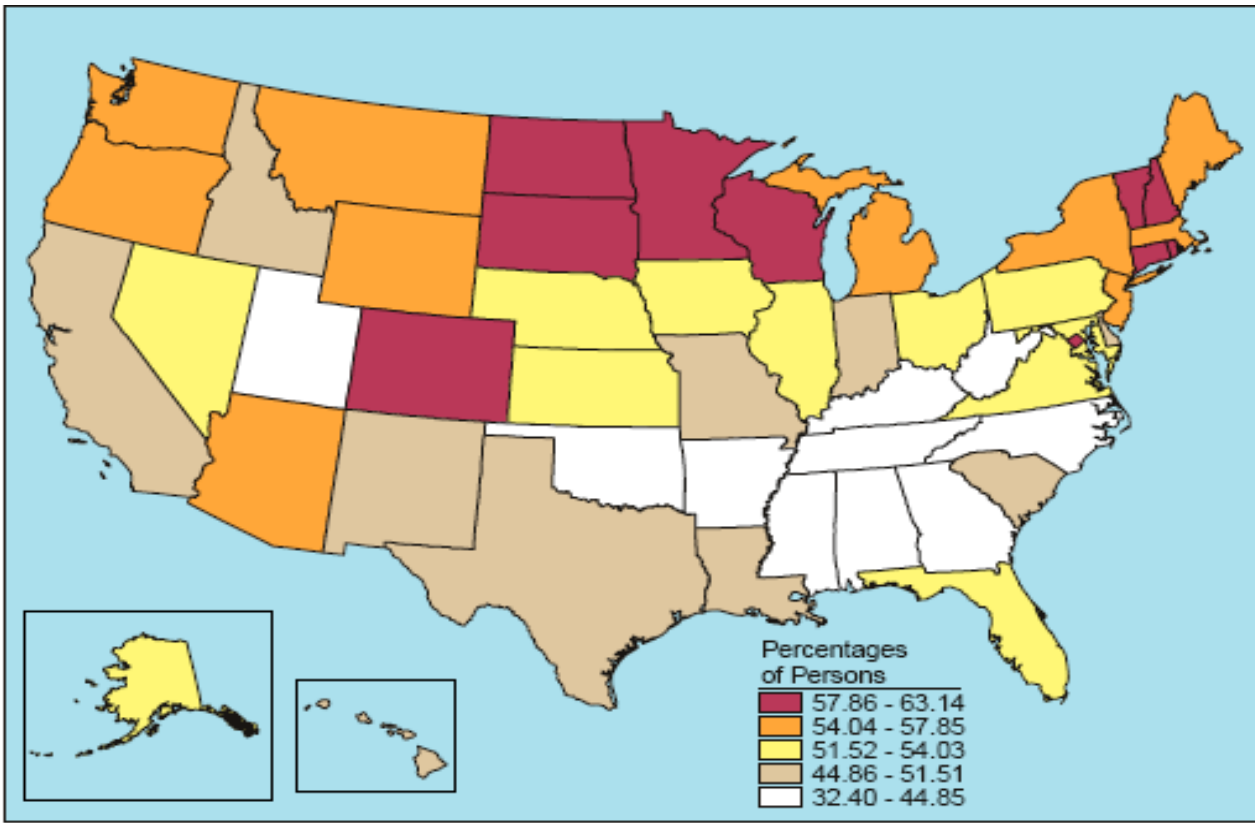
Figure 1: Alcohol Use in Past Month, North Dakota and United States, by Age, 2005-2006



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2005 and 2006

This is substantially higher than the U.S. rate of 51.4 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., 2008**)**.

Figure 2: Alcohol Use in Past Month, Ages 12+, 2005-2006



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2005 and 2006

Among North Dakotans aged 12-17 years, one-fifth (19.6 percent) used alcohol in the past month **(Figure 1)**. This figure reflects a slight decline from 20.0 percent for the previous NSDUH survey period (i.e., 2005-2006). Nationally, 16.6 percent of this age cohort indicated they had used alcohol within the past month. 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., 2008).

Among persons aged 12-20 years, North Dakota (37.6 percent) is ranked number two nationally in alcohol use in the past month. Among our neighboring states, South Dakota (34.1 percent) and Montana (34.3 percent) are on the top-five list of highest percentages. Utah (21.5 percent) had the lowest rate of recent alcohol use among persons aged 12-20 (Hughes et al., 2008).

The NSDUH (Hughes et al., 2008) reported that North Dakotans aged 18-25 years were most likely (73.4 percent) of any age cohort to have used alcohol during the past month, which is far higher than the national rate of 61.4 percent. While North Dakota's prevalence dropped slightly from 74.6 percent in the previous NSDUH survey period, the figure remains in the top 20 percent of all U.S. states for recent alcohol use among persons 18-25 years. The NSDUH (2005) estimated that 59.9 percent of North Dakotans aged 26 years and older had used alcohol in the past month in 2005-2006, down from 61.2 percent in 2003-2004. The national estimate was substantially lower at 54.4 percent of this age group. North Dakota was in the second-highest quintile grouping of U.S. states for recent alcohol use among persons aged 26 and older, whereas the neighboring states of South Dakota, Minnesota and Wisconsin, were in the highest quintile grouping.

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, 62.0 percent indicated using alcohol in the past month in 2007 **(Table 1)**.

Table 1: Percent of Recent, Heavy, and Binge Alcohol Use Among Adults Ages 18+, North Dakota and the United States, 2002-2007

		Recent		Heavy		Binge	
		ND	US	ND	US	ND	US
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
2002	Overall	64.0	58.1	5.2	5.9	22.0	16.3
	Male	73.7	66.6	7.0	7.1	33.7	24.6
	Female	54.5	50.0	3.3	4.5	10.6	8.2

Source: BRFSS, 2002-2007

This figure is higher than the U.S. prevalence of 55.8 percent for the same year. The state's usage prevalence remained steady at 64-65 percent from 2002 to 2003 and declined in the three proceeding years. 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 62.0 percent placed it in the second-highest group, along with neighboring states Minnesota and Montana (BRFSS, 2007).

In 2007, two-thirds (68.9 percent) of adult males and one-half (55.3 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 73.7 percent in 2002 to 68.9 percent in 2007. For women, recent alcohol use declined from 54.5 percent in 2002 to 52.5 percent in 2006, but then rose to 55.3 percent in 2007 (BRFSS, 2007).

The percent of recent alcohol use among North Dakota men was higher than the US percent for males during years 2002 to 2007 **(Table 1)**. Similarly, women in North Dakota are more likely than their U.S. female counterparts to have consumed alcohol in the past month **(Table 1)** (BRFSS, 2007).

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 (40.2 percent) to have recently drank alcohol. Persons aged 25 through 44 were most likely (70-71 percent) to have consumed alcohol in the past month. Beginning at age 45, the prevalence rate of recent alcohol use began to decline (BRFSS, 2007).

The percent of North Dakotans' recent alcohol use increases incrementally with a corresponding rise in annual income level **(Table 2)**. Seventy-three percent of the wealthiest (i.e., earning $50,000 or more) and 44.9 percent of the poorest (i.e., earning less than $15,000) 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 (BRFSS, 2007).

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. For North Dakota, 5.0 percent were classified as heavy drinkers in 2007. 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, but dropped below the U.S. rate in 2002 and 2006 (BRFSS, 2007).

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 5.0 percent was 28th 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 (6.1 percent) were more likely than women (3.9 percent) to be heavy alcohol users **(Table 1)**. For both sexes, rates of heavy alcohol use have remained relatively steady from 2001 to 2005, ranging from 6.2 to 7.9 percent for men and 3.3 to 4 percent for women (BRFSS, 2007).

North Dakota men's heavy drinking prevalence was identical to U.S. men in 2007 **(Table 1;** BRFSS, 2007**)**. 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 2002-2007 **(Table 1)**. North Dakotans aged 18-24 years (9.8 percent) and 25-34 years (6.0 percent) were most likely to be heavy consumers of alcohol in 2007 **(Table 2)**. Heavy use tends to decline with age, as only 1.7 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 18-34 years and lower rates for ages 35 and older. Lowest-earning (i.e., less than $15,000 per year) North Dakotans were most likely (10.1 percent) to drink heavily and highest-earning (i.e., $50,000 or more per year) residents were least likely (5.5 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, 2007).

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 and 2006) 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 2006, this figure dropped to 33.3 percent (NDCORE, 2007).

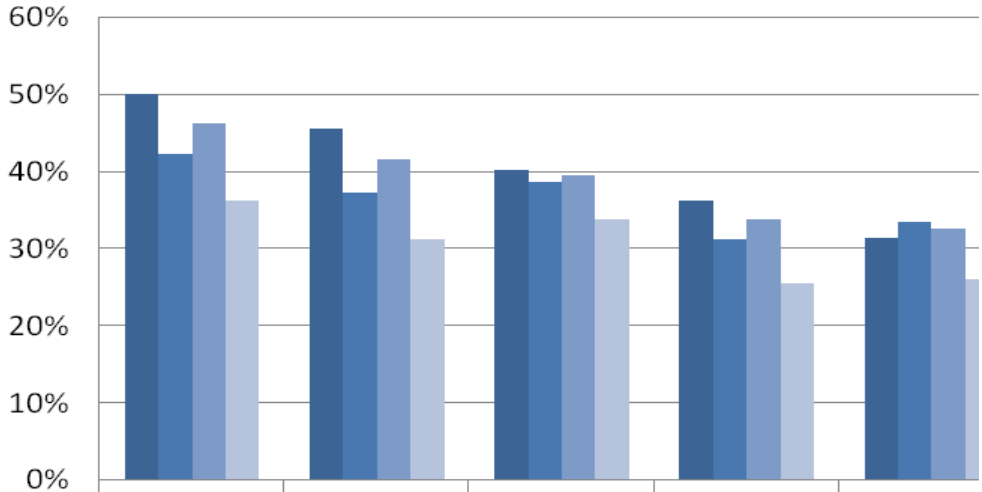
Table 2: Percent of Recent, Heavy, and Binge Alcohol Use Among Adults Ages 18+, by Gender, Age, and Income, North Dakota and United States, 2007

	Recent		Heavy		Binge	
	ND	US	ND	US	ND	US
Overall	62.0	55.8	5.0	5.2	23.2	15.8
Gender						
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
Age						
18-24	69.6	53.1	9.8	8.1	50.3	27.4
25-34	70.9	60.2	6.0	5.2	32.8	22.5
35-44	71.2	60.4	4.9	5.2	26.4	18.8
45-54	64.1	57.7	4.7	5.2	19.4	13.8
55-64	59.7	54.4	3.5	4.8	11.0	9.0
65+	40.2	39.3	1.7	2.9	3.7	3.5
Income (thousand)						
<$15	44.9	33.5	10.1	4.0	23.1	11.0
$15-24	48.0	38.4	4.9	4.7	20.2	12.7
$25-34	57.5	47.4	3.4	4.2	23.3	14.7
$35-49	66.5	53.7	3.4	5.6	22.8	16.4
$50+	73.2	67.4	5.5	5.6	27.5	17.9

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 (32.5 percent) of North Dakota high school students (grades 9-12) were binge drinkers in 2007, compared to one-quarter (25.5 percent) of similarly-aged U.S. high school students in 2005 **(Figure 3;** YRBS, 2008**)**. North Dakota's high school binge drinking rate has declined sharply over time from its high of 46.2 percent in 1997. Boys were more likely than girls to engage in this drinking behavior across all surveyed years (YRBS, 2008). From 2005 to 2007, the state's overall prevalence decreased slightly; males' prevalence decreased substantially and females' prevalence slightly increased.

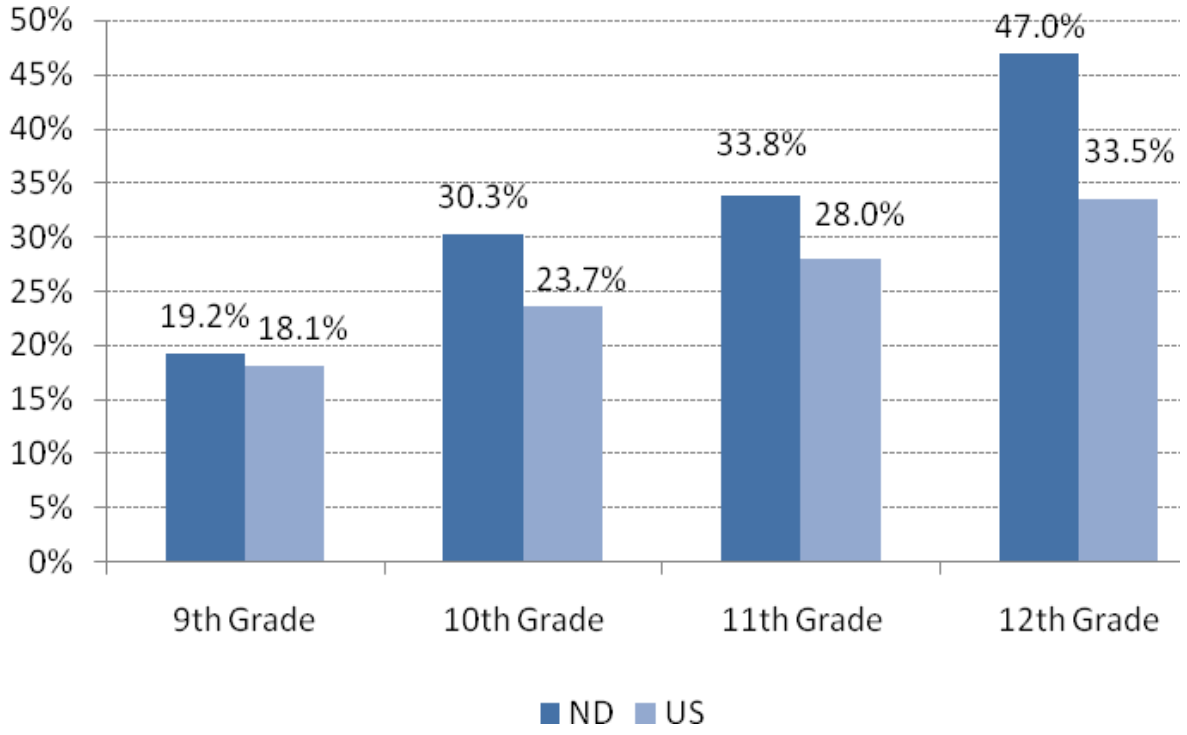
Figure 3: Binge Alcohol Use, by Gender, North Dakota and United States, Students Grades 9-12



	1999	2001	2003	2005	2007
ND Male	50.0%	45.5%	40.1%	36.2%	31.4%
ND Female	42.3%	37.2%	38.7%	31.2%	33.4%
ND Total	46.2%	41.5%	39.5%	33.8%	32.5%
US Total	36.2%	31.2%	33.8%	25.5%	26.0%

As North Dakota students (grades 9-12) advanced to higher grades, they were more likely to have engaged in binge alcohol use **(Figure 4)**. Compared to 2005, North Dakota's recent binge drinking prevalence increased slightly among 10th and 12th graders, decreased substantially among 11th graders, and had no change among 9th graders (YRBS, 2008).

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



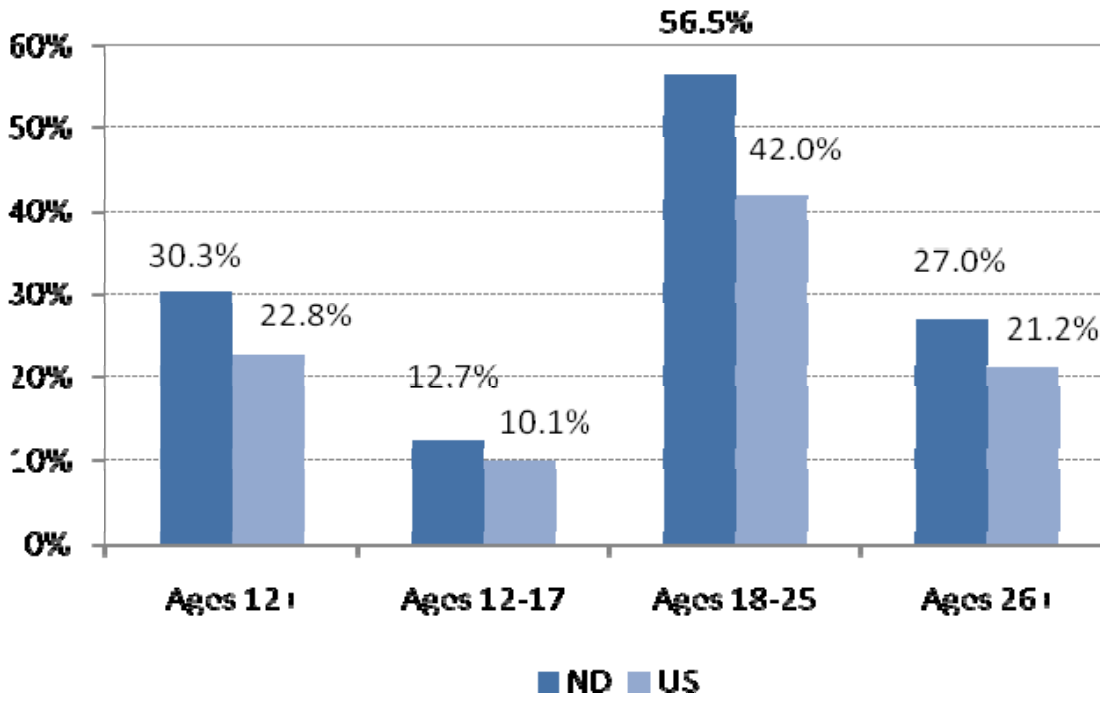
Source: Youth Risk Behavioral Surveillance Survey

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

The NSDUH (Hughes et al., 2008) estimated that almost one-third (30.3 percent) of North Dakotans aged 12 years and older had binged alcohol on one or more of the past 30 days **(Figure 5)**. This figure is substantially higher than the national prevalence of 22.8 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 binging states for this age group, suggesting this drinking behavior is a regional phenomenon.

Among persons aged 12 to 17 years, 12.7 percent of North Dakotans and 10.1 percent of U.S. residents indicated binge drinking in the survey years of 2005 and 2006 **(Figure 5)**. Compared to the previous NSDUH survey period, binge drinking prevalence decreased from 14.2 percent. North Dakota, along with other Midwestern states, was in the top 10 percent of U.S. states for binge drinkers aged 12 to 17 years (Hughes et al., 2008). Among persons aged 18 to 25 years, 56.5 percent of North Dakotans (down from 58.1 percent in 2004-2005) 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, 2005-2006



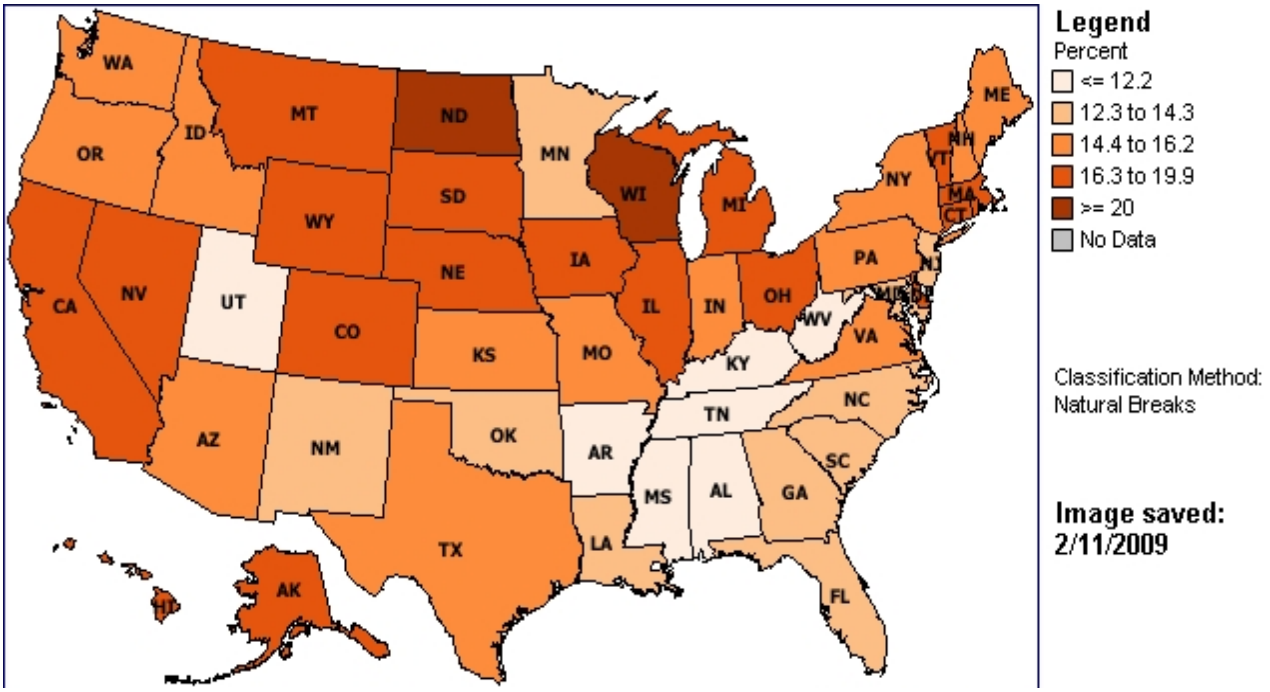
Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2005 and 2006. NOTE: Binge Alcohol Use is defined as drinking five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least 1 day in the past 30 days.

According to the NSDUH (Hughes et al., 2008), 27.0 percent of North Dakotans aged 26 years or older engaged in binge drinking on one or more of the past 30 days. Comparatively, 21.2 percent of similarly-aged U.S. residents binged alcohol within this time (**Figure 5**). North Dakota's binge drinking prevalence was second-highest among all U.S. states for persons aged 26 years and older (Hughes et al., 2008). For persons aged 12 to 20 years, North Dakota is ranked number one among U. S. states with 28.5 percent indicating binge drinking behavior within the past month (Hughes et al., 2008).The neighboring states of Montana (26.0 percent) and South Dakota (23.7 percent) are ranked third- and seventh-highest, respectively. Georgia (15.2 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. Over these past six years, the state's prevalence has consistently been above the national average (BRFSS, 2007). North Dakota's prevalence was ranked second-highest among U.S. states, just below Wisconsin's 23.4 percent prevalence for recent binge drinking (BRFSS, 2007) **(Figure 6)**.

North Dakota men were virtually 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. For women, binge alcohol use remained stable from 2001-2005 at approximately 10-11 percent, but has increased to 13.9 percent in 2006 and 16.5 percent in 2007 (BRFSS, 2007). Females' 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+, 2007 (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 28-34 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 10-16 percent of North Dakota women and 8-10 percent of U.S. women indicate they have engaged binge alcohol use (BRFSS, 2007).

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 2007 **(Table 2)**. Compared to the U.S., North Dakotans were more likely to engage in binge alcohol use across all age groups from 18 through 64. For ages 65 and older, North Dakotans (3.7 percent) and their U.S. counterparts (3.5 percent) were equally likely to binge drink. North Dakotans earning $50,000 or more per year were most likely (27.5 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, 2007).

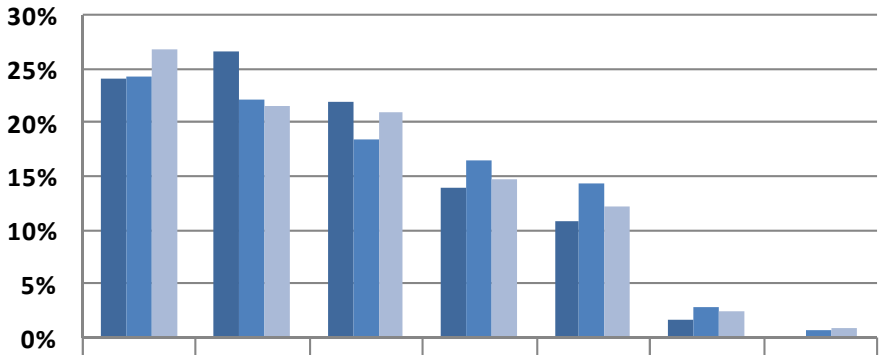
The North Dakota CORE survey assessed the extent of binge drinking among the state's college students. Results were compared between the three time periods (1994, 2003-2005 and 2006) in which the survey was administered. Compared to the 1994 figures, North Dakota college students in 2003-5 reported higher 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). In 2006, these figures declined to 52.7 percent indicating one or more alcohol binge episodes and 23.5 percent indicating three or more alcohol binge episodes in the past two weeks. (NDCORE, 2007).

ATTITUDES TOWARD BINGE DRINKING

The National Survey of Drug Use and Health (NSDUH, 2005) 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 48 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., 2008).

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 three time periods (1994, 2003-2005 and 2006) in which it was administered in the state. 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 figures reflected a decrease to 30.5 percent. 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. For those drinking 10-19 days a month, rates decreased from 14.5 percent in 2003-2005 to 12.2 percent in 2006 **(Figure 7)** (Walton, 2005; NDCORE, 2007).

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



	0 Days	1-2 Days	3-5 Days	6-9 Days	10-19 Days	20-29 Days	Daily
1994	24.2%	26.7%	22.0%	14.1%	11.0%	1.8%	0.2%
2003-2005	24.4%	22.2%	18.5%	16.6%	14.5%	2.9%	0.8%
2006	26.8%	21.7%	21.1%	14.9%	12.2%	2.5%	0.9%

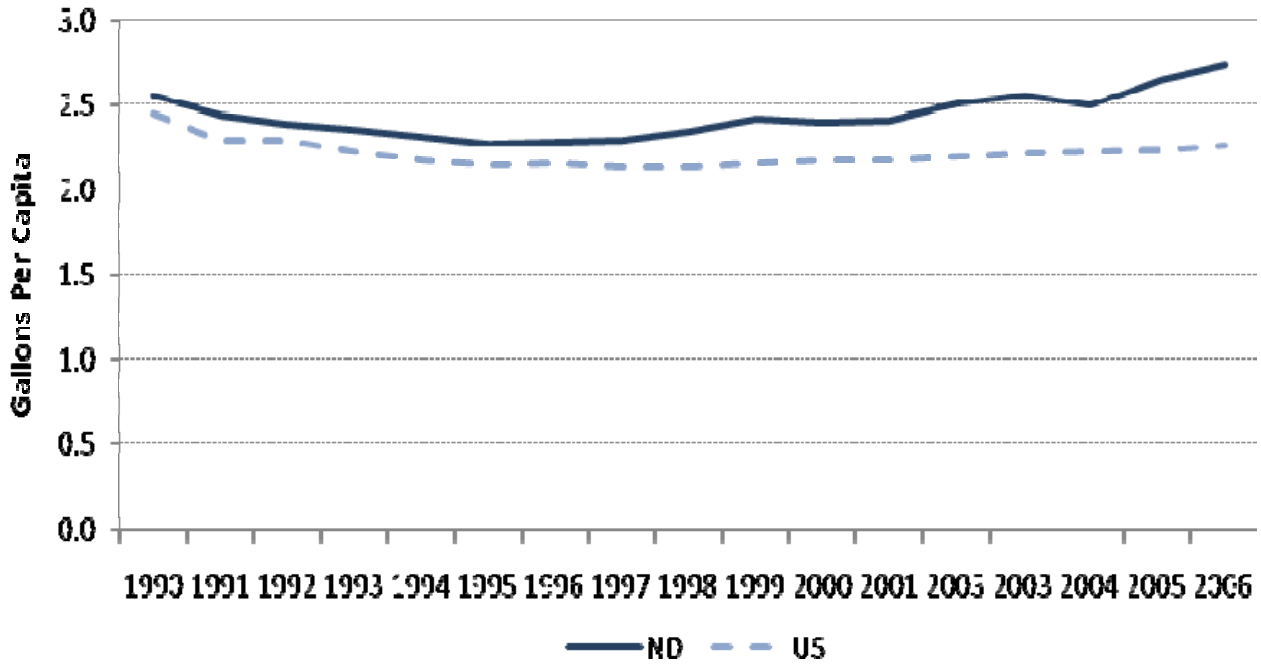
Source: ND CORE Survey

The North Dakota CORE survey asked college student students about their annual drinking behavior. Results from 1994 were compared to 2003-2005 and 2006. 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). In 2006, this figure declined slightly to 46.5 percent (NDCORE, 2007).

ALCOHOL SALES

Alcohol sales are a well-known measure of alcohol consumption. In 2006, North Dakotans purchased and consumed 1.45 million gallons of ethanol. Alcohol purchases have steadily increased since 1994, when only 1.2 million gallons were purchased and consumed (NIAAA, 2006). By type of alcohol purchased, beer is the leading product in North Dakota with 806,000 ethanol gallons purchased in 2006. Beer gallons sold have also steadily increased over time as only 700,000 gallons were sold in 1993. Spirits are the second-leading alcohol category, with 536,000 ethanol gallons being purchased in North Dakota in 2006. Lastly, wine totaled 110,000 ethanol gallons purchased in 2006. Compared to the U.S., North Dakotans purchase higher volumes of alcohol per person. In 2006, North Dakotans consumed 2.7 gallons per person (aged 14 or older), compared to 2.3 gallons per person for the U.S. **(Figure 8;** NIAAA, 2006**)**.

Figure 8: Per Capita Alcohol Consumption, North Dakota and United States, 1990-2006

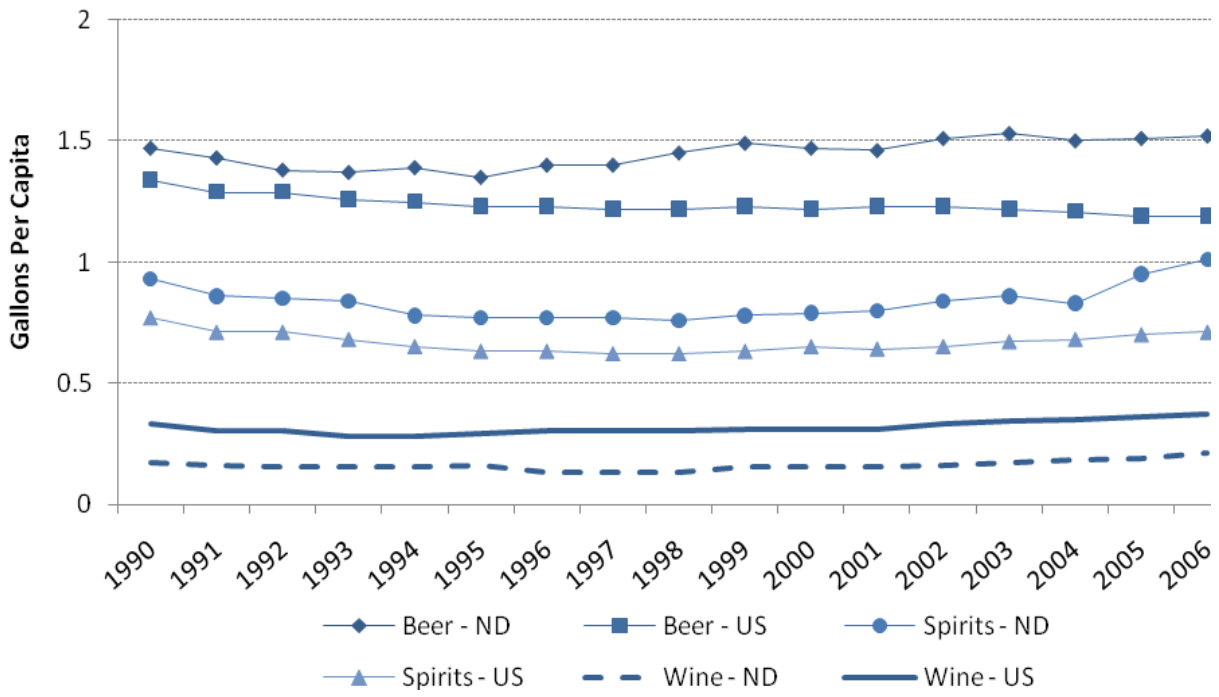


Source: National Institute on Alcohol Abuse and Alcoholism (NIAAA)

*For population ages 14 and older.

North Dakota is at the 80-90th percentile among U.S. states for alcohol sales (NIAAA, 2006). 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 2006, it was estimated that each North Dakotan aged 14 and older consumed an average of 1.5 gallons of beer ethanol, 1.0 gallons of spirits ethanol, and 0.2 gallons of wine ethanol (NIAAA, 2006).

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



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

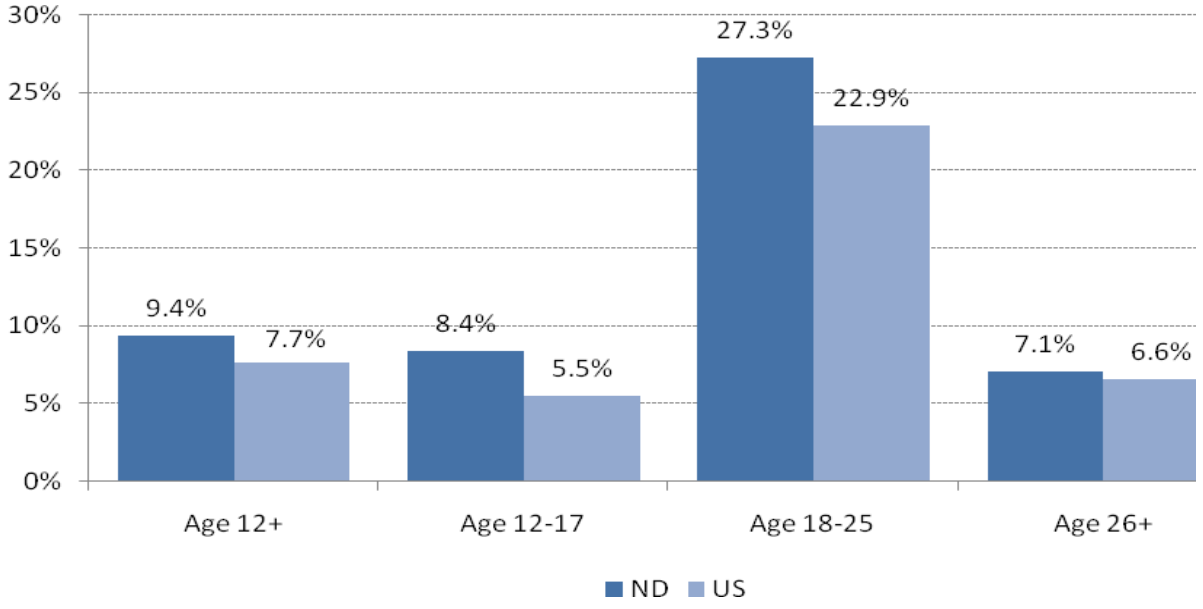
*For population aged 14 and older

Alcohol Consequences in North Dakota

ALCOHOL ABUSE OR DEPENDENCE IN THE PAST YEAR

The NSDUH (2005) 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, 4th 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 OAS (2007), North Dakotans were either dependent on or abused alcohol in the past year at the following rates by age cohort: 12 and older – 9.4 percent; 12-17 years – 8.4 percent; 18-25 years – 27.3 percent; and 26 years or older – 7.1 percent. North Dakota was in the top 20 percent of all U.S. states for alcohol dependence or abuse for age cohorts 12 and older, 12-17 and 18-25. North Dakota was in the second-highest quintile grouping for persons aged 26 and older **(Figure 10)**. Since the previous NSDUH survey (2004-2005), decreases were noted for all cohorts except persons ages 12-17 who had an slight increase in prevalence.

Figure 10: Alcohol Dependence or Abuse in Past Year, North Dakota and United States, by Age, 2005-2006



Source: SAMHSA Office of Applied Studies, National Survey on Drug Use and Health; 2005 and 2006.

*'Dependence' and 'abuse' defined by the Diagnostic and Statistical Manual of Mental Disorders, 4th 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: 3.5-3.7 percent) for alcohol dependence. Also, North Dakotans aged 12-17 years were categorized in the highest grouping (rates of 2.3-3.6 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: 7.9-8.6 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 2.5 to 2.7 percent (Hughes et al., 2008).

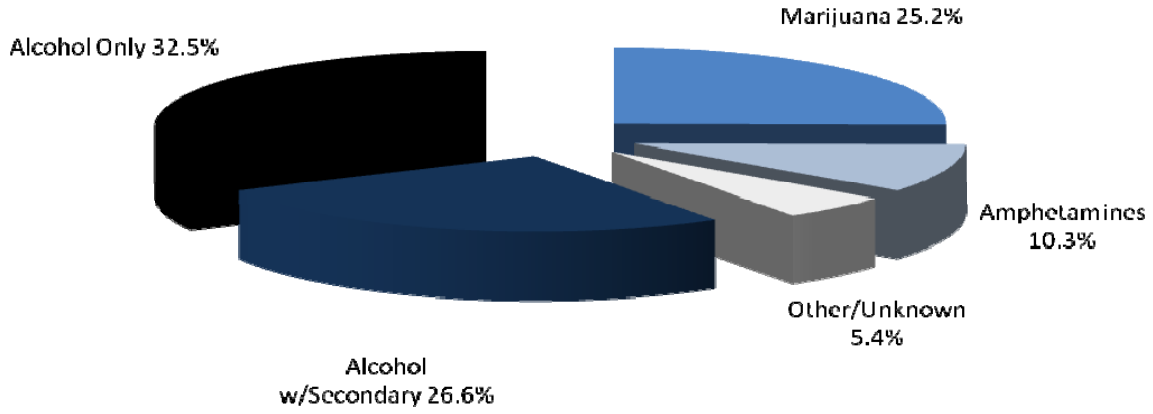
NEEDING BUT NOT RECEIVING TREATMENT

The National Survey on Drug Use and Health (2005) 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 all age groups except for persons aged 26 and older (second-highest group). North Dakota's age cohorts and their corresponding prevalence ranges are as follows: 12 years and older (8.2-10.0 percent); 12-17 years (6.3-10.0 percent); 18-25 years (20.5-24.8 percent); and 26 years and older (6.1-6.5 percent) (Hughes et al., 2008).

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 2006, 55.7 percent of North Dakota substance abuse admissions were related to alcohol (note: at present, 2006 is the most recent year of data on the SAMHSA website) **(Figure 11)**.

Figure 11: North Dakota Substance Abuse Treatment, by Primary Substance 2007



Source: Treatment Episode Data Set
*Total admissions=2,407

Of this figure, 32.5 percent were for alcohol only and 26.6 percent were for alcohol with a secondary drug. Males comprised 68.1 percent of alcohol-only admissions and 66.0 percent of the alcohol/drug admissions. Whites comprised 77.5 percent of the alcohol-only admissions and 69.6 percent of the alcohol/drug admissions. American Indians, which comprise 5 percent of the state's population, comprised 18.9 and 25.0 percent of the alcohol-only and alcohol/drug treatment admissions, respectively (TEDS, 2007).

Alcohol-only admissions in North Dakota primarily involved persons aged 36-40 years (13.4 percent), 41-45 years (13.2 percent), 26-30 years (12.0 percent), 46-50 years (11.9 percent), and 21-25 years (11.7 percent). Alcohol with secondary drug admissions were most common among persons aged 21-25 years (21.1 percent), followed by 26-30 years (16.2 percent), 18-20 years (12.5 percent), 41-45 years (11.1 percent) and 31-35 years (10.0 percent) (TEDS, 2006).

North Dakota's alcohol-related 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 152 admissions per 100,000 persons (ages 12 and older) in 2006, compared to 164 admissions per 100,000 in 2002. Regarding treatment for alcohol with a secondary drug, there were about 117 admissions per 100,000 in 2006, compared to 183 per 100,000 in 2002 (TEDS, 2006).

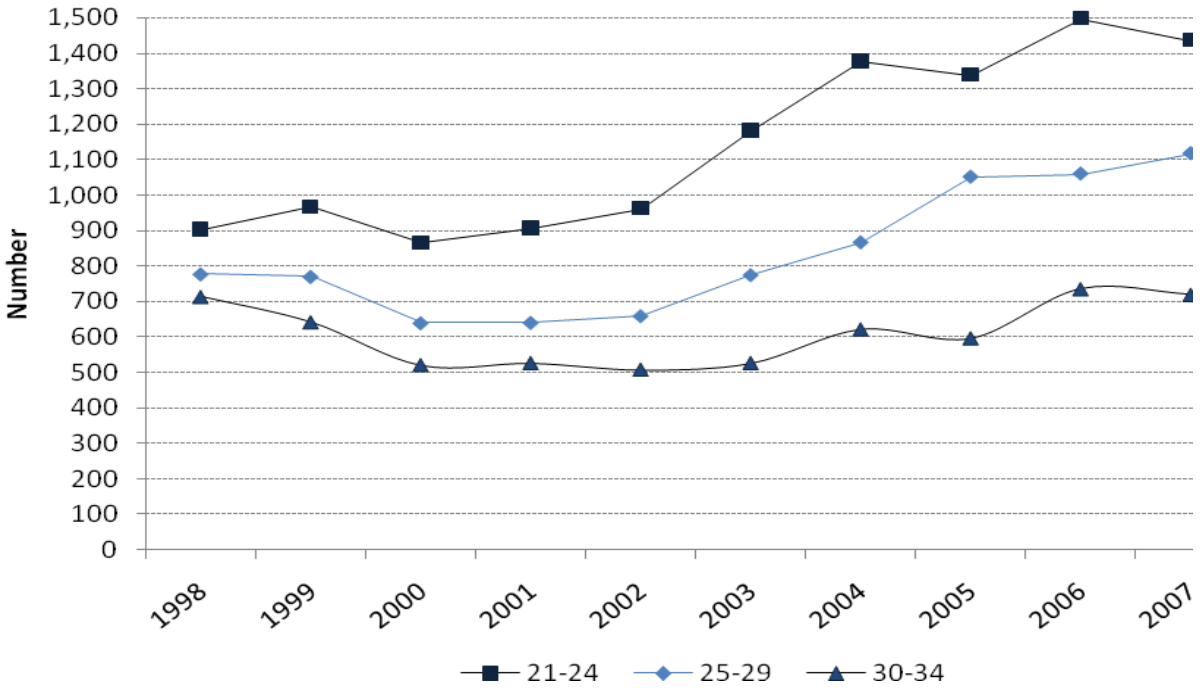
CRIME

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 2007, 47 sheriffs'

departments and 35 police departments reported data to the state UCR program (North Dakota Office of Attorney General, 2008).

In 2007, 6,085 arrests were made for driving under the influence of alcohol, involving 6,018 adults and 66 juveniles (note: these figures exclude cases with missing age). In 2007, annual DUI arrests were up 41.4 percent from 2000, when 4,304 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, 49 percent of all DUI arrests in the state since 1998 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

Arrests for offenders in their 20s have steadily increased since 2000, whereas arrests for persons aged 30-34 years have been increasing at a slower rate. In 2007, male offenders made up about three-quarters (75.9 percent) of DUI arrests. Since 2000, DUI arrests have increased 34 percent for males and 69 percent for females by 2007.

The U.S. Department of Transportation and the North Dakota Department of Transportation (2008) 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 1998 to 2007, 46.2 percent (i.e., 500 of 1,082) of the fatalities tested positive for alcohol. Of the fatalities with some level of alcohol involvement, the overwhelming majority (84.0 percent) had BAC levels at 0.10 or higher. Of the remainder, 18 (3.8 percent) had BAC levels of .08 to .09, and 57 (12.2 percent) had BAC levels of .01 to .07 (NDDOT, 2008).

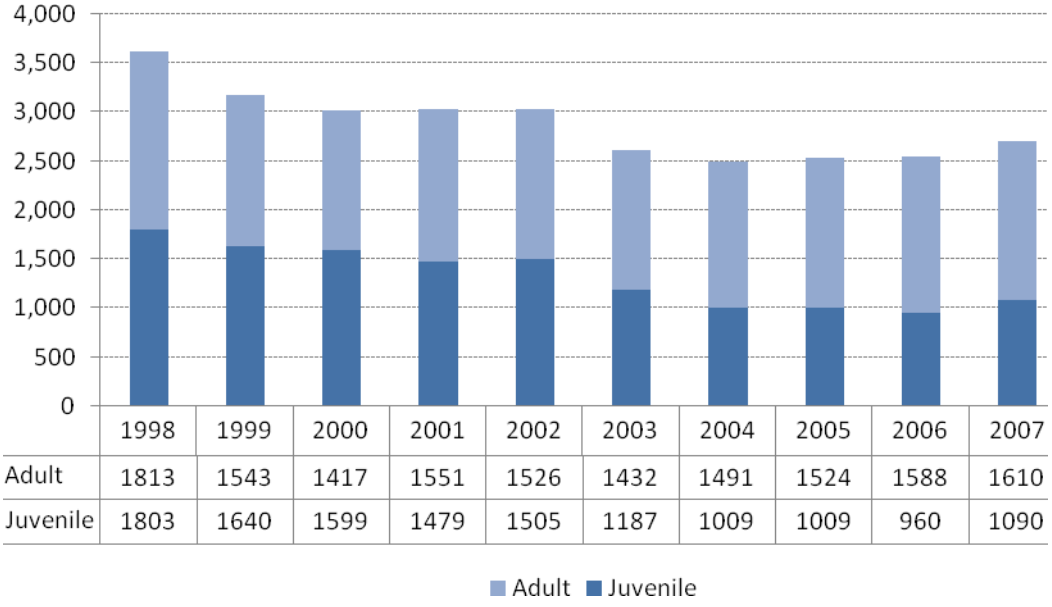
A total of 2,915 blood tests and 2,800 breath tests were administered to DUI suspects in 2007. Aggregated results of the blood tests indicated that 94.6 percent of suspects were at or above the legal BAC level of 0.08. Comparatively, 93.6 percent of all breath tests yielded BAC levels that were

at or above the 0.08 mark. Thirty-one percent of blood-tested and 18 percent of breath-tested suspects were highly inebriated, with BAC levels at or above 0.2 (NDDOT, 2007).

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 decreased by 25.6 percent from 3,628 offenses in 1998 to 2,700 offenses in 2007 **(Figure 13)**. From 1998 to 2007, adult arrests declined by 11.2 percent (N=203) and juvenile arrests decreased by 39.5 percent (N=713) (ND OAG, 2008).

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



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Adult	1813	1543	1417	1551	1526	1432	1491	1524	1588	1610
Juvenile	1803	1640	1599	1479	1505	1187	1009	1009	960	1090

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 12,531 in 2007. Since 1998, crime index offenses have declined by 24.2 percent (4,006 fewer offenses in 2007). The crime index offense rate for North Dakota was about 1,958 per 100,000 in 2007. This figure represents a substantial 24.5 percent decrease from 1998 when the rate was 2,592 offenses per 100,000 population.

Regarding crime index offenses, the most common type in North Dakota was larceny/theft (8,672 offenses in 2007), followed by burglary (2,096 offenses in 2007). The next most common crime index offenses included motor vehicle theft (878 offenses), aggravated assault (599 offenses), forcible rape (202 offenses), robbery (68 offenses), and murder/non-negligent manslaughter (16 offenses). In 2007, aggravated assault and forcible rape offenses increased since the previous year by 12.6 and 3.6 percent, respectively, while the other crimes decreased in prevalence (ND OAG, 2008).

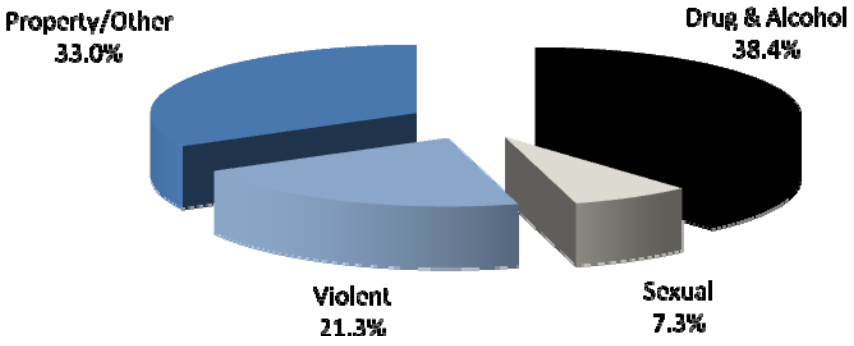
Violent crimes include murder, non-negligent manslaughter, forcible rape, aggravated assault and robbery. In 2007, violent crime *arrests* in North Dakota totaled 312. Since 1998, the number of these arrests increased 27.3 percent in 2007. The state's violent crime rate was about 138 offenses per 100,000 population in 2007, an increase of 8.9 percent from the previous year (ND OAG, 2008). 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 (2008) 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 2007, there were 6,118 total arrests, of which 4,775 (78.1 percent) involved adults and 1,341 (21.9 percent) involved juveniles (i.e., under age 18). From 2003 to 2007, total LLV arrests in North Dakota decreased by 12.2 percent; juvenile LLV arrests declined by 23 percent within this period (ND OAG, 2008).

IMPRISONMENT

A harsh potential consequence of alcohol use is prison time. In 2007, 1,049 inmates entered prison in North Dakota **(Figure 14)**.

Figure 14: Offense Types among North Dakota Inmates, 2007

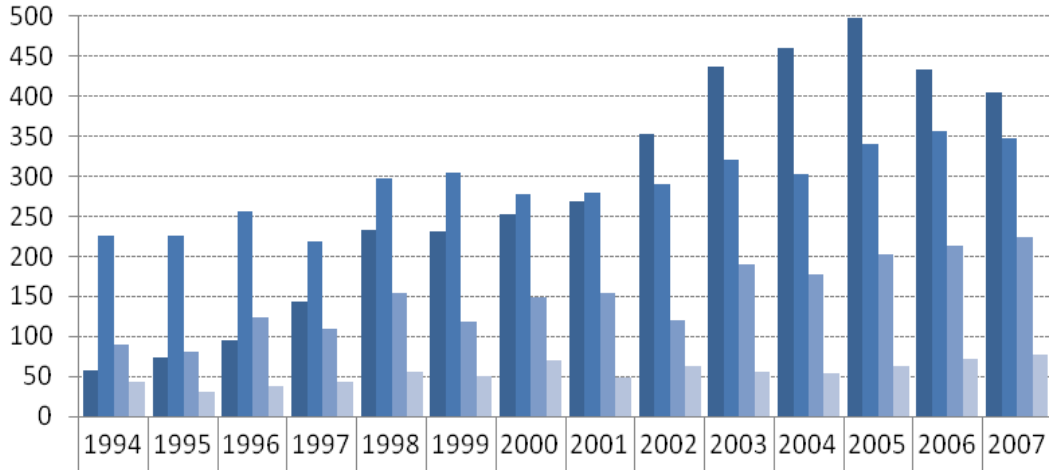


Source: ND Department of Corrections and Rehabilitation, Prisons Division, Inmate Population Information, 2007

Of this number, 38.4 percent were drug and alcohol offenders, 33.0 percent were property offenders, 21.3 percent were violent crime offenders, and 7.3 percent were sex offenders **(Figure 14)**. In 2007, there were 899 male offenders that entered the North Dakota prison system (ND Department of Corrections and Rehabilitation, 2007). Of these inmates, their criminal offenses comprised the following: drug (37.7 percent); property/other (31.5 percent); violent (22.4 percent); and sexual (8.5 percent). In 2007, there were 150 female offenders that entered the North Dakota prison system. Of these inmates, their criminal offenses comprised the following: drug (42.7 percent); property/other (42.0 percent); violent (14.7 percent); and sexual (0.7 percent).

Since 1994, the number of alcohol/drug-related prison admissions in North Dakota rose from 58 to 403 in 2007, an increase of 595 percent **(Figure 15)**. In this same time period, property crime admissions increased by 54 percent, violent crime admissions rose by 148 percent, and sex offenses increased 79 percent (NDDOCR, 2007).

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



	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Drug & Alcohol	58	74	95	142	232	231	252	268	351	435	459	497	433	403
Property	225	225	256	217	296	304	277	278	290	319	301	339	355	346
Violent (non-sexual)	90	81	124	109	153	117	149	154	120	189	177	201	212	223
Sexual	43	30	37	43	55	50	69	48	62	55	54	62	71	77

Source: ND Department of Corrections and Rehabilitation, Prisons Division, Inmate Population Information, 2007

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 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 ranks North Dakota 23rd out of 27 PRAMS-participating states (CDC, 2002).

North Dakota Kids Count (2006) reported there were 3,903 reports of child abuse or neglect and 6,851 associated victims in North Dakota in 2003. From 1998 to 2003, the number of child abuse/neglect reports declined by 9 percent and the number of victims decreased by 7 percent.

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 22nd 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).

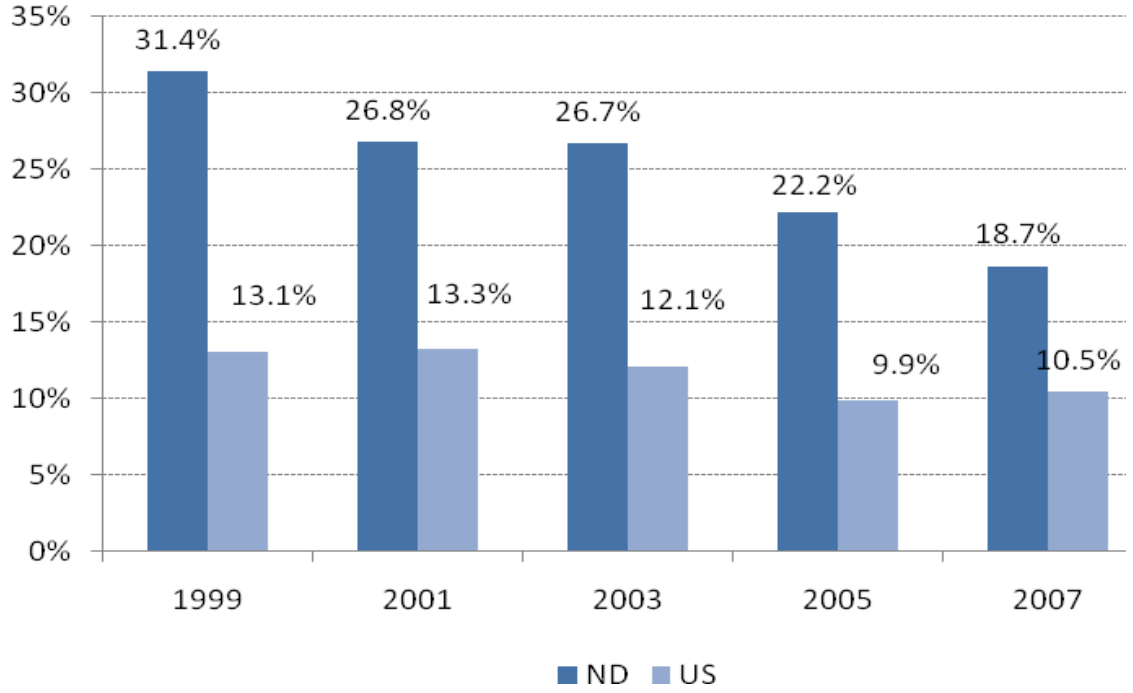
Fetal Alcohol Syndrome (FAS) is another potential consequence caused by mothers who use alcohol during their pregnancies. According to the North Dakota Division of Vital Records (2006), there are very limited numbers of these cases per year. In fact, there was only one documented FAS case in 2005 and 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 31 minutes and non-fatally injure someone every two minutes (NHTSA, 2006). During 2006, 15,387 people in the U.S. died in alcohol-related motor vehicle crashes, representing 37 percent of all traffic-related deaths (NHTSA, 2008). In 2005, about 1.4 million drivers were arrested for driving under the influence of alcohol or narcotics (Department of Justice, 2006). 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 (SAMHSA, 2006b).

In the YRBS (2008), 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, 18.7 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.

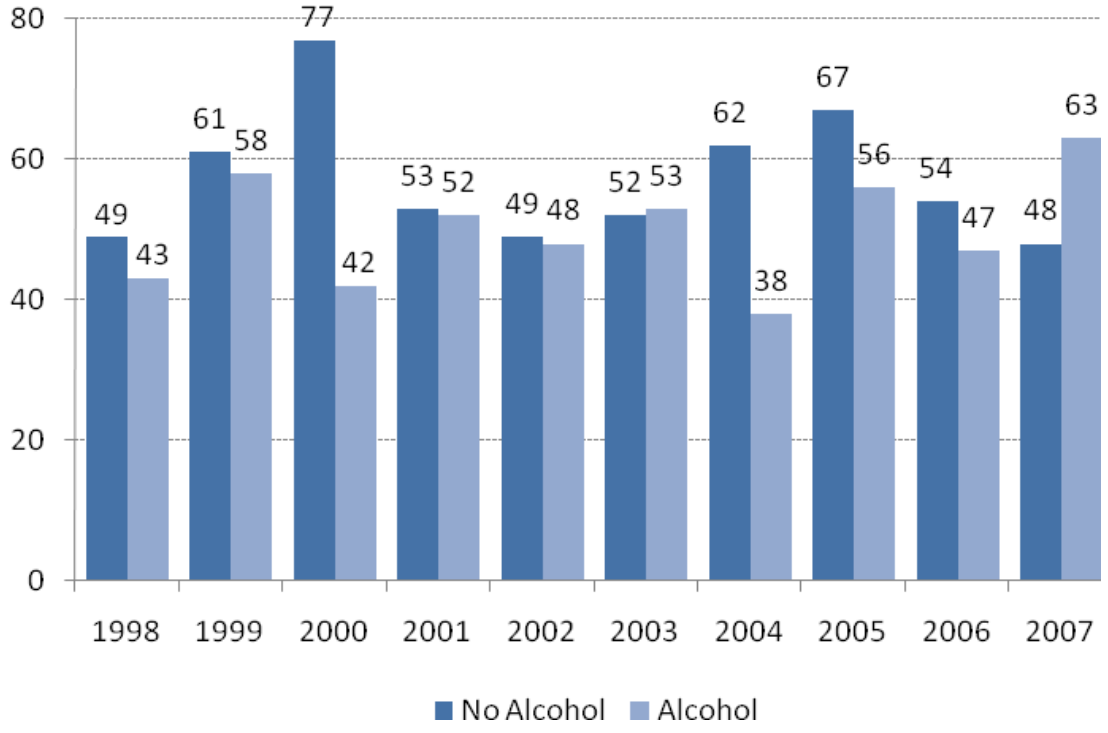
Since 1999, the percent of impaired teen drivers in North Dakota has declined from one-third to just under one-fifth. However, North Dakota's rates were more than twice the magnitude of U.S. rates. Boys were more likely than girls to have driven a vehicle after drinking alcohol. The percentage for both 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 2007, the percent of students by grade who drove after consuming alcohol has generally declined (YRBS, 2008).

In 2007, one-third (31.5 percent) of North Dakota high school students said that in the past month, they were a passenger of a driver who had consumed alcohol. Although this rate is substantially lower than the 48 percent rate in 1999, North Dakota's percentages across all YRBS years were significantly higher than the U.S. rates (YRBS, 2008).

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 1998 to 2007, there were 922 fatal vehicle crashes in North Dakota, or about 92 per year. The highest annual number of fatal crashes (i.e., 105) occurred in 2005. Within this ten-year period, approximately half (48.3 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 1998 to 2007, a total of 1,082 persons died in these 922 crashes, and 500 (46.2 percent) of these deaths were a result of alcohol-related crashes (North Dakota Department of Transportation, 2008) **(Figure 17)**.

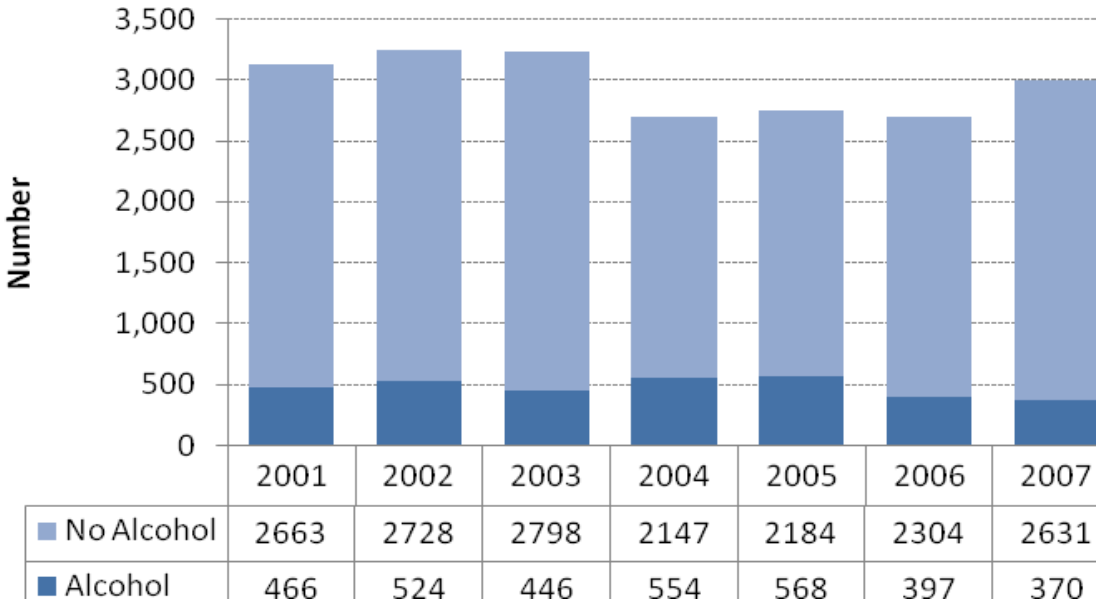
Figure 17: Alcohol-Related Motor Vehicle Fatalities, North Dakota



Source: ND Department of Transportation; Fatality Analysis Reporting System

In the period 1998-2007, there were 24,244 injury crashes, with 4,759 (19.6 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 1998 (13.7 percent) to 2005 (20.6 percent), and then declined in 2006 (14.7 percent) and 2007 (12.3 percent). A total of 46,052 injuries were incurred in these 24,244 crashes for this ten-year period. About 15 percent (N=6,771) of these injuries were the result of alcohol-related crashes (North Dakota Department of Transportation, 2008).

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



	2001	2002	2003	2004	2005	2006	2007
No Alcohol	2663	2728	2798	2147	2184	2304	2631
Alcohol	466	524	446	554	568	397	370

Source: ND Department of Transportation

North Dakota's motor vehicle crash fatality rate in 2006 was 1.44 deaths per 100 million vehicle miles traveled (North Dakota Department of Transportation, 2008). Comparatively, the U.S. rate for 2006 was 1.37 deaths per 100 million miles traveled. Thus, North Dakota's death rate was higher. Since 1979, North Dakota's rate has been lower than or equal to the U.S. rates, with the exceptions of 1999, 2005 and 2007, when it was higher. Regionally, North Dakota's 2006 rate of 1.44 deaths per 100 million miles traveled was higher than Minnesota's rate (0.89 deaths), but lower than the rates of Montana (2.35 deaths) and South Dakota (1.72 deaths). 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 (North Dakota Department of Transportation, 2005).

The North Dakota Department of Transportation (2007) estimates that traffic crashes cost the state $398.9 million in 2006. Of this figure, $127.6 million were due to fatalities, $219.1 million were associated with injuries, and $52.2 million were due to property damage. These figures are based on the following per-incident costs in 2006: death - $1.15 million; injury - $52,900; property damage - $7,500 (North Dakota Department of Transportation, 2007)

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. In 2005-2006, there were 157 alcohol-related incidents involving school-aged students, including 39 in-school suspensions, 112 out-of-school suspensions and no expulsions (North Dakota Department of Public Instruction, 2007). Comparatively, in 2004-2005, there were 117 alcohol-related incidents involving school-aged students, including 12 in-school suspensions, 101 out-of-school suspensions and four expulsions. In 2003-2004, there were 109 alcohol-related incidents involving school-aged students, including 8 in-school suspensions, 101 out-of-school suspensions and no expulsions (North Dakota Department of Public Instruction, 2006).

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 16,700 homicides in the U.S. (Department of Justice, 2006).

From 1999 through 2005, North Dakota had an average of 71 liver disease deaths per year. The state's age-adjusted liver disease death rate increased from 9 deaths per 100,000 in 1999 to 12 deaths per 100,000 in 2005. In 2000, the rate dropped to 8 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, 2007).

According to the Centers for Disease Control and Prevention (CDC), North Dakota averaged about 80 suicide deaths per year in the period 1999 to 2005. North Dakota's age-adjusted suicide rate was approximately 10-11 deaths per 100,000 in 1999 and 2000, but increased to 14 deaths per 100,000 in 2002. The state's suicide rate decreased to 11 deaths per 100,000 population in 2004 and then increase to 14 deaths per 100,000 in 2005. The U.S. suicide death rate has remained stable over the time period at about 11 deaths per 100,000 population (CDC Wonder, 2007).

North Dakota has one of the lowest violent crime and murder rates in the country (Department of Justice, 2006). From 1999 to 2005, North Dakota averaged 8 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, 2007).

According to the CDC (2007), North Dakota averaged 263 unintentional injury deaths per year in the period 1999 to 2005. 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 2000 and 2001 to marks that were below the national benchmark. However, since 2001 North Dakota's unintentional injury mortality rate increased once again to a level that was higher than the U.S. rate in 2003 and 2004 (i.e., 38-40 deaths per 100,000). 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 2004, North Dakota averaged 125 motor vehicle crash fatalities per year. The state's age-adjusted mortality rate had fluctuated slightly over this seven-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, 2007).

Tobacco Consumption in North Dakota

AGE OF FIRST USE

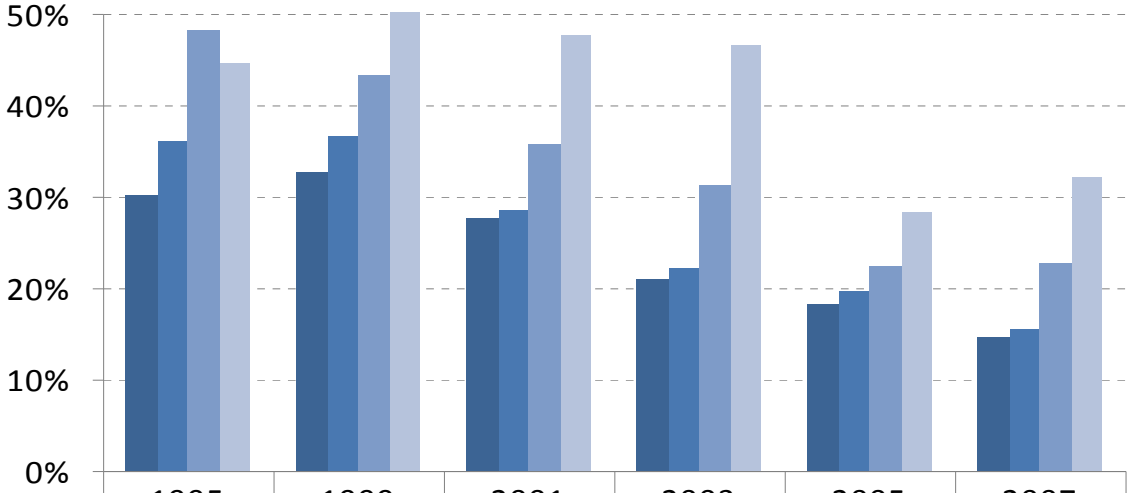
Many school-aged children encounter a situation where they may try cigarette smoking. The Youth Behavioral Risk Survey (YBRS) asked North Dakota student respondents if they had ever tried cigarette smoking, even if it was one or two puffs. In 2007, 49.1 percent of students said they had tried smoking, lower than the 2005 U.S. figure of 54.3 percent. North Dakota's 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, but less likely in 2007 (YRBS, 2008).

Children who try smoking at earlier ages are at greater risk of tobacco use and addiction in later years. The YRBS asked North Dakota high school students (grades 9-12) if they had smoked a whole cigarette before the age of 13 years. In 2007, 13.8 percent of the state's students responded in the affirmative, a figure that was slightly lower than the 2005 U.S. rate of 16 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 equally likely in 2007 (YRBS, 2008).

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 (YRBS, 2008). In 2007, the state's rate of 21.1 percent was slightly lower than the 2005 U.S. rate of 23 percent. This represented a 50 percent decrease in North Dakota youth smoking since 1999 when 40.6 percent smoked. Girls were more likely than boys to have smoked in the past month. This pattern was present in all YRBS survey years.

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



	1995	1999	2001	2003	2005	2007
Grade 9	30.4%	32.9%	27.8%	21.1%	18.2%	14.7%
Grade 10	36.1%	36.7%	28.5%	22.1%	19.6%	15.6%
Grade 11	48.3%	43.2%	35.8%	31.4%	22.4%	22.7%
Grade 12	44.7%	50.3%	47.8%	46.6%	28.3%	32.2%

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 within all grades (9 through 12). Patterns of recent cigarette use among North Dakota high school students were assessed by grade and gender in 2005. In general, increased use of cigarettes corresponded with higher grades. Among 10th and 11th graders, boys' smoking rates were higher than for girls. Conversely, for 9th and 12th graders, girls' smoking rates were higher than for boys (YRBS, 2005).

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 2007, 9.9 percent of North Dakota high school students, compared to 9.4 percent of U.S. students (2005), indicated they smoked at least 20 cigarettes in the past month. Between 1995 and 2005, North Dakota's rates of regular smoking among students were consistently higher than the U.S. rate (YRBS, 2008). Boys' rates were higher in 1995 and 2005, and girls' rates were higher

in 1999, 2001, 2003 and 2007. Rates of regular cigarette smoking among students for North Dakota and the U.S. have markedly declined since 1999 (YRBS, 2008).

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).

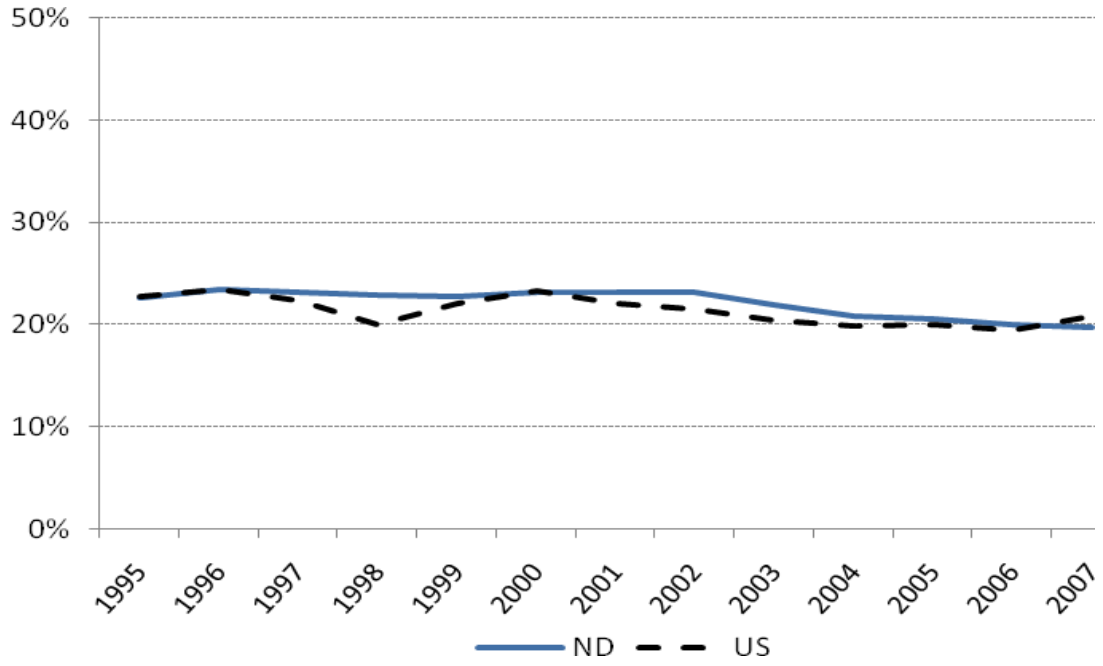
QUITTING CIGARETTES AMONG STUDENTS

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 2007 Youth Behavioral Risk Survey, 56.6 percent of North Dakota high school smokers (grades 9-12) tried to quit smoking during the past year. This figure is slightly higher than the 2005 national figure of 54.6 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 2007, at about 20 to 22 percent **(Figure 20)**. In 2007, current smoker prevalence among North Dakota adults was 20.9 percent. Over the past seven years, North Dakota's smoking percentages have generally mirrored U.S. figures (BRFSS, 2007).

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 20.9 percent smoker prevalence ranked it 19th (highest) among U.S. states and DC. Comparatively, Kentucky had the highest smoker prevalence of 28.2 percent, and Utah had the lowest prevalence of 11.7 percent. Regionally, the lowest smoker prevalence appeared in Western states and the highest prevalence was concentrated in the Southern and Appalachian regions (BRFSS, 2007).

North Dakota men were more likely than women to smoke cigarettes. This pattern has occurred across virtually every year since 1990. In 2007, 22.2 percent of men and 19.7 percent of women were cigarette smokers. North Dakotans were more likely to smoke cigarettes at younger ages **(Table 3)**. Slightly more than one-quarter (26.9 percent) of persons aged 25 to 34 years smoked cigarettes, compared to 20.3 percent of persons aged 55 to 64 years and only 8.8 percent of persons aged 65 and older (BRFSS, 2007).

Table 3: Cigarette Smoking Among Adults Ages 18+, North Dakota, 2007

Overall:	20.9
Gender:	
Male	22.2
Female	19.7
Age:	
18-24	30.3
25-34	26.9
35-44	20.1
45-54	21.6
55-64	20.3
65+	8.8
Race (comb. 1998-2007)	
American Indian	50.1
White	19.6
Asian	20.3
Black	15.5
Other	24.8
Education:	
Less Than High School	29.6
High School or GED	27.4
Some Post-High School	23.8
College Graduate	9.6
Income (thousand):	
<$15,000	43.0
$15,000-24,999	31.4
$25,000-34,999	23.7
$35,000-49,999	19.2
$50,000+	14.9

American Indians (50.1 percent) in North Dakota were more than twice as likely to smoke cigarettes as persons of other races, including whites (19.6 percent) (BRFSS, 1998-2007; Table 3). Other races and their corresponding smoking rates were as follows: Asian (20.3 percent); Black (15.5 percent); and other (24.8 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 29.6 percent, whereas those with some post-high school education smoked at a rate of 23.8 percent, and only 9.6 percent of college graduates smoked cigarettes. Similarly, North Dakotans with lower incomes were more likely to smoke cigarettes (Table 3). More than one-third (43 percent) of persons earning less than $15,000 a year smoke cigarettes, compared to only 14.9 percent of those earning $50,000 or more per year (BRFSS, 2007).

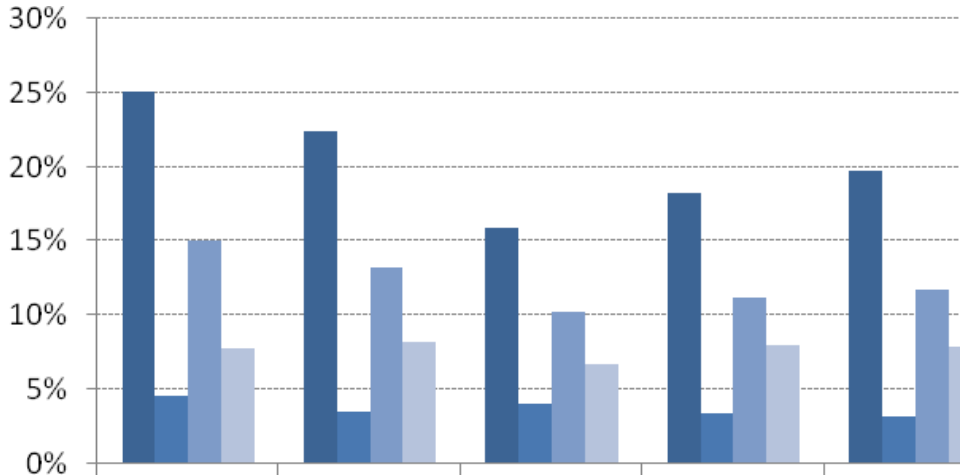
The National Survey of Drug Use and Health (NSDUH) is another source of information on tobacco use in the U.S. This survey, similar to the YRBS and BRFSS, assesses the percent of persons that smoked one or more cigarettes in the past month. The NSDUH determines the percent of state residents that are 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., 2008). North Dakotans age 12 and older were classified in the third-highest group of U.S. states (24.7-26.4 percent smokers). Compared to similarly-aged persons in other U.S. states, North Dakotans aged 12-17 were in the second-highest grouping (11.6-12.9 percent smokers) for recent smokers. State residents aged 18-25 years were in the third-highest grouping (39.0-42.1 percent). Finally, state residents aged 26 years and older were classified in the fourth-highest ranked group of U.S. states (22.8-23.7 percent smokers) (Hughes et al., 2008).

SMOKELESS TOBACCO

According to the YRBS, chewing tobacco, snuff, or dip was used by 11.7 percent of North Dakota high school students in 2007 **(Figure 21)**. By comparison, 8 percent of U.S. high school students used chewing tobacco, snuff, or dip on one or more of the past 30 days in 2005. North Dakota's smokeless tobacco rate declined from a high of 15.1 percent in 1999, but it was higher than the U.S. rate across every YRBS survey year. Boys were six times more likely than girls (19.8 percent versus 3.2 percent) to use smokeless tobacco in 2007 (YRBS, 2008).

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, 1999-2007

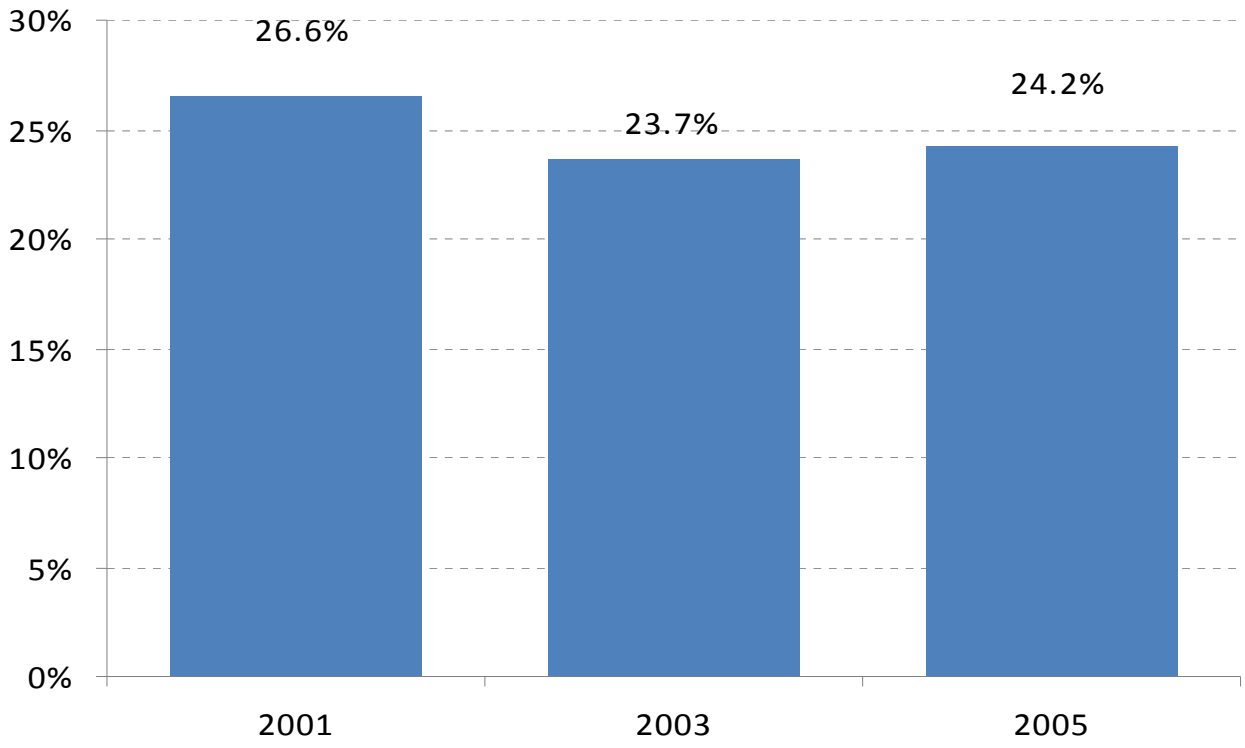


	1999	2001	2003	2005	2007
ND Male	25.1%	22.4%	15.9%	18.3%	19.8%
ND Female	4.6%	3.5%	4.1%	3.4%	3.2%
ND Total	15.1%	13.2%	10.3%	11.2%	11.7%
US Total	7.8%	8.2%	6.7%	8.0%	7.9%

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 2007, this figure dropped to 27.4 percent of students recently using tobacco. The comparable U.S. rate for 2005 was 28.4 percent. Boys (30.5 percent) were more likely than girls (24.2 percent) to have recently used some form of tobacco in 2007 (YRBS, 2008).

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 29.1-31.3 percent (Hughes et al., 2008). North Dakotans aged 12-17 were categorized in the second-highest ranked grouping of U.S. states which had prevalence figures of 14.6-15.9 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 47.5-50.2 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 28.2 to 31.0 percent (Hughes et al., 2008). 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, 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, North Dakota's figure dropped to 32.0 percent (ND CORE, 2007).

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 71 percent to 78 percent. North Dakotans were found to agree that there were great health risks associated with cigarette smoking at low levels relative to other states (Hughes et al., 2008). 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 second-lowest group among persons aged 12-17 years (Hughes et al., 2008).

Tobacco Consequences in North Dakota

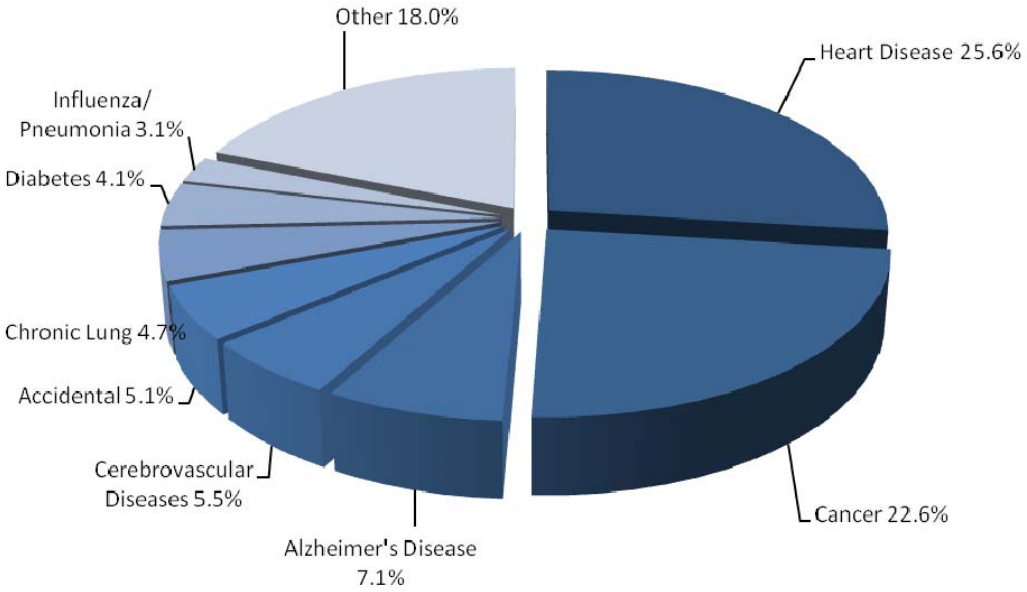
SMOKING AND PREGNANCY

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 (2007), 49 percent of all North Dakota deaths were the result of heart disease (26 percent) or cancer (23 percent) in 2007 **(Figure 23)**. Tobacco use may have contributed to these two major causes of death, as well as other causes such as cerebrovascular disease (6 percent), and chronic lung disease (5 percent). 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 (NCI, 2008). Other cancers linked to tobacco use included oral/pharynx and head/neck.

Figure 23: Causes of Death, North Dakota 2007



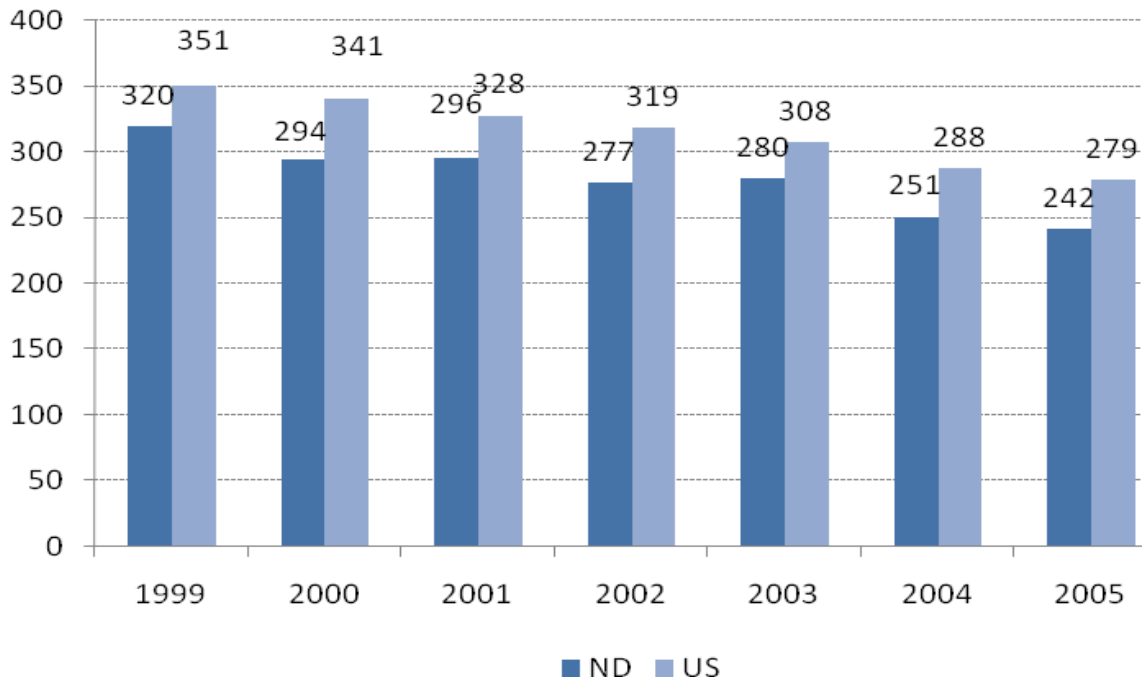
Source: ND Vital Records

North Dakota's lung cancer incidence (i.e., new cases or diagnoses) and mortality rates are lower than the U.S. rates across all years. There are an estimated 392 new cases of lung cancer each year in North Dakota. North Dakota men were much more likely to be diagnosed with and die from lung cancer. From 1999 through 2004, there was an average of 321 lung cancer deaths per year in North Dakota. Concerning age-adjusted rates, North Dakota's lower rates within this time period occurred in 1999 (42 per 100,000) and 2002 (43 per 100,000), and its highest rates occurred in 2001 (49 per 100,000) and 2004 (49 per 100,000). By comparison, U.S. lung cancer rates have ranged from 53 to 56 deaths per 100,000 during 1999-2005 (CDC Wonder, 2007).

Chronic obstructive pulmonary disease (COPD) and emphysema are grave health consequences associated with chronic tobacco use. In the period from 1999 to 2005, North Dakota averaged 292 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, 2007).

Cardiovascular disease, the leading cause of mortality in the nation and state, was responsible for approximately 2,290 deaths per year in North Dakota **(Figure 24)**. The state's age-adjusted rate, substantially lower than the U.S. rate, has declined from 320 deaths per 100,000 in 1999 to 242 deaths per 100,000 in 2005. The U.S. cardiovascular mortality rate has also declined from 351 deaths per 100,000 in 1999 to 279 deaths per 100,000 in 2005 (CDC Wonder, 2007).

Figure 24: Cardiovascular Disease Mortality, North Dakota and United States



Source: CDC Wonder (2007)

The CDC 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

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).

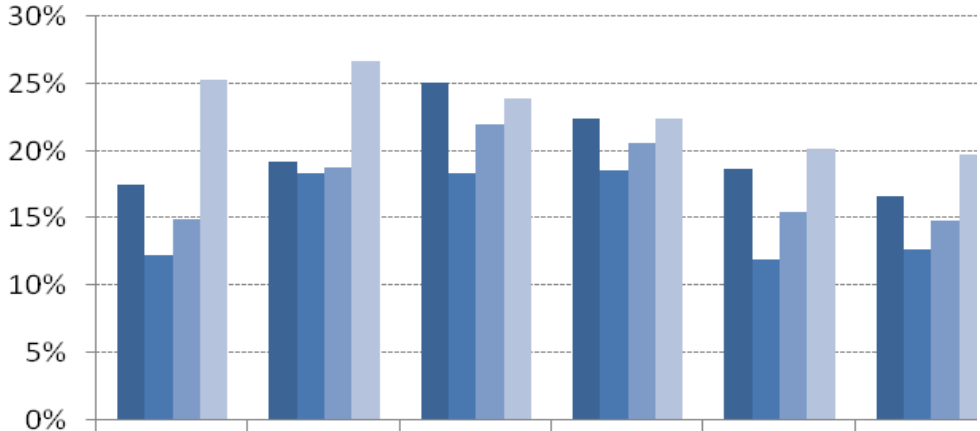
TRYING MARIJUANA FOR THE FIRST TIME

The Youth Risk Behavioral Survey indicated that 5.4 percent of North Dakota high school students in 2007 tried marijuana for the first time before the age of 13 years. Comparatively, the U.S. prevalence was 8.7 percent in 2005 and, in fact, the U.S. prevalence was higher than the North Dakota prevalence across all YRBS survey years. North Dakota boys were twice as likely as girls to have tried marijuana before age 13 (YRBS, 2008).

RECENT MARIJUANA USE

The YRBS (2008) found that North Dakota's 14.8 percent prevalence of marijuana use in the past month in 2007 was substantially lower than the 2005 U.S. prevalence of 20.2 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 **(Figure 25)**.

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



	1995	1999	2001	2003	2005	2007
ND Male	17.5%	19.2%	25.1%	22.4%	18.7%	16.7%
ND Female	12.3%	18.4%	18.4%	18.6%	12.0%	12.7%
ND Total	14.9%	18.8%	22.0%	20.6%	15.5%	14.8%
US Total	25.3%	26.7%	23.9%	22.4%	20.2%	19.7%

Source: Youth Risk Behavioral Surveillance Survey

North Dakota boys were consistently more likely than girls to have used marijuana in the past month (YRBS, 2008). 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). Comparatively, the U.S. figure for marijuana use in the past month was 16.7 percent in 2005. In 2006, this figure declined sharply to 9.5 percent (NDCORE, 2007).

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 2007, 6.2 percent of North Dakota students, compared to 7.6 percent of U.S. students, indicated they had used cocaine at least once (YRBS, 2008). From 1995 to 2005, the U.S. prevalence for student cocaine use was higher than the North Dakota prevalence for four of these five 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 (YRBS, 2008).

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, 11.1 percent indicated using inhalants one or more times during their lives in 2007 compared to 12.4 percent of 2005 U.S. high school students (YRBS, 2008). Since 1999, prevalence

for both North Dakota and the U.S. have gradually but steadily declined over time. North Dakota girls had slightly higher prevalence than for boys (12.1 percent and 10.2 percent, respectively, in 2007) to have used inhalants during their lives. The prevalence among both genders has declined over time (YRBS, 2008).

LIFETIME HEROIN USE AMONG STUDENTS

Heroin is a very powerful and lethal drug, especially in the hands of juveniles. The Youth Risk Behavioral Survey does ask 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. In 2007, the North Dakota prevalence dropped to 2.4 percent. 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 2007, 4.1 percent of North Dakota high school students had tried meth at least once, compared to 6.2 percent of 2005 U.S. high school students. North Dakota's use prevalence for 2007 was less than one-half of the state's 1999 prevalence of 10.5 percent (YRBS, 2008). 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 and 2007. However, girls (11.7 percent) were more likely than boys (9.4 percent) to have used meth in 1999 (YRBS, 2008).

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), and 2.4 percent (2007) 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) and 6.3 percent (2005), figures that are higher than both prevalence estimates for North Dakota high school students. North Dakota boys were more likely than girls to have tried ecstasy at least once (YRBS, 2008).

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 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. North Dakota boys were 2-3 times more likely than girls to have used steroids (YRBS, 2008).

LIFETIME INTRAVENOUS DRUG USE AMONG HIGH SCHOOL STUDENTS

According to the Youth Risk Behavioral Survey, 1.8 percent of North Dakota high school students in 2007 and 2.3 percent of U.S. high school students in 2005 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 (YRBS, 2008).

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 2007, 2.7 percent of North Dakota high school students, compared to 4.5 percent of U.S. high school students (2005) 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 2003, but has declined in recent years. The U.S. prevalence has steadily declined over time from a high of 8.8 percent in 1995 (YRBS, 2008).

CONTACT WITH ILLEGAL DRUGS ON SCHOOL PROPERTY

About one-fifth (18.7 percent in 2007) of North Dakota high school students and one-quarter (25.4 percent in 2005) of U.S. high school students 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 the most recent years. North Dakota boys were substantially more likely than girls to have engaged in this drug-related behavior on school property (YRBS, 2008).

RECENT ILLICIT DRUG USE

In the NSDUH (2004-2005), 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 5.7-7.2 percent (Hughes et al., 2008). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states which had prevalence figures of 6.8-9.0 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 12.9-17.2 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 3.9 to 5.0 percent (Hughes et al., 2008).

MARIJUANA USE

In the NSDUH (2005-2006), 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 7.5-8.8 percent. North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states which had a prevalence range of 10.0-11.9 percent (Hughes et al., 2008). 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 18.9-24.1 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 4.3 to 5.7 percent (Hughes et al., 2008).

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 4.3-5.2 percent (Hughes et al., 2008). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states which had prevalence figures ranging from 4.5-5.9 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 9.6-14.0 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 2.7 to 3.3 percent (Hughes et al., 2008).

ATTITUDES TOWARD MARIJUANA SMOKING

The NSDUH 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 second-highest ranked grouping of U.S. states, which had prevalence figures ranging from 39.4-41.8 percent (Hughes et al., 2008). State residents aged 12-17 years were classified in the second-highest ranked grouping of U.S. states which had prevalence figures ranging from 35.0 to 36.8 percent. North Dakotans aged 18-25 years were placed in the third-highest ranked grouping, which had prevalence figures of 22.1-25.3 percent. Finally, state residents aged 26 years and older were categorized in the second-highest ranked grouping of U.S. states, which had agreement of 42.8-44.9 percent (Hughes et al., 2008). 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 2.5-3.3 percent (Hughes et al., 2008). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states which had prevalence of 4.0-4.6 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 5.6-7.6 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 1.9 to 2.3 percent (Hughes et al., 2008).

The North Dakota Core Survey, conducted in 2003-2005, asked college students how often they had used an illicit drug in the past 30 days (Walton, 2005). Findings indicated that North Dakota college students consumed illicit drugs at prevalence that were equal to or lower than the National college student prevalence for 2005. The North Dakota and U.S. prevalence for each of the following drugs were as follows: amphetamines (2.5 percent vs. 3.3 percent); cocaine (1.3 percent vs. 2.1 percent); sedatives (1.2 percent vs. 2.0 percent); hallucinogens (1.0 percent vs. 1.0 percent); designer drugs (0.8 percent vs. 0.8 percent); opiates (0.7 percent vs. 0.7 percent); inhalants (0.6 percent vs. 0.5 percent); steroids (0.5 percent vs. 0.4 percent); other (0.9 percent vs. 0.8 percent) (Walton, 2005).Figures from the 2006 NDCORE survey were roughly similar to the previous year with some notable decreases in use of some drugs such as hallucinogens and inhalants (NDCORE, 2007).

COCAINE USE IN PAST YEAR

In the NSDUH (2005-2006), 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 1.6-2.1 percent (Hughes et al., 2008). North Dakotans aged 12-17 were categorized in the third-highest ranked grouping of U.S. states, which had prevalence of 1.6-1.7 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 4.2-5.6 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., 2008).

PAINKILLER USE

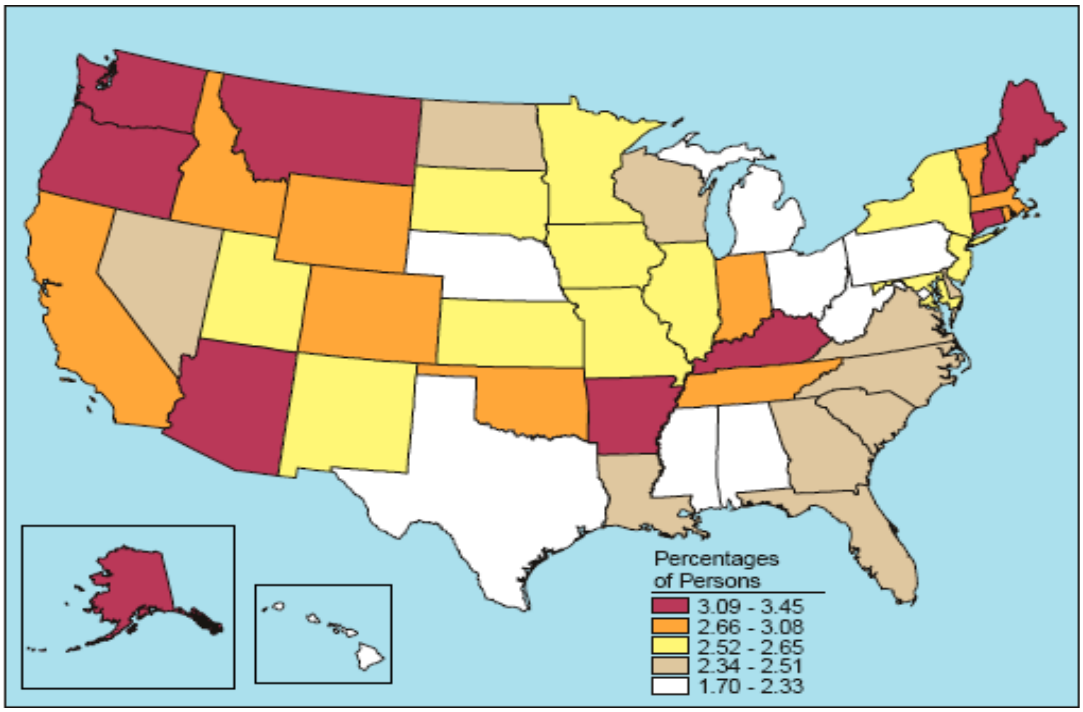
During 2005-2006, NSDUH respondents were asked whether they had engaged in non-medical use of painkillers in the past year. North Dakotans aged 12 and older used these drugs at a prevalence that warranted classification into the lowest-ranked U.S. state grouping which had a prevalence of 3.9-4.4 percent (Hughes et al., 2008). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states, which had a prevalence of 5.0-6.3 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states, which had painkiller use prevalence of 9.1-11.0 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 2.6 to 3.0 percent (Hughes et al., 2008).

DRUG DEPENDENCE OR ABUSE

NSDUH respondents (2005-2006) 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., 2008). North Dakotans aged 12-17 were categorized in the lowest ranked grouping of U.S. states, which had a 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 dependence/abuse prevalence of 5.4-7.1 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 1.2 to 1.4 percent (Hughes et al., 2008).

In the National Survey on Drug Use and Health (NSDUH), respondents were asked whether they had any illicit drug dependence in the past year. North Dakotans aged 12 and older had dependence that warranted classification into the lowest-ranked U.S. state grouping, which had prevalence figures of 1.5-1.8 percent (Hughes et al., 2008). North Dakotans aged 12-17 were categorized in the second-highest ranked grouping of U.S. states, which had a prevalence of 2.3-2.5 percent **(Figure 26)**.

Figure 26: Any Illicit Drug Dependence in Past Year, Ages 12-17, 2005-2006



Source: SAMHSA, Office of Applied Studies, National Survey on Drug use and Health, 2005 and 2006.

NOTE: Any illicit drug includes marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or any prescription-type psychotherapeutic used nonmedically.

North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states, which had dependence prevalence of 3.5-4.9 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 0.8 to 1.0 percent (Hughes et al., 2008).

Illicit Drug Consequences in North Dakota

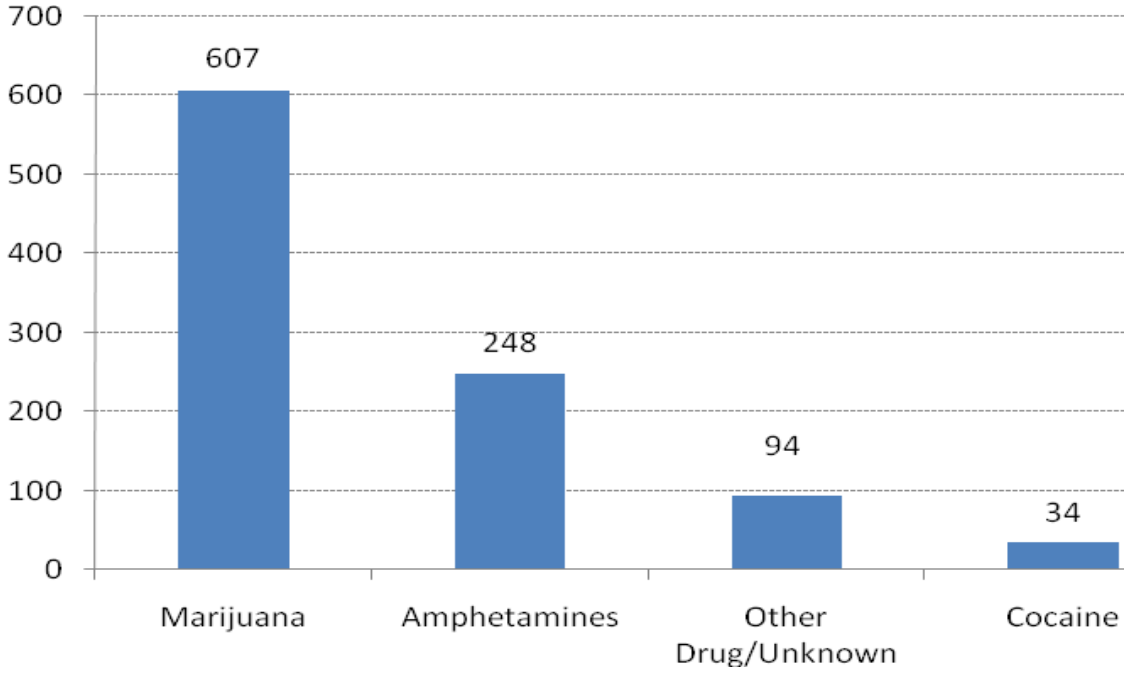
NEEDING TREATMENT BUT NOT RECEIVING IT

In the NSDUH (2005-2006), 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., 2008). North Dakotans aged 12-17 were categorized in the lowest-ranked grouping of U.S. states, which had prevalence figures of 3.5-4.0 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 1.0 to 1.2 percent (Hughes et al., 2008).

GETTING DRUG TREATMENT

According to the Treatment Episode Data Set (TEDS), marijuana (607 admissions) was the most commonly abused drug for which people sought professional treatment in North Dakota in 2007 **(Figure 27)**.

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



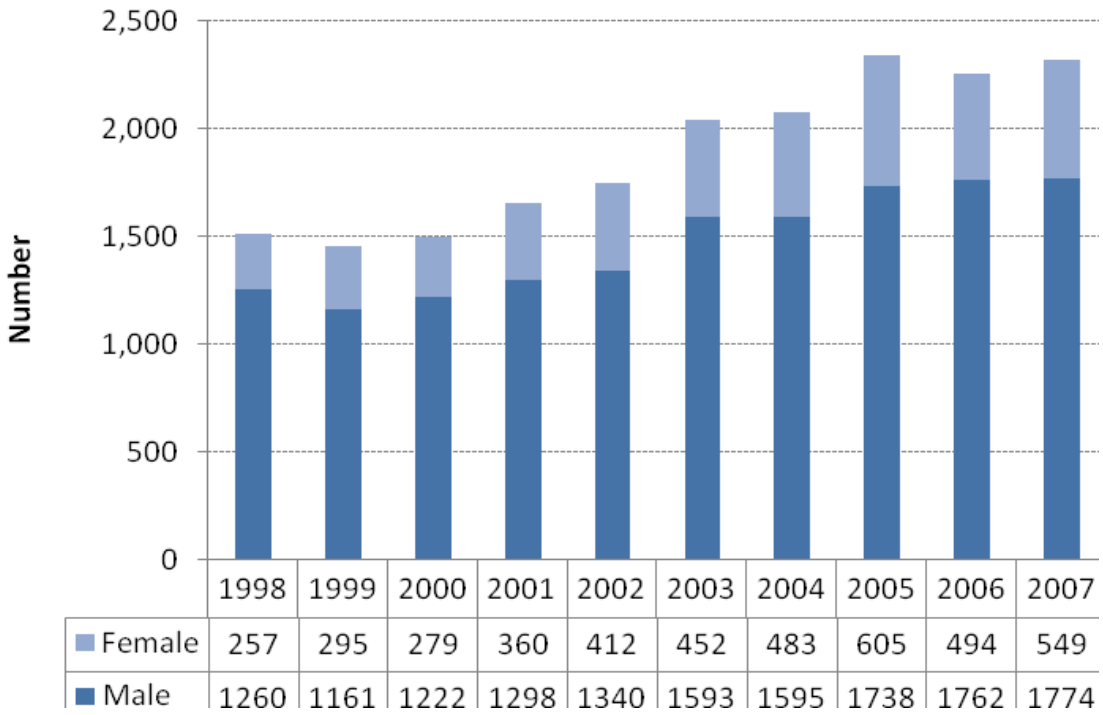
Source: Treatment Episode Data Set

Amphetamines were the second most commonly abused drug with 248 admissions. Among the other drug-related treatment admissions, 34 admits were for cocaine addiction and 94 admits were for some other drug (TEDS, 2007). Men comprised 69.9 percent of marijuana admissions and 49.2 percent of amphetamine admissions in North Dakota in 2007. Whites comprised 72.0 percent of marijuana admissions and 80.6 percent of amphetamine admissions. American Indians, totaling 5 percent of the state's population, comprised 22.6 percent of the marijuana admissions and 16.9 percent of the amphetamine admissions in 2007. Marijuana clearly is a teen problem, as those aged 12-17 years comprised 29.2 percent of the marijuana admissions in 2005. 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, North Dakota had a higher percentage of admissions being for marijuana and amphetamines and a lower percentage for cocaine and heroin (TEDS, 2007). Compared to the previous year (2006), North Dakota's 2007 treatment admissions had increases in numbers for alcohol addiction and decreases for marijuana and amphetamine addictions.

DRUG ARRESTS

In North Dakota, drug arrests have increased 55 percent since 2000 **(Figure 28)**.

Figure 28: Drug Arrests by Gender, North Dakota

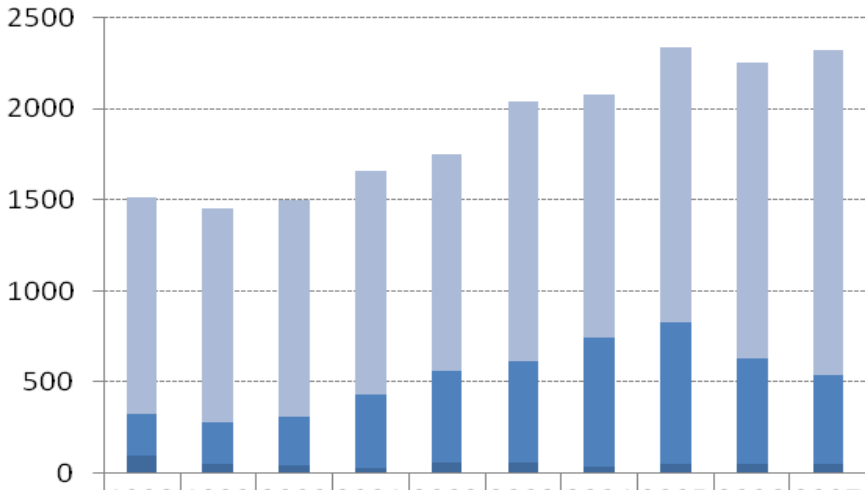


	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Female	257	295	279	360	412	452	483	605	494	549
Male	1260	1161	1222	1298	1340	1593	1595	1738	1762	1774

Source; ND Office of Attorney General, BCI, 2008

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 and 2007 (ND OAG, 2008) **(Figure 29)**.

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

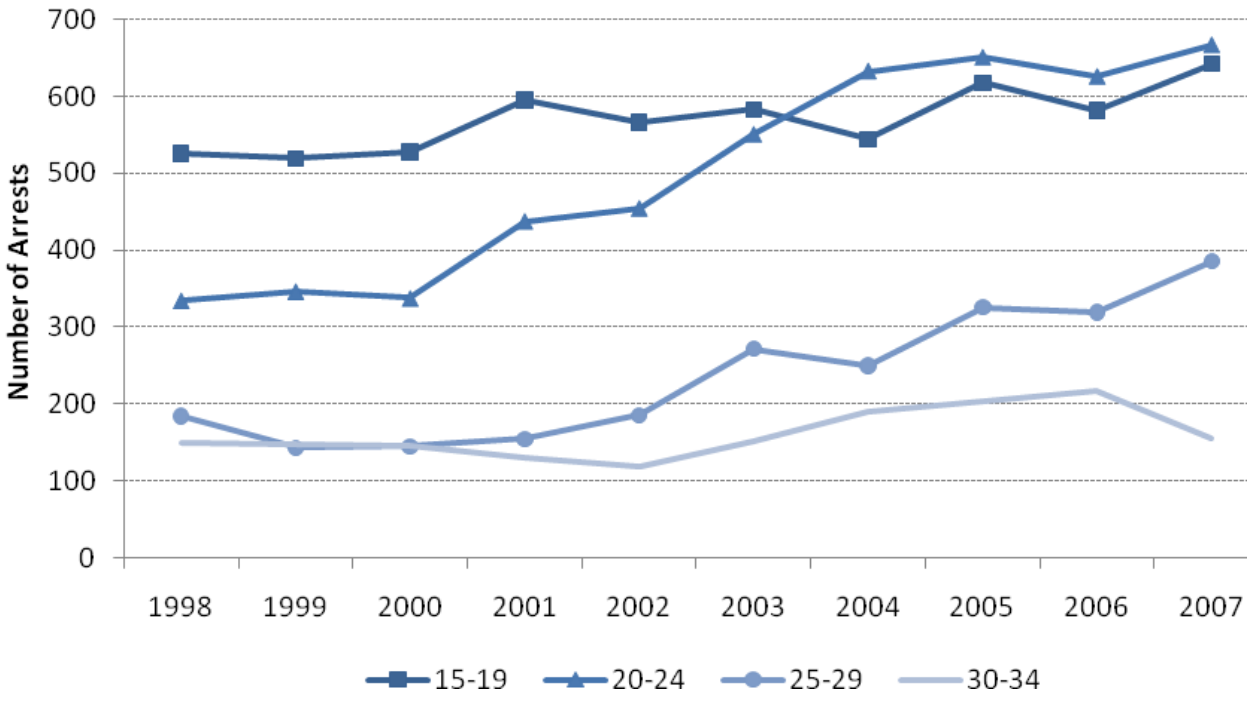


	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Marijuana	1189	1173	1189	1221	1189	1428	1333	1516	1621	1783
Other Drugs or Narcotics	232	230	267	404	502	555	707	774	582	490
Opiates, Cocaine	96	53	45	33	61	62	38	53	53	50

Source: ND Office of the Attorney General, BCI, 2008
NOTE: Meth is included in the ‘Other Drugs’ category.

Regarding drug arrests in North Dakota, ages 15 to 24 years account for 56.4 percent of arrests (Figure 30). Large percentage increases in arrests were noted in recent years for persons aged 15 to 29 years, whereas drug arrests for persons aged 30-34 years declined from 2006 to 2007 (ND OAG, 2008).

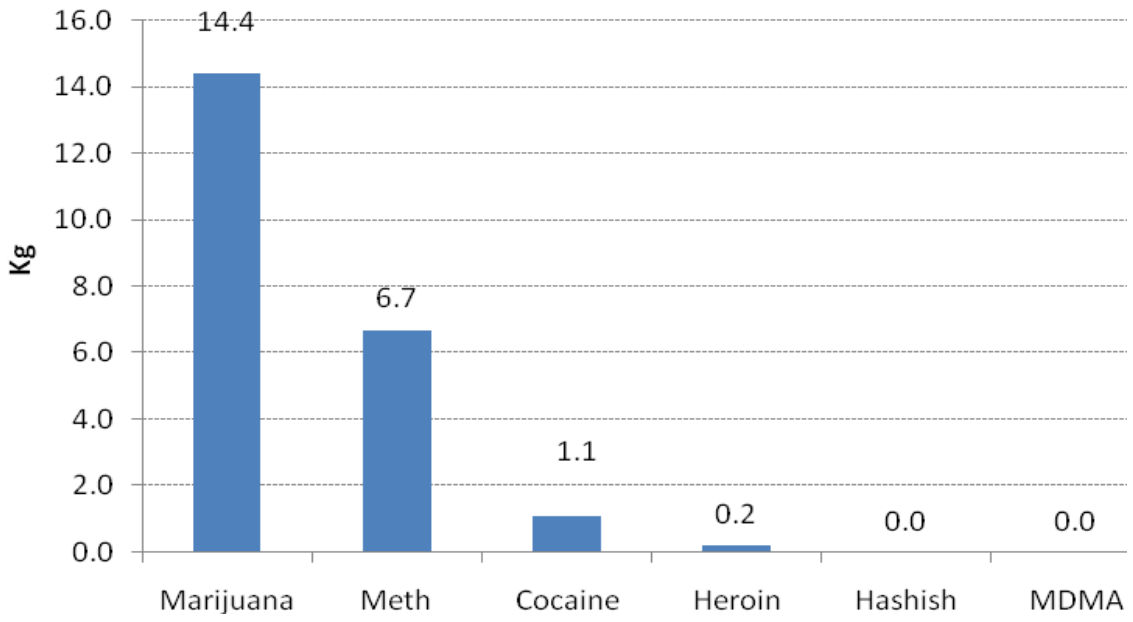
Figure 30: Drug Arrests by High-Risk Age Groups, North Dakota



Source: ND Office of Attorney General, BCI, 2008

In North Dakota, there were 62 Drug Enforcement Administration (DEA) drug violation arrests in 2006. Marijuana leads the way with 14.4 kilograms in Federal drug seizures in North Dakota in 2006. Other seizures included meth (6.7 Kg), cocaine (1.1 Kg) and heroin (0.2 Kg) **(Figure 31; DEA, 2007)**.

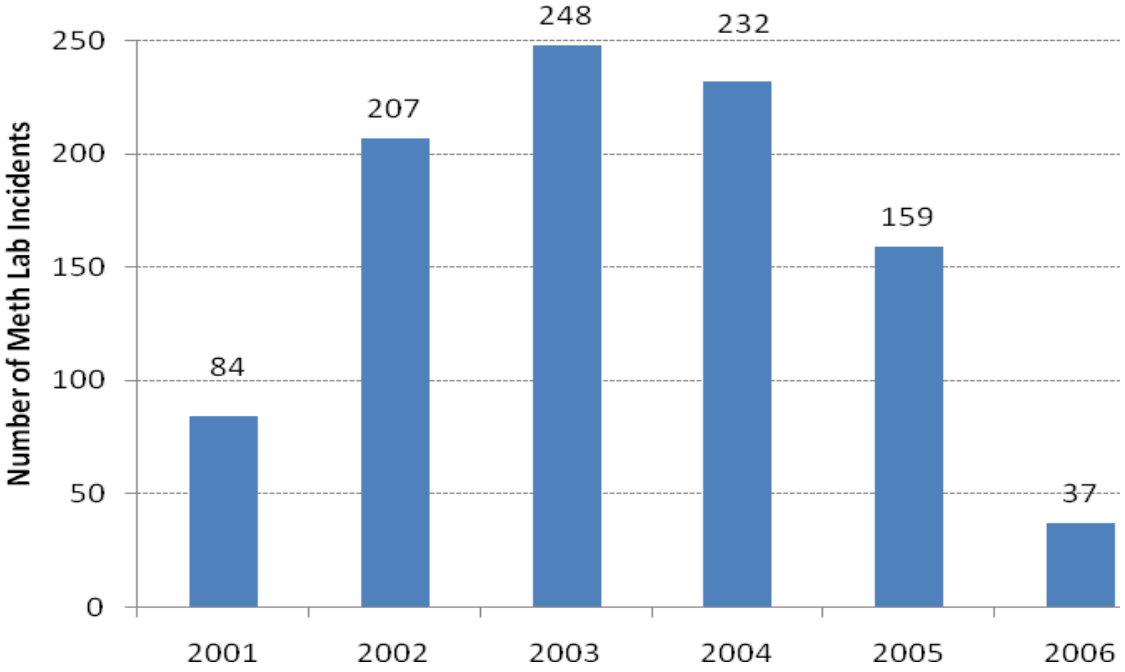
Figure 31: Federal Drug Seizures, North Dakota, 2006



Source: U.S.DEA; http://www.usdoj.gov/dea/pubs/state_factsheets/northdakota2007.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 and the El Paso Intelligence Center, the number of meth lab incidents in North Dakota increased from 84 in 2001 to 248 in 2003, but then sharply declined to 37 in 2006 **(Figure 32)**.

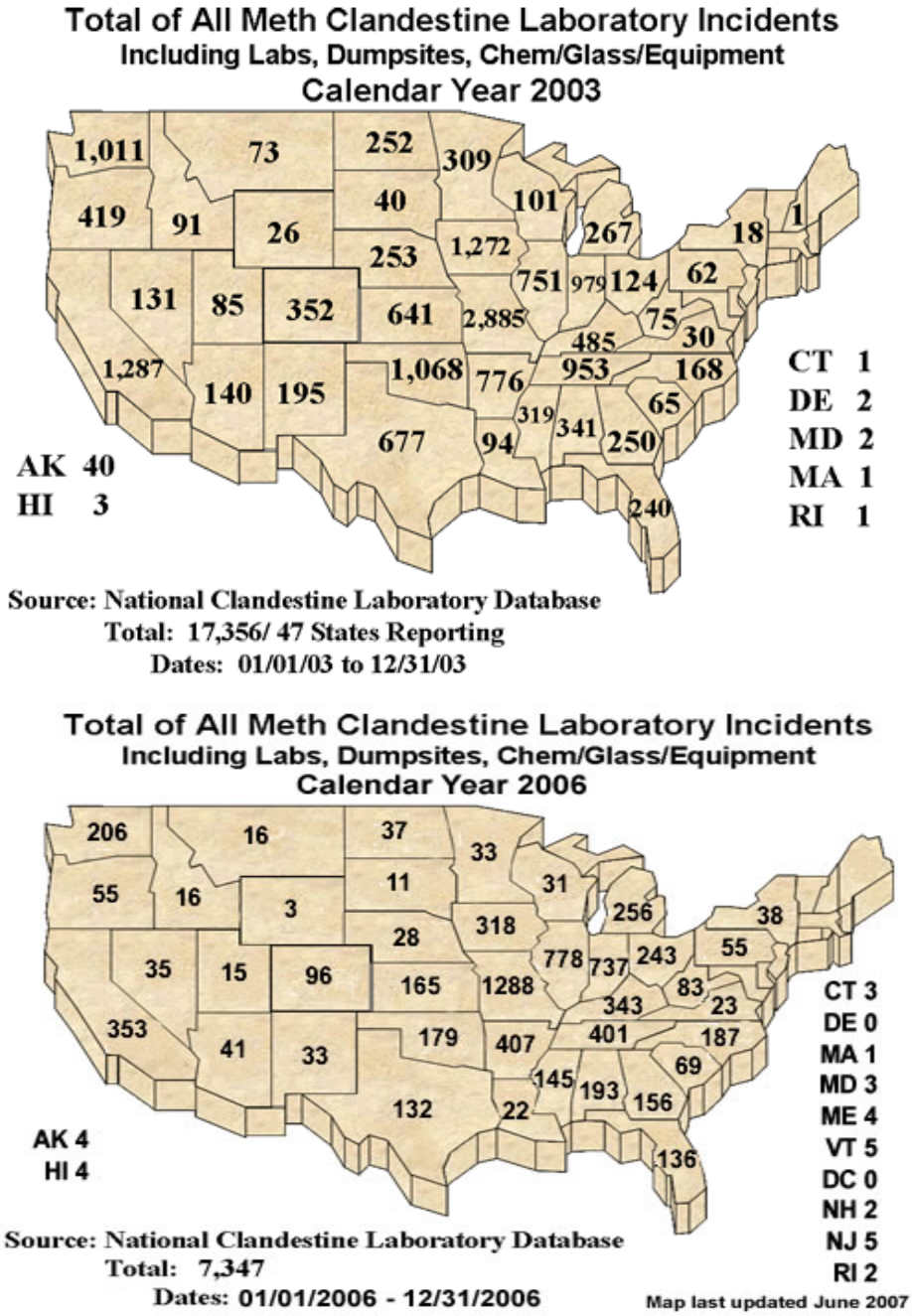
Figure 32: Methamphetamine Lab Incidents, North Dakota



Source: U.S. DEA, 2007; http://www.usdoj.gov/dea/pubs/state_factsheets/northdakota2007.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 2006. 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 2006



Source: U.S. Drug Enforcement Agency (2008); http://www.usdoj.gov/dea/concern/map_lab_seizures.html

Generally, there are about two or three deaths related to drug-related behavior per year in North Dakota. In the period 2002 through 2005, the state's age-adjusted rate ranged from 0.2 to 0.3 drug-related deaths per 100,000 population. By comparison, the U.S. rates for this time period ranged from 0.8 to 1.0.drug-related deaths per 100,000 population (CDC Wonder, 2007).

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Appendix A: Charter

North Dakota

State Epidemiological Outcomes Workgroup

CHARTER (Updated January 2008)

OVERVIEW OF THE SEOW

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[1] will be used when developing the prevention framework.

The prevention framework will be developed using epidemiological[2] data.

The framework will be developed addressing the unique issues of North Dakota involving our rurality and cultural diversity.

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[1] An approach to improving health that focuses on population-based measures.

[2] The study of the various factors influencing the occurrence, distribution, prevention, and control of disease, injury and other health-related events in a defined human population.

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.

Mission:

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

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 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 Substance Use and Abuse 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 the State Epidemiological Data System (SEDS) and supported with data from a variety of state agencies. Data will include race, gender and race/ethnicity where available. Additionally, sub-state data sources will be collected for assessment of assets and resources, and identification of gaps in data collection.

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:

SEOW Contract in Effect	March 15, 2006
Core Group Organized	June 19, 2006
SEOW Organizational Meeting	July 26, 2006

SEOW Expiration: The SEOW will not expire, but will continue its work into the SEW upon the state's successful application of the Strategic Prevention Framework State Prevention Grant.

SEOW Members:

Current Co-Chairs:

Becky Byzewski

Region VIII Substance Abuse Prevention/Safe Communities

Community Action Partnership

202 East Villard

Dickinson, North Dakota 58601

(701) 227-0131 – Telephone

(701) 2274750 – Facsimile

beckyb@dickinsoncap.org

Kimberly Lemieux

Region III Substance Abuse Prevention/Safe Communities

Rolette County Public Health

PO Box 757

Rolla, North Dakota 58367

(701) 477-5646 - Telephone

(701) 477-9578 – Facsimile

klemieux@nd.gov

Responsibilities: Assist facilitator with drafting the agendas for SEOW meetings; Attend and chair meetings of the SEOW; Participate in meetings of the SEOW's Core group

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
Monitor budget

Internal Research Consultant
Dr. Mariah Tenamoc
Lead Research Analyst, ND Department of Human Services
10% FTE
Responsibilities:
Provide initial orientation for key personnel and SEOW
Work with evaluator to design evaluation pieces, including formative and summative reporting
Attend SEOW meetings
Consult with epidemiologists on assessment methods

Project Staff
Pam Sagness
Prevention Administrator, Division of Substance Abuse & Mental Health Services
10% FTE
Responsibilities:
ND Department of Human Services Representative
Serve as Project Director's designee at meetings when necessary
Facilitate orientation to SEOW
Administer NOMs data collection process

SEOW Epidemiologists

Dr. Kyle Muus
Center for Rural Health, University of North Dakota
40% FTE
Dr. Jacqueline Gray
8% FTE
Center for Rural Health, University of North Dakota
Responsibilities:
Attend all SEOW meetings
Communicate with agencies and organizations to receive reports and data files
Review supporting databases
Design, conduct and analyze readiness data
Identify current assessment tools
Reference sources of data and indicators used for Epi Profiles
Build a prevention inventory and repository
Conduct and document analysis of collected data in a data workbook
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
Lindsey Bergeron
Criminal Justice Department, North Dakota State University
31% FTE
Responsibilities:
Develop process evaluation methodology
Write quarterly normative evaluations and final summative evaluation

SEOW Facilitator & Support
Deb Nelson
President, DLN Consulting, Inc.
20% FTE

Lydia Camp

Project Manager, DLN Consulting, Inc.

18% FTE

Responsibilities:

Facilitate monthly meetings

Assist in identification of additional SEOW members and collect contact information

Be the central communication outlet for the SEOW

Work with SEOW members to help them identify and establish ground rules for the extended development and organizational ground rules for the SEOW

Facilitate the development of the SEOW Charter and Epidemiological Profiles

Provide meeting minutes to all stakeholders

Facilitate the members in identifying and creating a plan for sustainability, including an assessment of the ability and capacity to achieve sustainability

Workgroup Members:

Workgroup members participate in the scheduled monthly meetings of the SEOW.

Their responsibilities include:

Attending the scheduled meetings of the SEOW;

Providing relevant data on substance use and consequences;

Providing direction in the analysis and interpretation of the data;

Assist in the development of the SEOW charter;

Provide direction and guidance for the development of the Epi Profiles;

Provide direction and guidance for the NOMs data collection plan.

Agencies and organizations currently participating in the SEOW include the following (Updated 01/2008:

Agency/Organization	Individual Representative(s)	Title
Community Action Partnership	Becky Byzewski	Southwest Coalition Prevention & Safe Communities Program Coordinator
CSAP's Central CAPT	Tou Lee	Prevention Specialist

Dacotah Foundation	Doreen Eichele	Chief Operating Officer
	Rebecca Gerhardt	Region 7 Prevention & Safe Communities Program Coordinator
Fargo Cass Public Health	Robyn Litke	Safe Communities of the Red River Valley Coordinator
Mental Health America of North Dakota	Mark LoMurray	ND Adolescent Suicide Prevention Project Director
ND Department of Corrections and Rehabilitation	Patrick Foley	Research and Program Evaluation Youth Director
	Mike Froemke	ND State Penitentiary Director of Treatment
	Rick Hoekstra	Field Services Treatment Program Manager
	Robyn Schmalenberger	Field Services Program Manager
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
	Stephen Pickard	Medical Epidemiologist
ND Department of Human Services		
	Pamela Sagness	Division of Mental Health & Substance Abuse Services, Prevention Administrator
	Mariah Tenamoc	Lead Research Analyst
	Don Wright	Division of Mental Health & Substance Abuse Services Assistant Director
ND Department of Public Instruction	Patrice S. Anderson	Assistant Director
	Drinda Olsen	School Health Unit Coordinator
	Andrea D. Peña	Coordinated School Health YRBS Data Manager & HIV/AIDS Coordinator
	Wayne Sanstead	State Superintendent
ND Department of Transportation	Lynn Heinert	Office of Traffic Safety Traffic Records Manager

	Karin Mongeon	Office of Traffic Safety, Manager
	Francis G. Ziegler	Director
ND Highway Patrol	Mark Nelson	Superintendent
	Mike Gerhart	Safety and Education Officer
ND Office of the Attorney General	Judy Volk	Bureau of Criminal Investigation Information Services Manager
	Colleen Weltz	Bureau of Criminal Investigation UCR/IBR Program Manager
ND Students Against Destructive Decisions	Lee Erickson	Coordinator
ND State University	Lindsey Bergeron	Project Evaluator
	Greg Sanders	Child Development & Family Science Associate Dean
	Kevin Thompson	Criminal Justice & Political Science Professor & Department Chair
	Duane Hauck	Extension Service Director
Office of the First Lady	Mikey L. Hoeven	First Lady
Office of the State Tax Commissioner	Kathy Strombeck	Research Analyst
Rolette County Public Health District	Kimberly Lemieux	Region III Prevention & Safe Communities Program Coordinator
Three Affiliated Tribes	Jarret Baker	Boys & Girls Club Executive Director
Three Affiliated Tribes Tourism	Scott Eagle	Tourism Director
University of North Dakota	Jacqueline Gray	Center for Rural Health Assistant Professor
	Kyle Muus	Center for Rural Health Assistant Professor & Senior Research Associate
	Karin Walton	ND Higher Education Consortium for Substance Abuse Prevention Director

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	04-07

abuse indicators.	
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

SUBSEQUENT YEAR ACTIVITIES:

The work of the SEOW will continue beyond the first year, either as a SEOW or as a SEW under the direction

of the SPF-SIG. The epidemiological workgroup will concentrate its activities to assist in the development of a state prevention framework through its five-step process:

ASSESSMENT—The SEOW will profile the population needs, resources and readiness to include:

The magnitude of substance use and related problems

Risk and protective factors

Assets and resources

Gaps in services and capacity to fill those gaps

Readiness to act

Specifications of baseline data to measure progress and outcomes

Identify priorities

CAPACITY BUILDING—The SEOW will use statewide assessments and secondary data sources to evaluate:

Capacity to include determination of task responsibilities

Skill development needs of key leadership in communities

Mobilization to include evaluation of time, people and finances

COMMUNITY PLANNING FOR OUTCOMES—The SEOW will assist in various subs-state levels by:

Identifying priorities based on problem assessment

Establishing key milestones and outcomes

Monitoring plans and recommending adjustments

IMPLEMENTING EVIDENCE-BASED STRATEGIES—The SEOW will analyze data to:

Identify target populations, key strategies and outcomes, and cost estimates

Identify programs, strategies and appropriate models

Guide selection of outcome-based strategies

MONITOR AND EVALUATE

Perform ongoing statewide monitoring and evaluation

Provide technical assistance to local communities in monitoring and evaluation

Ensure collection of performance data

Participate in cross-evaluations

Process Evaluation Plan:

Process evaluations will consist of quarterly evaluation reports assessing the successful process of the SEOW v primarily consist of observing group meetings and ensuring that the group is successfully meeting required dates and deadlines.

Meetings of the SEOW:

Meetings will be held on the last Wednesday of each month, with no meeting in December.

Linkages:

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 and by Indian Health Services. 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.

A representative of the Center for Substance Abuse Prevention (CSAP) Central Centers for the Application of Prevention Technologies (CAPT) attends the SEOW meetings to provide technical assistance. The Pacific Institute for Research and Evaluation (PIRE) provides additional technical assistance to the SEOW.

Procedural Linkages:

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. Monthly meeting minutes, action steps, and support documentation will be sent within one week of each meeting. Agendas and meeting notices will be sent within ten days of the next meeting. An embedded website is available to SEOW members; it serves as a tool to disseminate SEOW information among members.

Sustainability:

Sustainability is important to the North Dakota SEOW. Sustainability is achieved when a strong systemic and organizational framework is established. This is accomplished by:

Clarifying mission compatibility;
Establishing leadership endorsement;
Facilitating activity, program and strategy system integration; and
Adapting to system and local needs, conditions, and expectations.

Through the development and acceptance of this charter by the participants in the North Dakota State Epidemiological Outcomes Workgroup, sustainability of the group will be achieved.

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

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

Appendix B: North Dakota SEOW Committee Members

Patrice S. Anderson	ND Department of Public Instruction	Bismarck
Jarret Baker	Boys & Girls Club	New Town
Lindsey Bergeron	North Dakota State University	Fargo
Clint Boots	North Dakota Department of Health	Bismarck
Melissa Parsons	North Dakota Department of Health	Bismarck
Becky Byzewski	Southwest Coalition Prevention	Dickinson
Lydia Camp	DLN Consulting, Inc.	Dickinson
Terry Dwelle	ND Department of Health	Bismarck
Scott Eagle	Three Affiliated Tribes Tourism	New Town
Doreen Eichele	Dacotah Foundation	Bismarck
Lee Erickson	North Dakota SADD	Hillsboro
Patrick Foley	ND Dept. of Corrections/Rehabilitation	Bismarck
Mike Froemke	ND Dept of Corrections/Rehabilitation	Bismarck
Rebecca Gerhardt	Dacotah Foundation	Bismarck
Mike Gerhart	ND Highway Patrol	Bismarck
Jacqueline Gray	University of North Dakota	Grand Forks
Duane Hauck	NDSU Extension Service	Fargo
Lynn Heinert	ND Department of Transportation	Bismarck
Mikey Hoeven	Office of the First Lady	Bismarck
Tou Lee	CSAP's Central CAPT	Mounds Vw.
Kimberly Lemieux	Rolette County Health District	Rolla
Robyn Litke	Fargo Cass Public Health	Fargo
Mark LoMurray	ND Mental Health Association	Bismarck
Karin Mongeon	ND Department of Transportation	Bismarck
Devaiah Muccatira	ND Department of Health	Bismarck
Kyle Muus	University of North Dakota	Grand Forks
Mark Nelson	North Dakota Highway Patrol	Bismarck
Deb Nelson	DLN Consulting, Inc.	Dickinson
Drinda Olsen	ND Department of Public Instruction	Bismarck
Melissa Parsons	ND Department of Health	Bismarck
Elizabeth Miller	ND Department of Public Instruction	Bismarck
Stephen Pickard	ND Department of Health	Bismarck
Pamela Sagness	ND Department of Human Services	Bismarck
Greg Sanders	North Dakota State University	Fargo
Wayne Sanstead	North Dakota Department of Public Instruction	Bismarck
Robyn Schmalenberger	ND Dept of Corrections/Rehabilitation	Bismarck
Kathy Strombeck	Office of the State Tax Commissioner	Bismarck
Mariah Tenamoc	ND Department of Human Services	Bismarck
Kevin Thompson	North Dakota State University	Fargo
Judy Volk	ND Office of the Attorney General	Bismarck
Karin Walton	University of North Dakota	Grand Forks
Colleen Weltz	ND Office of the Attorney General	Bismarck
Don Wright	ND Department of Human Services	Bismarck
Francis Ziegler	ND Department of Transportation	Bismarck

Appendix C: Data Sources Used

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	1990-2006	Kathy Strombeck, ND OSTC	http://www.niaaa.nih.gov/Resources/DatabaseResources/QuickFacts/AlcoholSales/default.htm
American Indian Health Risk Data	Health risk information on ND American Indians	UND CHPPR	2004	Nancy Vogeltanz-Holm, Jeff Holm, UND CHPPR	http://www.med.und.nodak.edu/depts/chptr/
BRFSS	Annual state survey of adults ages 18+	CDC; ND DoH	1998-2007	Dr. Stephen Pickard, Melissa Parsons, Clint Boots, ND DoH	http://www.cdc.gov/brfss/index.htm
Cancer Mortality	Cancer mortality rates, ND vs. US	National Cancer Institute	1990-2004	Joyce Sayler, ND DoH	http://statecancerprofiles.cancer.gov/index.html
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	http://www.ndkidscount.org/
CORE Survey	Survey conducted periodically with ND college students	ND HECSAP	1994, 2003-5, 2006	Karin Walton, ND HECSAP	http://www.und.edu/org/ndhec/ http://www.siu.edu/~coreinst/
Domestic Violence	Domestic violence statistics for ND	ND OAG	1998-2001	Colleen Weltz, ND OAG, BCI	http://www.ag.state.nd.us/Reports/BCIReports/Domvio2001.pdf
MVC Fatality Rate	Motor vehicle crash fatality rate per 100,000	US DOT; FARS	1995-2007	Lynn Heinert, ND DOT	http://www.dot.nd.gov/
MVCs	Number of annually reported ND MVCs with alcohol involvement	ND DOT; FARS	2001-2007	Lynn Heinert, ND DOT	http://www.dot.nd.gov/ *http://www-fars.nhtsa.dot.gov/*
National Survey on Drug Use and Health	Data on substance use among persons aged 12+	SAMHSA	2007	Don Wright, Mariah Tenamoc, ND DHS	http://oas.samhsa.gov/
ND Criminal	Number of offenses	ND OAG, BCI	1998-	Colleen Weltz, ND OAG,	http://www.ag.state.nd.us/

Offender and Crime Reporting	and reported crimes in ND		2007	BCI	*http://www.ag.state.nd.us/Reports/BCIReports/CrimeHomicide/Crime05.pdf*

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	1998-2007	Michael Froemke, Patrick Foley, NDDOCR	http://www.state.nd.us/docr/
PRAMS	Health risk data on pregnant women	CDC	2002	Devaiah Muccatira, ND DHS, DoH	http://www.cdc.gov/prams/
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	http://www.cdc.gov/tobacco/research_data/economics/mm5425_intro.htm.
TEDS		SAMHSA	2007	Mariah Tenomac, Sue Tohm, ND DHS	http://www.dasis.samhsa.gov/web/t/New Mapv1.htm
Vital Statistics, ND vs. US	Substance-related mortality incidence and rates	ND DVR; NCHS	2007	Carmell Barth, ND DoH, DVR	http://wonder.cdc.gov/
YRBS	State survey conducted every 2 years among students in grades 9-12	CDC; ND DPI	1995-2007	Elizabeth Miller, ND DPI	http://apps.nccd.cdc.gov/YRBS/SelHealthTopic.asp?Loc=ND

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

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

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_wonder, NDVR	U
Suicides/100,000 population using ICD-10 codes X60-X84, Y87	3	CDC_wonder NDVR	U
The rate (per 100,000) of suicide deaths among youths aged 15 – 19	3	CDC_wonder	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_wonder 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_wonder 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_wonder	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	U

		DOT	
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_wonder NDVR	U
Chronic lower respiratory diseases per 100,000 population	3	CDC_wonder, NDVR	U
Cardiovascular deaths per 100,000 population	3	CDC_wonder, 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_wonder 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

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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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