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 (SAMHSA, 2011; BRFSS, 2011; NIAAA, 2011). 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, 36.5 percent consumed alcohol in the past 30 days and 26.4 percent engaged in binge alcohol use in the past 30 days (SAMHSA, 2011). These figures rank North Dakota #2 (i.e., second-highest) and #1 on these indicators among all 50 states for this age cohort. Regionally, persons in the eastern portion of the state had the highest prevalence of recent alcohol use and recent binge alcohol use (SAMHSA, 2011). 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 (SAMHSA, 2011). 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 (SAMHSA, 2011). 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, 2011). Among DUI arrests in the state, persons aged 21-24 are the most frequent offenders, followed by those aged 25-29, and 30-34 years; DUI arrests for these three age cohorts increased from 2010 to 2011 by 5, 5, and 29 percent, respectively (ND Office of the Attorney General, 2012).

North Dakota adults and children smoke cigarettes at rates that are comparable to the U.S. Smoking prevalence in North Dakota has steadily decreased over time. However, the state's American Indian adults smoke cigarettes at twice the prevalence of white adults (48.4 percent vs. 19.2 percent; BRFSS, 1999-2008). Smokeless tobacco use in North Dakota is notably higher than the U.S. for high school students (YRBS, 2011). Regarding recent use of any tobacco product, North Dakota youth and young adults' (ages 12-25) prevalence is higher than the U.S. prevalence. Relative to other states, North Dakota has a low prevalence of persons perceiving great risk associated with cigarette smoking (SAMHSA, 2011).

Associated with illicit drug use, arrests in North Dakota have increased by 13.8 percent from 2,339 in 2010 to 2,662 in 2011. In the past decade, 87 percent of drug arrests were for possession (versus sale or manufacture) and about two-thirds (69%) of drug arrests involved marijuana (ND OAG, 2012). Methamphetamines are also a problem in North Dakota, but to a lesser extent. In recent years, meth lab incidents have been drastically reduced (236 in 2004 to 8 in 2011).

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 is a vastly rural and frontier state with a relatively small population. The state’s population density is 9.7 people per square mile; comparatively, the national density is 87.4 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. North Dakota’s total population increased from 642,200 in 2000 to 672,591 in 2010 (U.S. Census, 2010). Of the 2010 total population, 347,173 persons resided in rural areas and 325,418 (51.6%) persons resided in urban areas (USDA-ERS, 2012). Regarding racial composition, 90.0 percent of the state’s population were white, 5.4 percent were American Indian/Alaska Native, 1.2 percent were African American, and 3.4 percent were some other race. North Dakota is aging, as reflected by the increase in the state’s median age from 36.2 years in 2000 to 37.0 years in 2010. By comparison, the 2010 U.S. median age was 37.2 years (U.S. Census, 2010).

Regarding health care, there are 42 hospitals in North Dakota, 39 of which are located in rural areas (UND Center for Rural Health, 2012). There are 57 Rural Health Clinics and four Federally Qualified Health Centers that provide services at 19 sites in the state (Kaiser Family Foundation, 2012). Most North Dakotans have some form of health insurance coverage, although 12 percent of its residents lack any health insurance (Kaiser Family Foundation, 2012).

According to the Economic Research Service (2012), the average per-capita income for all North Dakotans in 2009 was $40,802; rural North Dakota per-capita income was $41,649 and in urban North Dakota the per capita income was $39,916. Estimates for 2010 indicate a poverty rate of 12.5 percent for the entire state,12.9 percent for rural areas in North Dakota and 12.0 percent for urban areas in North Dakota. Data for 2006-2010 that indicate 10.6 percent of North Dakotans aged 25 years or older did not complete high school. By geography, 13.3 percent of rural state residents and 7.4 percent of urban state residents did not finish high school (USDA-ERS, 2012). The 2010 unemployment rate in rural North Dakota is at 4.0 percent, while in urban North Dakota it is at 3.9 percent (USDA-ERS, 2012).

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 30-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 notable gaps in North Dakota substance consumption and consequence data, 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) and the University of Wyoming (Evaluation; Laramie, WY). 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 meets quarterly. The principal functions of the committee are 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) Epidemiological Profile.

In creating the first North Dakota Epi Profile report in 2006, 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.
- 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) principal crime
- NDDOCR substance abuse treatment
- National Institute on Alcohol Abuse and Alcoholism (NIAAA)
- North Dakota Kids Count
- North Dakota Council on Abused Women's Services
- Community Readiness Survey
- Adult Tobacco Survey
- Youth Tobacco Survey. (See detailed list in **Appendix C**)

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. Aside from the drawbacks to voluntary survey data, the BRFSS and YRBS are carefully weighted by the Centers for Disease Control and Prevention to be reflective of and generalizable to their respective study populations and are considered by many to be highly useful for increasing understanding of health related issues for adults and school-aged children in the United States.

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 D**.

After consumption/consequence items were prioritized, data were collected and presented to the workgroup graphically in Microsoft PowerPoint slide format at the 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 2012.

Alcohol Consumption in North Dakota

Alcohol is the most commonly used substance in the United States (Hughes et al., 2009). Annually, approximately 79,000 deaths in the U.S. are attributed to alcohol misuse (CDC, 2008), making it the third most common 'actual' cause of death in the U.S. behind tobacco and physical inactivity/poor diet (Mokdad et al., 2004). Also, alcohol abuse is attributable to 2.3 million years of potential life lost each year, or about 30 years of potential life lost for each death (CDC, 2011). In the United States, children and adolescents are more likely to drink alcohol than smoke tobacco or use illicit drugs (YRBS, 2011). Excessive alcohol consumption leads to many adverse health and social consequences and results in approximately 5,000 deaths among underage youth each year (NIAAA, 2006). Alcohol use among children decreases concentration, attention, and memory retention, which all affect academic achievement. It also impedes the healthy development of social, emotional, and physical skills which children need to develop self-confidence and self-esteem. Also, children who drink are at increased risk for a number of health and safety problems including traffic crashes and other unintentional injuries; alcohol/drug abuse and dependence; early sexual activity and pregnancy; changes in brain development; disruption of normal growth and sexual development; poor school performance and absenteeism; juvenile delinquency; stress, anxiety, depression, and suicide; unwanted and unprotected sexual activity; cirrhosis, hypertension, and cancer; and homicides and other violent crimes (Wright, 2002; CDC, 2006).

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

AGE STARTED DRINKING

The earlier 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 high school respondents who had their first drink before the age of 13 years. North Dakota's overall rate (16.7 percent) in 2011 was lower than the national rate (20.5 percent in 2011). From 1995 to 2011, the state's rate of early drinking has steadily declined over time, with males consistently being more likely than females to drink before age 13 (YRBS, 2011).

The CORE Alcohol and Drug Survey of North Dakota college students asked respondents when they first consumed alcohol. Results of the first CORE survey from 1994 were compared to results from surveys conducted in 2003-2005, 2006 and 2008. The majority (51-56 percent) of the respondents across all years indicated they had tried alcohol between the ages of 14 and 17 years. In comparing results from these survey periods, the main finding was that 2003-2005 respondents reported they were slightly younger than the 1994 respondents when they first tried alcohol (Walton, 2005; NDCORE, 2007; 2009). Results from the most recent North Dakota CORE data (2010) are consistent with findings from previous years: 49.5 percent of college student respondents first tried alcohol between the ages of 14 and 17 years (ND University System, 2011).

DRINKING ON SCHOOL PROPERTY

One of the YRBS's measures of alcohol consumption is the use of alcohol on high school property. North Dakota high school students (grades 9-12) who engage in this drinking behavior run the risk of school suspension, expulsion, and misdemeanor charges. Among North Dakota's high school students, 3.1 percent said they had consumed alcohol on school property on one or more occasions in 2011. This figure is lower than the 2011 U.S. figure of 5.1 percent. During the period 1995-2011, North Dakota's figure has steadily declined over time from a high of 8.6 percent in 1995. North Dakota boys were more likely than girls to drink on school property (YRBS, 2011).

ALCOHOL USE BY RACE

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

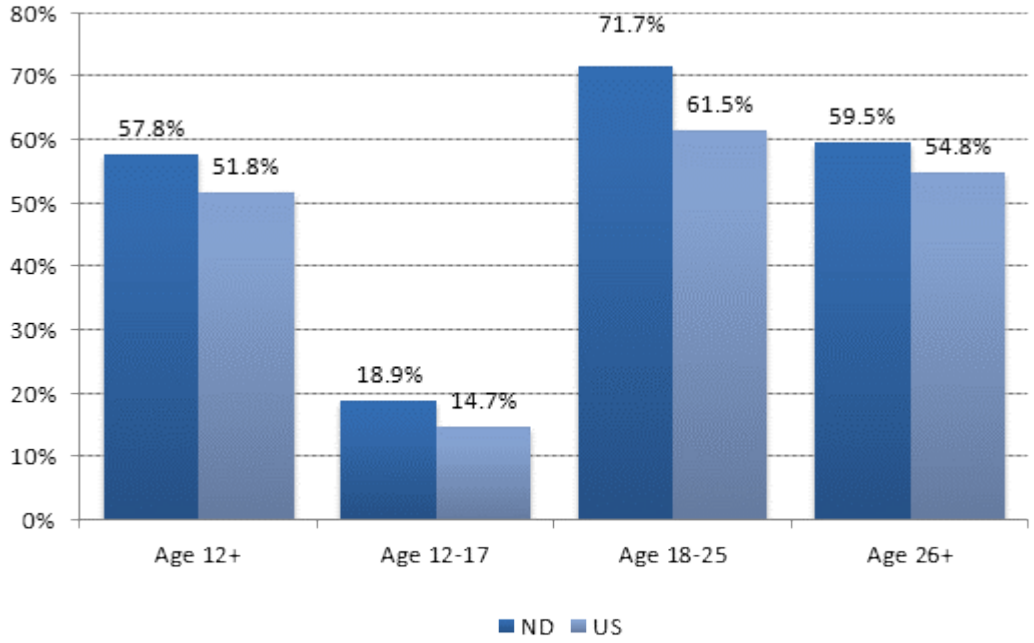
Another analysis of alcohol use by race was conducted using North Dakota's BRFSS combined data for years 1999-2008. Results indicated that, compared to Whites, American Indians were less likely to have recently consumed alcohol (52.2 percent vs. 64.7 percent), more likely to have recently binged alcohol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

RECENT ALCOHOL USE

According to the YRBS, 38.8 percent of North Dakota high school students (grades 9-12) in 2011 took one or more drinks of alcohol in the past month, a figure that is similar to the 2011 national prevalence rate of 38.7 percent. North Dakota's 2011 rate is 22 percentage points below the state's 1995 rate when 60.7 percent of students had recently consumed alcohol. Since 2005, boys in North Dakota were more likely than girls to have consumed alcohol in the past month for years 2005 and 2009 and girls in were more likely than boys to have consumed alcohol in the past month for years 2007 and 2011. The rates for both girls and boys have declined steadily over time (YRBS, 2011).

The National Survey of Drug Use and Health (SAMHSA, 2011) found that 57.8 percent of North Dakotans aged 12 and older had one or more drinks of alcohol in the past month **(Figure 1)**.

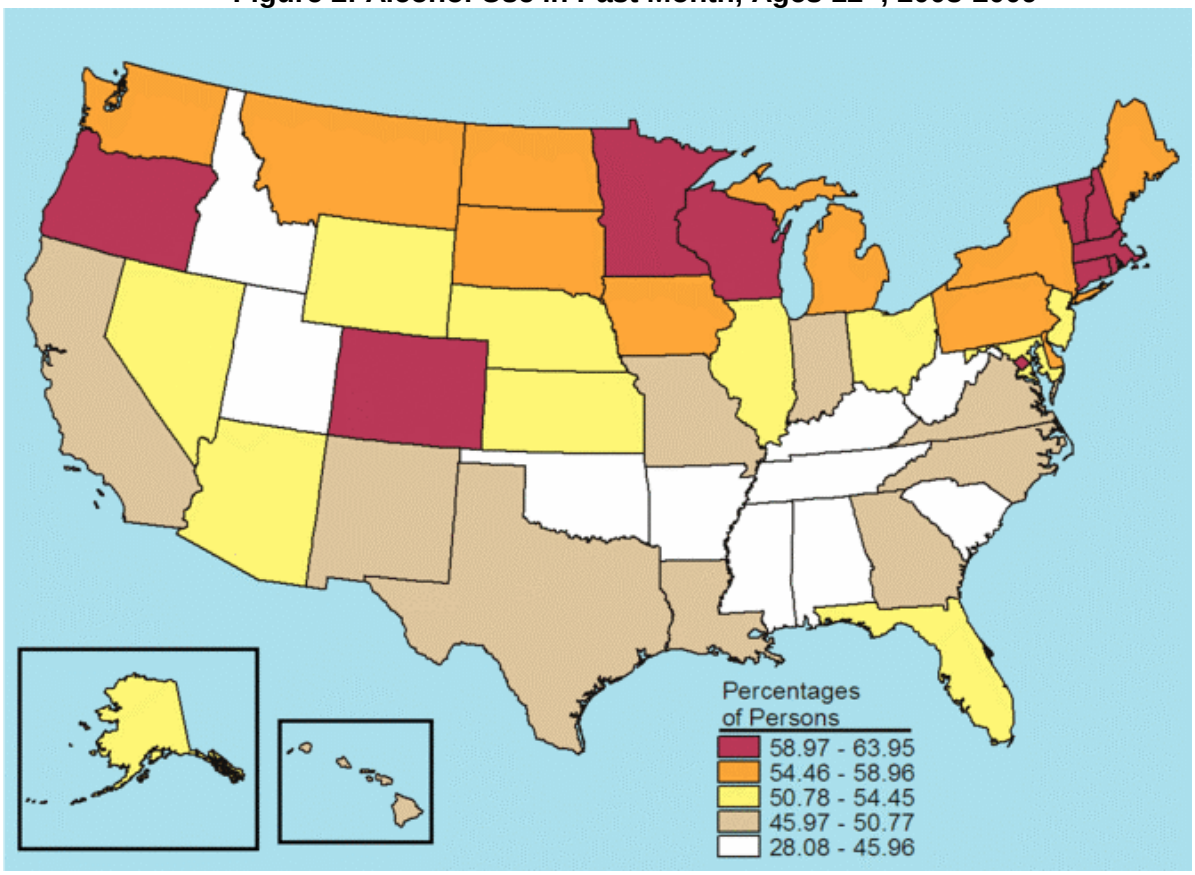
Figure 1: Alcohol Use in Past Month, North Dakota and United States, by Age, 2008-2009



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2008 and 2009

This is substantially higher than the U.S. rate of 51.8 percent. North Dakota's 'recent alcohol usage' prevalence for persons aged 12 and older puts it in the second-highest quintile grouping of all states for this drinking behavior **(Figure 2;** SAMHSA, 2011**)**. SAMHSA (2011) produced estimates for 5 distinct regions in North Dakota using combined 2006-2008 NSDUH data; regional results for persons aged 12 years or older indicated the Southeast Region (comprised of six counties and includes Fargo) had the highest prevalence of alcohol use in the past month (67.5 percent). Among persons aged 12 to 20 years, the Southeast and Northeast (a 4-county area that includes Grand Forks) Regions had the highest prevalence of recent alcohol use (44.4 and 43.1 percent; SAMHSA, 2011).

Figure 2: Alcohol Use in Past Month, Ages 12+, 2008-2009



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2008 and 2009

Among North Dakotans aged 12-17 years, slightly less than one-fifth (18.9 percent) used alcohol in the past month **(Figure 1)**. This figure reflects a decrease from 21.0 percent for 2006-2007. Nationally, 14.7 percent of this age cohort indicated they had used alcohol within the past month in 2008-2009. North Dakota is in the top 20 percent of all states for using alcohol in the past month among ages 12-17 (SAMHSA, 2011).

Among persons aged 12-20 years, North Dakota (36.5 percent) is ranked number two nationally behind Vermont in alcohol use in the past month. Among our neighboring states, South Dakota (32.2 percent) and Montana (34.5 percent) are on the top-ten list of highest percentages. Utah (14.2 percent) had the lowest rate of recent alcohol use among persons aged 12-20 (SAMHSA, 2011). The NSDUH (SAMHSA, 2011) reported that North Dakotans aged 18-25 years were most likely (71.7 percent) of any age cohort to have used alcohol during the past month, which is far higher than the national rate of 61.5 percent. North Dakota's prevalence, declining from 75.7 percent from the 2006-2007 NSDUH survey period, remains in the top 20 percent of all U.S. states for recent alcohol use among persons 18-25 years. About two-thirds (59.5 percent) of North Dakotans aged 26 years and older had used alcohol in the past month in 2008-2009, down from 62.2 percent in 2006-2007 (Hughes et al., 2009). The national estimate was substantially lower at 54.8 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. The Midwestern states of Minnesota and Wisconsin were in the highest ranked grouping for recent alcohol use among ages 26 and older (SAMHSA, 2011).

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, 58.5 percent indicated using alcohol in the past month in 2010 **(Table 1)**.

Table 1: Percent of Recent, Heavy, and Binge Alcohol Use Among Adults Ages 18+, North Dakota and the United States, 2005-2010

		Recent		Heavy		Binge	
		ND	US	ND	US	ND	US
2010	Overall	58.5	54.6	4.1	5.0	18.7	15.1
	Male	63.9	61.7	5.1	5.4	24.1	20.2
	Female	46.8	47.6	3.2	4.5	13.4	10.4
2009	Overall	60.5	54.4	5.1	5.1	21.4	15.8
	Male	66.3	62.0	6.5	5.8	27.4	21.3
	Female	54.7	46.9	3.8	4.2	15.5	10.6
2008	Overall	57.8	54.5	5.1	5.1	21.6	15.6
	Male	65.1	61.3	5.6	5.6	29.2	21.0
	Female	50.6	47.7	4.4	4.4	14.1	10.0
2007	Overall	62.0	55.8	5.0	5.2	23.2	15.8
	Male	68.9	62.0	6.1	6.1	30.2	21.2
	Female	55.3	47.9	3.9	4.0	16.5	10.1
2006	Overall	59.0	55.4	4.4	4.9	21.2	15.4
	Male	65.8	62.1	5.0	5.6	28.8	20.4
	Female	52.5	49.0	3.9	4.4	13.9	10.1
2005	Overall	59.6	56.2	5.0	4.9	18.9	14.4
	Male	67.6	63.5	6.5	5.6	27.7	22.0
	Female	51.6	49.0	3.5	4.0	10.2	7.4

Source: BRFSS, 2005-2010

North Dakota's prevalence is higher than the U.S. prevalence of 54.6 percent for the same year, but has remained relatively stable over the past five 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 58.5 percent placed it in the second-highest group, along with neighboring states Minnesota, South Dakota, and Montana (BRFSS, 2011).

In 2010, about two-thirds (63.9 percent) of adult males and slightly less than one-half (46.8 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 67.6 percent in 2005 to 63.9 percent in 2010. For women, recent alcohol use declined from 51.6 percent in 2005 to 46.8 percent in 2010 (BRFSS, 2011).

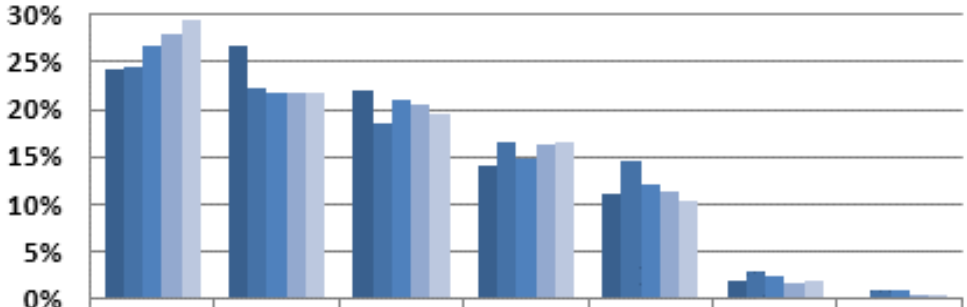
The percent of recent alcohol use among North Dakota men was higher than the US percent for males for each year from 2005 to 2010 **(Table 1)**. Similarly, women in North Dakota were consistently more likely than their U.S. female counterparts to have consumed alcohol in the past month, with the exception of 2010 **(Table 1)** (BRFSS, 2011).

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 (401.1percent) to have recently consumed alcohol. Persons aged 25 through 44 were most likely (69-70 percent) to have consumed alcohol in the past month. Beginning at age 55, the prevalence rate of recent alcohol use began to decline (BRFSS, 2011).

The percent of North Dakotans' recent alcohol use increases incrementally with a corresponding rise in annual income level **(Table 2)**. Seventy-one percent of the wealthiest (i.e., earning $50,000 or more per year) and 35.2 percent of the poorest (i.e., earning less than $15,000 per year) group indicated they had used alcohol in the past month. Compared to the U.S., North Dakotans had higher rates of recent alcohol use across all income levels (BRFSS, 2011).

The North Dakota CORE Alcohol and Drug Survey queried North Dakota college students about the 30-day frequency of alcohol consumption. CORE survey results were compared between the four time periods (1994, 2003-2005, 2006 and 2008) in which it was administered in North Dakota. Responses ranged from zero days in a month to everyday in a month. Compared to the 1994 findings, the major noted difference in 2003-2005 was a substantial increase in the percent of college students stating they drank six or more days per month (27.1 percent versus 34.8 percent). However, 2006 and 2008 figures reflected a decrease to 30.5 percent and 29.8 percent, respectively. Other recent decreases in alcohol use were noted. For drinking 6-9 days a month, rates dropped from 16.6 percent in 2003-2005 to 14.9 percent and 16.4 percent in 2006 and 2008. For those drinking 10-19 days a month, rates decreased from 14.5 percent in 2003-2005 to 12.2 percent in 2006 to 11.4 percent in 2008 (**Figure 3**; Walton, 2005; NDCORE, 2009). Results from the 2010 ND CORE survey for 30-day alcohol use frequency were highly similar to the 2008, with the exception of a slight increase in abstainers and slight decrease in persons indicating alcohol use during 10-19 of the past 30 days (ND University System, 2011).

Figure 3. 30-Day Frequency of Alcohol Use, North Dakota College Students, 1994-2010



	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%
2008	28.0%	21.7%	20.5%	16.4%	11.4%	1.7%	0.3%
2010	29.5%	21.8%	19.6%	16.5%	10.3%	1.8%	0.5%

Source: ND CORE Survey

The North Dakota CORE survey asked college student students about their annual drinking behavior. Results from 1994 were compared to 2003-2005, 2006 and 2008. Over this time period, the most significant finding was an increase in the percent of students stating they drank at higher frequencies of occurrence. The percent of students who drank alcohol one or more times each

week in the past year increased from 38.3 percent in 1994 to 48.1 percent in 2003-2005 (Walton, 2005). This figure declined slightly to 46.5 percent in 2006 to 44.1 percent in 2008 (NDCORE, 2007; 2009). This pattern of modest decline was continued in the 2010 ND CORE survey as 43.0 percent of college student respondents indicating consuming alcohol at least once a week throughout the past year (ND University System, 2011).

HEAVY ALCOHOL USE

The BRFSS defines "heavy alcohol use" as consuming more than one alcoholic beverage a day for women and more than two alcoholic beverages per day for men. Among North Dakota adults, 4.1 percent were classified as heavy drinkers in 2010. This rate has declined over time from a high of 5.8 percent in 2003. The state's rate of heavy alcohol use was roughly equivalent to the U.S. rate in 2005 and 2007-2009, but was below the U.S. rate in 2006 and 2010 (BRFSS, 2011). Since 2009, heavy drinking prevalence slightly declined among North Dakota men women (**Table 1**; BRFSS, 2011).

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 2010 figure of 4.1 percent was 38th highest among U.S. states and DC. Among neighboring states, North Dakota's prevalence was higher than the prevalence for South Dakota, Minnesota, and Montana. In North Dakota, men (5.1%) were more likely than women (3.2%) to be heavy alcohol users **(Table 1)**.

North Dakota men's heavy drinking prevalence was lower than for U.S. men in 2010 **(Table 1;** BRFSS, 2011**)**. 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 periods 2005-2007 and 2009-2010 but was identical in 2008 **(Table 1)**. North Dakotans 35-44 years (6.1 percent) were most likely to be heavy consumers of alcohol in 2010 **(Table 2)**. Heavy use tends to decline with age, as only 2.0 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 25-44 years and lower or equivalent rates for all other age groups. Lower-earning (i.e., less than $15,000 per year) North Dakotans were most likely (7.1 percent) to drink heavily and those earning $15,000 to $24,999 were least likely (2-3 percent) to drink heavily **(Table 2)**. Compared to the U.S., North Dakotans had higher prevalence among the poorest income category and lower prevalence among all other income categories (BRFSS, 2011).

The North Dakota CORE Alcohol and Drug Survey asked North Dakota's colleges students about the average number of alcoholic beverages they consume per week. Results were compared between the three time periods (1994, 2003-2005, 2006 and 2008) in which it was administered in the state. Compared to 1994, students in 2003-2005 were more likely to report consuming alcohol in higher quantities. Specifically, 40.4 percent in 2003-2005 reported having six or more alcoholic beverages per week as compared to 23.5 percent in 1994 (Walton, 2005). In 2008, this figure dropped to 30.0 percent (NDCORE, 2007; 2009). Another decline in this prevalence was noted in 2010 as 26.8 percent of North Dakota college respondents indicated consuming an average of six or more alcoholic beverages per week (ND University System, 2011).

Table 2: Percent of Recent, Heavy, and Binge Alcohol Use Among Adults Ages 18+, by Gender, Age, and Income, North Dakota and United States, 2010

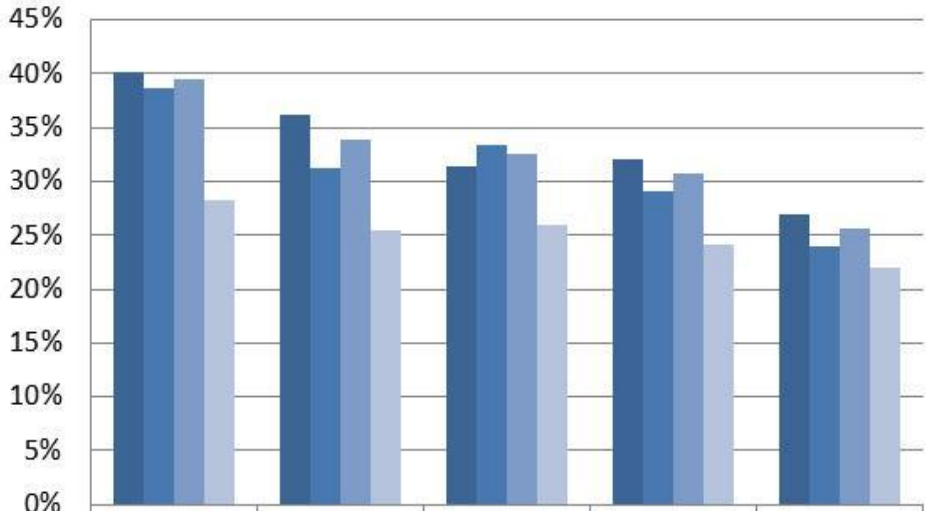
	Recent		Heavy		Binge	
	ND	US	ND	US	ND	US
Overall	58.5	54.6	4.1	5.0	18.7	15.1
Gender						
Male	63.9	61.7	5.1	5.4	24.1	20.2
Female	53.2	47.6	3.2	4.5	13.4	10.4
Age						
18-24	51.3	48.3	3.1	5.2	22.1	22.1
25-34	66.8	61.0	5.3	4.9	30.3	22.6
35-44	70.4	60.2	6.1	4.9	24.8	19.1
45-54	66.3	57.7	4.8	5.6	19.8	14.9
55-64	58.8	53.6	4.0	4.9	14.6	9.5
65+	41.1	40.5	2.0	3.0	3.7	3.4
Income (thousand)						
<$15	35.2	32.1	7.1	4.0	15.0	10.9
$15-24	46.3	38.8	1.8	4.4	13.3	12.3
$25-34	52.4	47.2	3.0	4.5	15.7	13.4
$35-49	56.4	52.3	4.3	4.6	17.8	14.2
$50+	70.9	68.4	5.5	5.8	24.7	18.1

Source: BRFSS.

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-quarter (25.6 percent) of North Dakota high school students (grades 9-12) were binge drinkers in 2011; comparatively, about one-fifth (21.9 percent) of U.S. high school students in 2011 had engaged in binge alcohol use one or more times in the past month **(Figure 4;** YRBS, 2011**)**. North Dakota's high school binge drinking rate has steadily declined over time from its ten-year high of 41.5 percent in 2001. Although boys were more likely than girls to engage in this drinking behavior, prevalence has continually declined among both genders (YRBS, 2011).

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

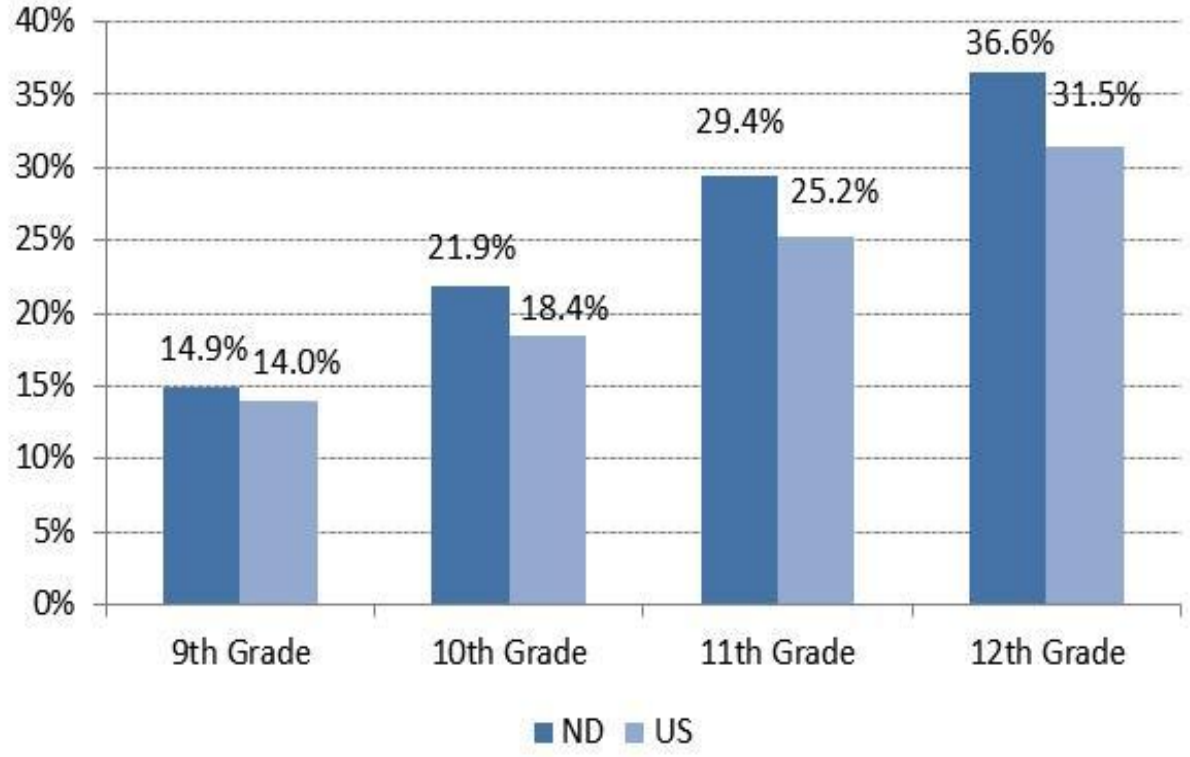


	2003	2005	2007	2009	2011
ND Male	40.1%	36.2%	31.4%	32.1%	26.9%
ND Female	38.7%	31.2%	33.4%	29.1%	24.0%
ND Total	39.5%	33.8%	32.5%	30.7%	25.6%
US Total	28.3%	25.5%	26.0%	24.2%	21.9%

Source: YRBS.

As North Dakota students (grades 9-12) advanced to higher grades, they were more likely to have engaged in binge alcohol use **(Figure 5)**. North Dakota's recent binge drinking prevalence was higher than the U.S. prevalence rate for each grade in 2011. From 2009 to 2011, North Dakota's recent binge drinking prevalence decreased among all grades (YRBS, 2011).

Figure 5: Binge Alcohol Use by Grade, North Dakota and United States, 2011, Students Grades 9-12

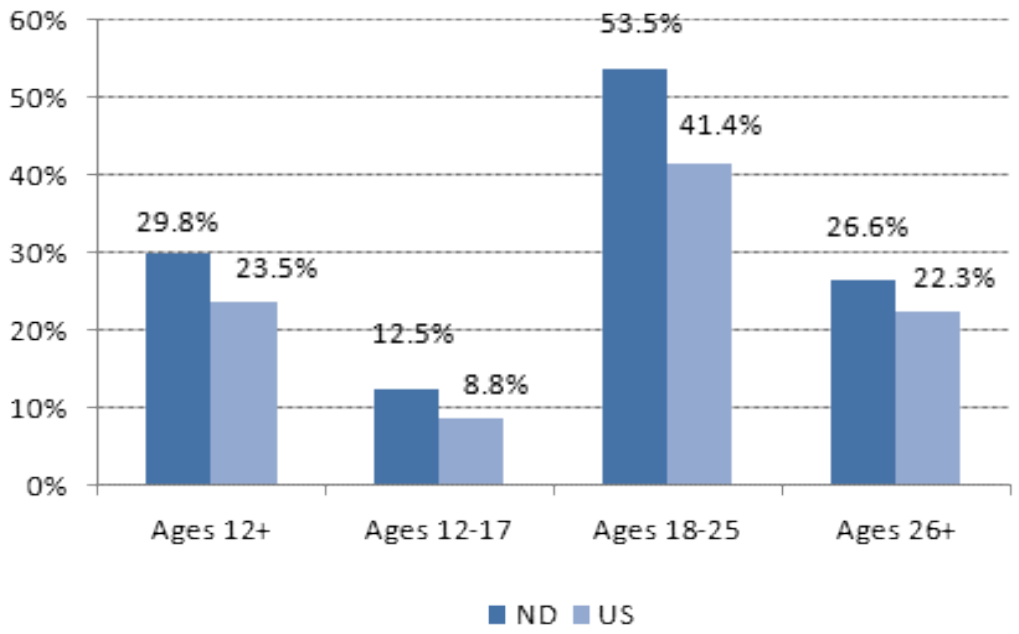


Source: Youth Risk Behavioral Surveillance Survey
*5+ drinks of alcohol in a row on 1+ of the past 30 days

The NSDUH (SAMHSA, 2011) estimated that one-third (29.8 percent) of North Dakotans aged 12 years and older had binged alcohol on one or more of the past 30 days in 2008-2009 **(Figure 6)**. This figure, while substantially higher than the national prevalence of 23.5 percent, represents a large improvement from its 2007-2008 figure of 32.6 percent. Among U.S. states, North Dakota ranked number one in binge drinking among persons aged 12 years and older. North Dakota's neighboring states of Minnesota and South Dakota were in the top 10 of alcohol binging states for this age group, suggesting this drinking behavior is a regional phenomenon (SAMHSA, 2011).

Among persons aged 12 to 17 years, 12.5 percent of North Dakotans and 8.8 percent of U.S. residents indicated binge drinking in the survey years of 2008 and 2009 **(Figure 6)**. Compared to the previous NSDUH survey period, binge drinking prevalence in North Dakota was about the same (i.e., 12.3 percent) for this age cohort. North Dakota, along with other upper Midwestern states, was in the top 10 percent of U.S. states for binge drinkers aged 12 to 17 years (SAMHSA, 2011). Among persons aged 18 to 25 years, 53.5 percent of North Dakotans (down from 58.1 percent in 2006-2007) and 41.4 percent of U.S. residents indicated they had engaged in binge drinking on one or more of the past 30 days in 2008-2009. Compared to all U.S. states, North Dakota ranked at the top for binge drinking among ages 18-25 years.

Figure 6: Binge Alcohol Use in Past Month, North Dakota and United States, by Age Group, 2008-2009



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2008 and 2009. 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.

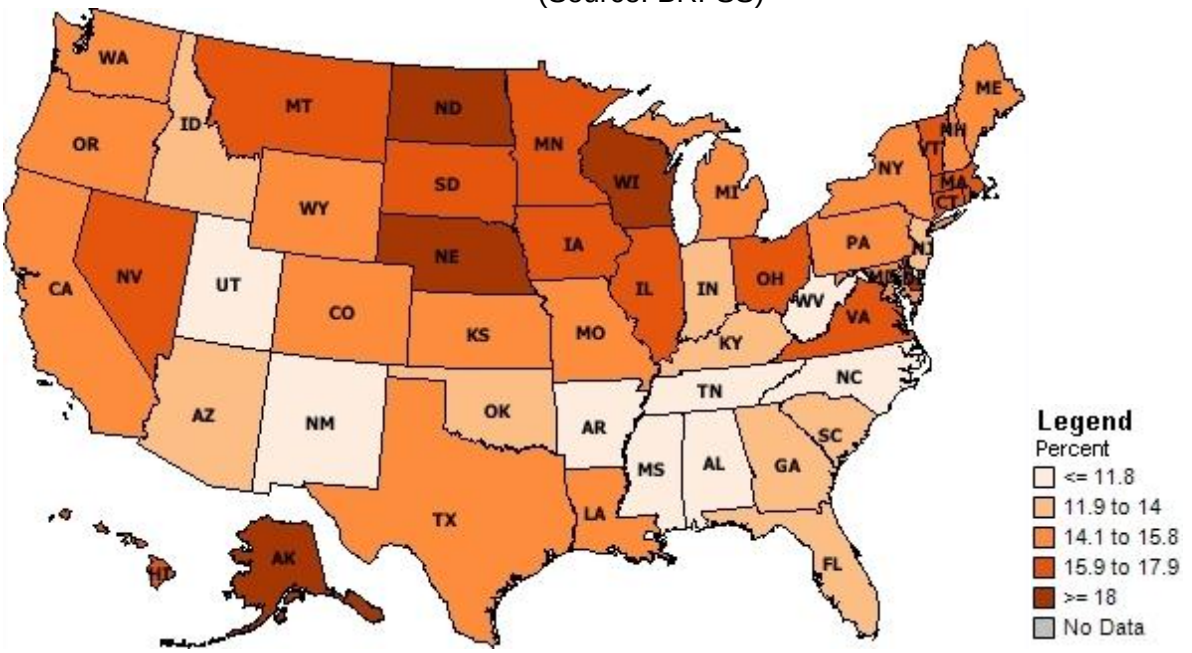
According to the NSDUH (SAMHSA, 2011), 26.6 percent of North Dakotans aged 26 years or older engaged in binge drinking on one or more of the past 30 days. Comparatively, 22.3 percent of similarly-aged U.S. residents binged alcohol within this time (**Figure 6**). North Dakota's binge drinking prevalence placed it in the highest ranked grouping among U.S. states for persons aged 26 years and older (SAMHSA, 2011). For persons aged 12 to 20 years, North Dakota has the highest recent binge alcohol use prevalence (26.4 percent) among all 50 states (SAMHSA, 2011). Comparatively lower binge prevalence was noted among the neighboring states of Minnesota (19.6 percent), Montana (24.4 percent) and South Dakota (22.8 percent).Utah (11.5 percent) had the lowest binge prevalence among all states for ages 12 to 20 years.

SAMHSA (2011) produced estimates for 5 distinct regions in North Dakota using combined 2006-2008 NSDUH data; regional results indicated the Southeast Region (comprised of six counties and includes Fargo) had the highest prevalence of binge alcohol use in the past month (35.5 percent). Among persons aged 12 to 20 years, the Northeast (a 4-county area that includes Grand Forks) the Southeast Regions had the highest prevalence of recent alcohol use (33.8 and 31.7 percent; SAMHSA, 2011).

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, although very high compared to national average and other states, was relatively stable from 2006 to 2009 ranging from 21.2 to 23.2 percent. In 2010, North Dakota's adult alcohol binge prevalence dropped to 18.7 percent, which was fifth highest among all 50 states behind Wisconsin, Alaska, Vermont, and Delaware (BRFSS, 2011) **(Figure 7)**.

North Dakota men were two times more likely than women to engage in binge drinking behavior **(Table 1)**. Binging among men was relatively stable from 2006 through 2009 ranging from 27.4 to 30.2 percent, but then decreased to 24.1 percent in 2010. For women, binge alcohol use remained stable from 2005-2010 at approximately 14 to 16 percent; their lowest binge prevalence within this time period was 13.4 in 2010 (BRFSS, 2011). A general increase in females' binge drinking prevalence starting in 2006 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 7. Recent Binge Alcohol Use, Ages 18+, 2010
(Source: BRFSS)



Over the past six years, binge alcohol use among North Dakota males has consistently been higher than the U.S. prevalence for similarly-aged men **(Table 1)**. Over this time period, the North Dakota males' rate has ranged from 24-30 percent, whereas the U.S. males' rate has ranged from 20-21 percent. The alcohol binge prevalence for North Dakota women, despite being substantially lower than North Dakota men's prevalence, was consistently higher than figures for U.S. women (**Table 1**). Typically, about 13-16 percent of North Dakota women and about 10 percent of U.S. women indicated they had engaged in recent binge alcohol use (BRFSS, 2011).

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-quarter to one-third of this cohort indicated engaging in this behavior in 2010 (**Table 2**). Compared to the U.S., North Dakotans were more likely to engage in binge alcohol use across all age groups except 18-24 year olds who had the same prevalence. North Dakotans earning $50,000 or more per year were most likely (24.7 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, 2011).

The North Dakota CORE survey assessed the extent of binge drinking (i.e., five or more alcoholic drinks at a sitting) among the state's college students. Results were compared between the four time periods (1994, 2003-2005, 2006 and 2008) in which the survey was administered. Compared to the 1994 figures, North Dakota college students in 2003-5 reported higher percentages of binge drinking behavior and higher percentages of repeated alcohol binging within the past two weeks. Over this time period, the rate of persons reporting one or more alcohol binges within the past two weeks increased from 44.1 percent to 54.8 percent. Also, the rate of persons reporting three or more alcohol binges in the past two weeks increased from 15.4 percent to 25.9 percent (Walton, 2005). These figures declined to 52.7 percent (2006) and 50.5 percent (2008) indicating one or more alcohol binge episodes and 23.5 percent (2006) and 20.0 percent (2008) indicating three or more alcohol binge episodes in the past two weeks (NDCORE, 2007; 2009). Further declines were noted among 2010 North Dakota CORE respondents for engaging in binge alcohol use one or more times (48.3 percent) and three or more times (18.1 percent) in the past two weeks (ND University System, 2011).

ATTITUDES TOWARD ALCOHOL USE

The National Survey of Drug Use and Health (SAMHSA, 2011) 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 22 to 53 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 U.S. states for the age groups of 12 years and older (35.0 percent), 12 to 17 years (34.3 percent), 18 to 25 years (25.2 percent), and 26 years and older (37.2 percent; SAMHSA, 2011).

In the North Dakota Community Readiness Survey (2008), community members and key informants from urban, rural, and frontier areas were asked to assess the magnitude of (a) adult and (b) youth use of alcohol in their own community. Regarding adult alcohol use, 23.2 percent of community members and 39.8 percent of key informants characterized it as a "serious problem" (Table 3). Regarding youth alcohol use, 41.3 percent of community members and 62.2 percent of key informants characterized it as a "serious problem" (Table 4). By geography, survey respondents from urban areas were more likely than respondents from rural or frontier areas to characterize adult and youth alcohol use in their communities as a serious problem (Hair et al., 2008).

Table 3. Perceptions of Alcohol Use among Adults in their North Dakota Community

Respondent type	Geographic Area	Minor/moderate problem (%)	Serious problem (%)
Community Members	Urban	64	27.7
	Rural	63.2	21.8
	Frontier	68.3	19.4
	Comm. Member Total	65.2	23.2
Key Informants	Urban	55.3	42.4
	Rural	57.8	39.8
	Frontier	67.5	30.7
	Key Informant Total	58	39.8
Overall Total		63.7	26.5

Source: Hair et al. (2008)

Table 4. Perceptions of Alcohol Use among Youth in their North Dakota Community

Respondent Type	Geographic area	Minor/moderate problem (%)	Serious problem (%)
Community Members	Urban	38.9	51.9
	Rural	46	36.4
	Frontier	51.6	34
	Comm. Member Total	45.3	41.3
Key Informants	Urban	32.6	64.6
	Rural	33.7	62.7
	Frontier	46.5	53.5
	Key Informant Total	35.4	62.2
Overall Total		43.3	45.5

Source: Hair et al. (2008)

In the North Dakota Community Readiness Survey (2008), community member respondents from urban, rural, and frontier areas were asked to indicate whether they agreed or disagreed to a series of statements regarding alcohol and drug use (Table 5). Results indicated that about two-thirds (68.4%) of respondents disagreed that drinking among teenagers was acceptable in their community. Statements with the highest percent of disagreement among respondents were: driving under the influence of drugs and/or alcohol is OK (97.7%); it is OK to ride in a motor vehicle with someone under the influence of drugs and/or alcohol (98.3%); and it is OK for parents to offer alcoholic beverages in their home to youth (other than their own) (98.4%). The most poignant difference in disagreement by geographic location was noted on the item relating to drinking among teenagers is acceptable in their community: about two-thirds of rural/frontier versus three-quarters of urban respondents disagreed that teenage drinking is acceptable in their communities.

Table 5. Permissiveness of North Dakota Community Members' Attitudes toward Alcohol and Drug Use

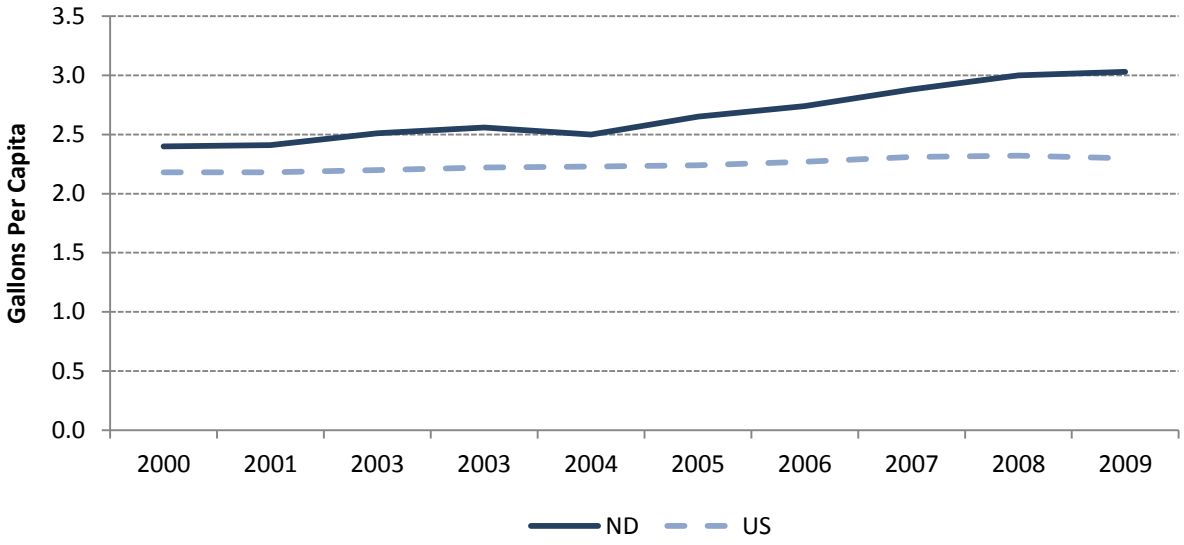
	% Disagree			
Item	Urban	Rural	Frontier	**TOTAL**
In my community, drinking among teenagers is acceptable.	73.6	63.6	67.2	**68.4**
It is OK for parents to offer their youth alcoholic beverages in their home.	88.4	89.2	89.3	**88.9**
Youth who experiment with alcohol or other drugs almost always grow out of it.	92.4	93.2	93.7	**93.1**
Youth should be able to drink as long as they don't drive afterwards.	96.1	95.6	93.9	**95.2**
It is OK for youth to drink at parties as long as they don't get drunk.	96.2	95.6	95.8	**95.9**
Driving under the influence of drugs and/or alcohol is OK.	97.9	98.6	96.7	**97.7**
It is OK to ride in a motor vehicle with someone under the influence of drugs and/or alcohol.	98.3	99.2	97.7	**98.3**
It is OK for parents to offer alcoholic beverages in their home to youth (other than their own).	99.0	98.6	97.6	**98.4**

Source: Hair et al. (2008).

ALCOHOL SALES

Alcohol sales are a well-known measure of alcohol consumption. In 2009, North Dakotans purchased and consumed 1.63 million gallons of ethanol. Alcohol purchases have steadily increased since 1994, when only 1.2 million gallons were purchased and consumed (NIAAA, 2011). By type of alcohol purchased, beer is the leading product in North Dakota with 873,000 ethanol gallons purchased in 2009. Beer gallons sold have also steadily increased over time as only 700,000 ethanol gallons were sold in 1993. Spirits are the second-leading alcohol consumption category, with 622,000 ethanol gallons being purchased in North Dakota in 2009. Lastly, wine totaled 132,000 ethanol gallons purchased in 2009. Compared to the U.S., North Dakotans purchase higher volumes of alcohol per person. In 2009, North Dakotans consumed 3.03 gallons per person (ages 14 or older), compared to 2.3 gallons per person for the U.S. **(Figure 8;** NIAAA, 2011**)**.

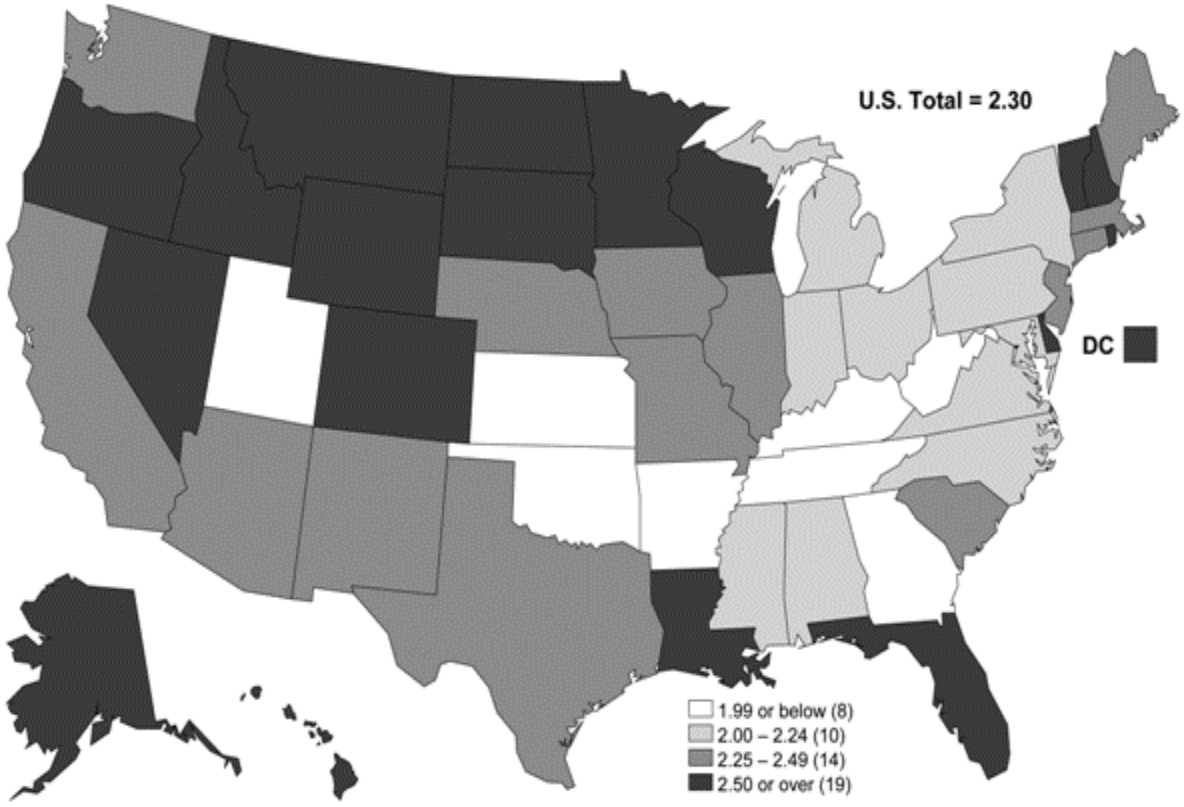
Figure 8. Per Capita Alcohol Consumption, North Dakota and United States, 2000-2009



Source: National Institute on Alcohol Abuse and Alcoholism (NIAAA)
*For population ages 14 and older.

North Dakota, along with several other Midwestern states, was in the highest U.S. state grouping for per capita ethanol consumption in 2009 (Figure 9; NIAAA, 2011).

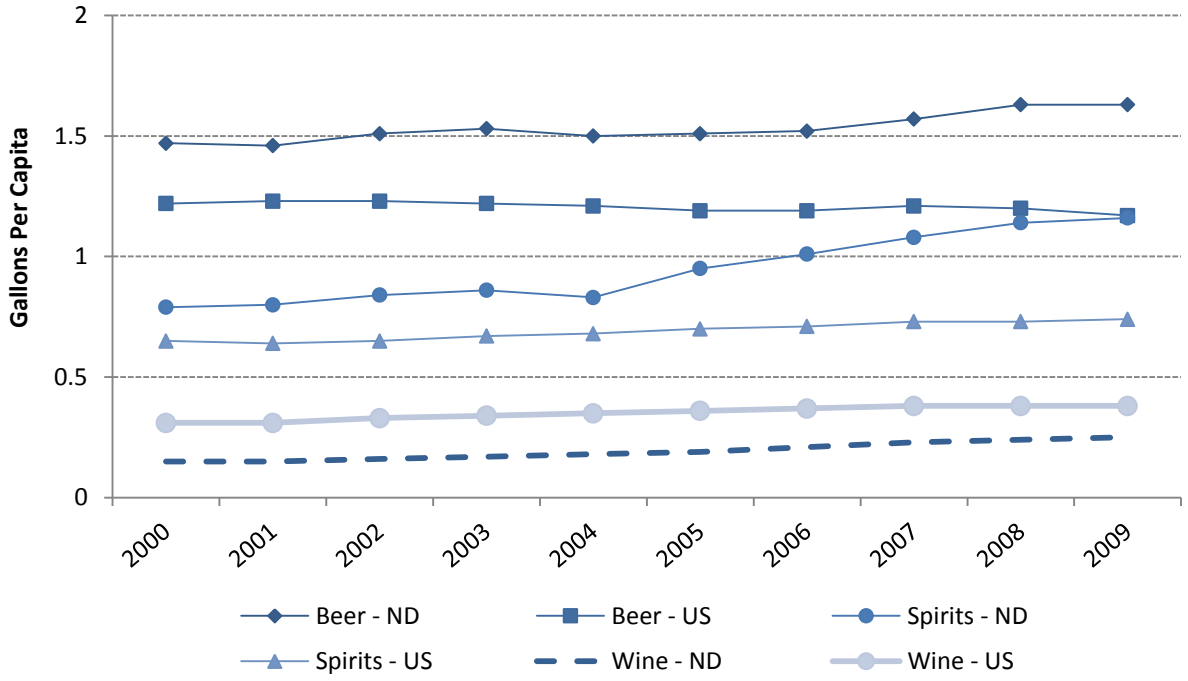
Figure 9. Total Per Capital Ethanol Consumption, U.S., 2009



Source: NIAAA, 2011.

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 10)**. In 2009, it was estimated that each North Dakotan aged 14 or older consumed an average of 1.63 gallons of beer ethanol, 1.16 gallons of spirits ethanol, and 0.25 gallons of wine ethanol (NIAAA, 2011).

Figure 10. Per Capita Alcohol Sales by Beverage Type, North Dakota



Source: National Institute on Alcohol Abuse and Alcoholism (NIAAA)
*For population aged 14 and older

Excise tax on alcohol sales can have several possible effects for the state and society including the following: raises much needed revenue for the state and dedicated causes (e.g., transportation); revenue totals can assist to monitor purchase/use volumes statewide and regionally; reduces consumption among residents including minors; reduces motor vehicle crashes and fatalities; and decreases incidence of crimes such as DUI, rape, assault, and robbery (Coate & Grossman, 1988; Ruhm, 1996; NIAAA, 2000). North Dakota's total alcohol tax revenues for the most recent years of available data indicate steady increases in purchases and use, and include the following: 2007: $337,022,154; 2008: $367,764,223; 2009: $364,231,604; 2010: $384,057,011; 2011: $423,751,636 (North Dakota Office of the State Tax Commissioner, 2012).

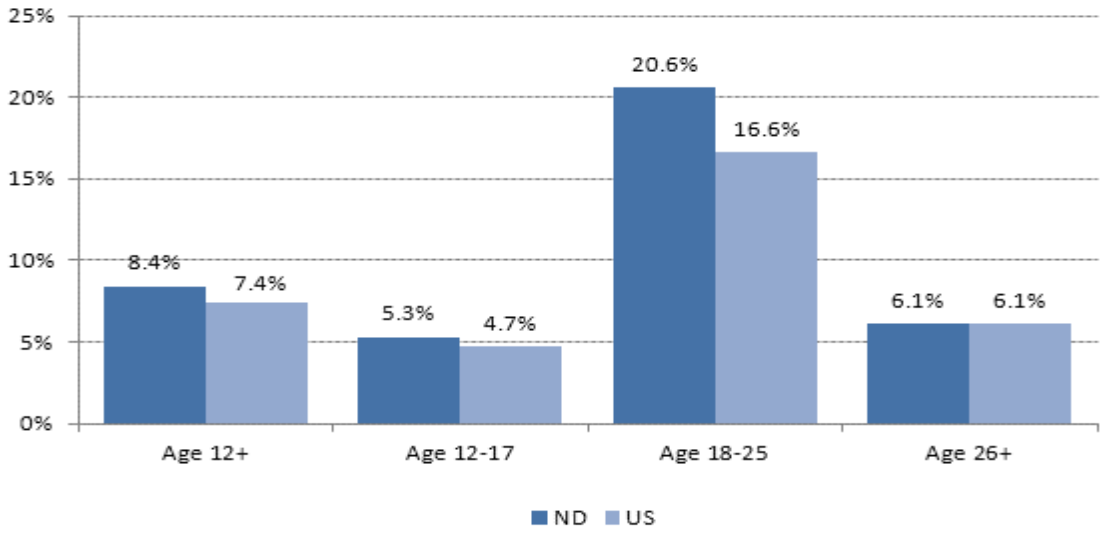
Alcohol Consequences in North Dakota

Alcohol consumption is associated with a variety of consequences, including high financial costs. In 2010, it was estimated that underage drinking cost North Dakotans $168 million (PIRE, 2011; Levy et al., 2003). Of this figure, $106 million was due to pain and suffering costs, $42 million was for work lost costs, and $20 million was for medical costs (PIRE, 2011; Levy et al., 2003). Violence and traffic crashes occupy the largest underage alcohol-related costs for North Dakotans.

ALCOHOL ABUSE OR DEPENDENCE IN THE PAST YEAR

The NSDUH (2008-2009) 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 SAMHSA (2011), North Dakotans were either dependent on or abused alcohol in the past year at the following rates by age cohort: 12 and older – 8.4 percent; 12-17 years – 5.3 percent; 18-25 years – 20.6 percent; and 26 years or older – 6.1 percent (**Figure 11**). North Dakota was in the top 20 percent of all U.S. states for alcohol dependence or abuse for ages 18-25. North Dakota was in the second-highest quintile grouping for persons aged 12 and older and 12-17 years; North Dakotans ages 26 and older occupied the third-highest grouping for alcohol dependence or abuse. Since the 2006-2007 NSDUH survey, decreases in annual alcohol dependence/abuse occurred in every age cohort of North Dakotans.

Figure 11: Alcohol Dependence or Abuse in Past Year, North Dakota and United States, by Age, 2008-2009



Source: SAMHSA, 2011.
*'Dependence' and 'abuse' defined by the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition

The SAMHSA (2011) 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 (3.4 percent) were categorized in the second-highest grouping for alcohol dependence. Also, North Dakotans aged 12-17 years were categorized in the second-highest grouping (prevalence= 2.1 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=7.6 percent) of U.S. states. Finally, North Dakotans aged 26 years and older were categorized in the lowest grouping of U.S. states, with a prevalence of 2.6 percent (SAMHSA, 2011).

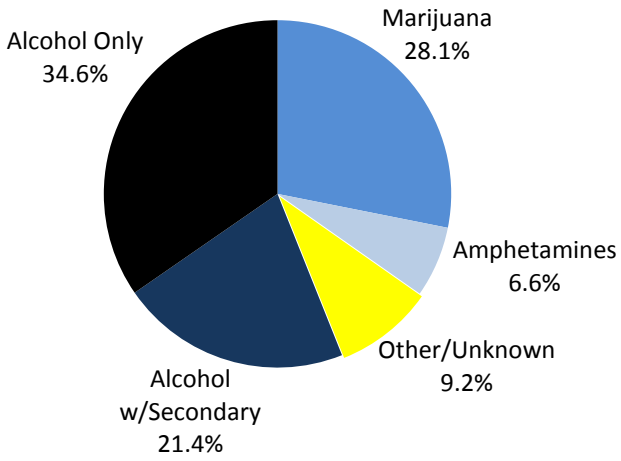
NEEDING BUT NOT RECEIVING TREATMENT

The National Survey on Drug Use and Health (2008-2009) 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 Dakota's age cohorts and their corresponding prevalence ranges are as follows: 12 years and older (7.9 percent; highest-ranked U.S. state grouping); 12-17 years (5.0 percent; second-highest ranked grouping); 18-25 years (19.6 percent; highest-ranked U.S. state grouping); and 26 years and older (5.6 percent; fourth-highest ranked grouping) (SAMHSA, 2011).

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 2011, 56.0 percent of 2,664 North Dakota substance abuse admissions were related to alcohol **(Figure 12)**.

Figure 12: North Dakota Substance Abuse Treatment, by Primary Substance 2011



Source: Treatment Episode Data Set
*Total outpatient admissions=2,664

Of this figure, 34.6 percent were for alcohol only and 21.4 percent were for alcohol with a secondary drug. Males comprised 63.8 percent of alcohol-only treatment admissions and 63.2 percent of the alcohol with secondary drug admissions in 2011. Whites comprised 73.9 percent of the alcohol-only treatment admissions and 65.1 percent of the alcohol with secondary drug treatment admissions. American Indians, which comprise about five percent of the state's population, comprised 21.7 and 29.6 percent of the alcohol-only and alcohol with secondary drug treatment admissions, respectively (TEDS, 2011).

Alcohol-only treatment admissions in North Dakota primarily involved persons aged 30-34 years (13.7 percent of the total admissions), followed by 25-29 years (12.8 percent), 40-44 years (12.8 percent), 50-54 years (11.5 percent), and 55 years and older (11.3 percent). Alcohol with secondary drug treatment admissions were most common among persons aged 25-29 years (17.3 percent of the total admissions), followed by 30-34 years (16.5 percent), 21-24 years (16.3 percent), 18-20 years (10.5 percent) and 35-39 years (9.8 percent) (TEDS, 2011).

North Dakota's alcohol-related outpatient treatment admission rates per 100,000 have remained relative steady in years 2005-2009 and were lower than the overall U.S. rates. For alcohol-only treatment, North Dakota had about 161 admissions per 100,000 persons (ages 12 and older), compared to the U.S. at 200 admissions per 100,000 in 2009. Regarding treatment for alcohol with a secondary drug in 2009, there were about 118 admissions per 100,000 in North Dakota, compared to 156 per 100,000 in the U.S. (Center for Behavioral Health Statistics and Quality, SAMHSA, 2010).

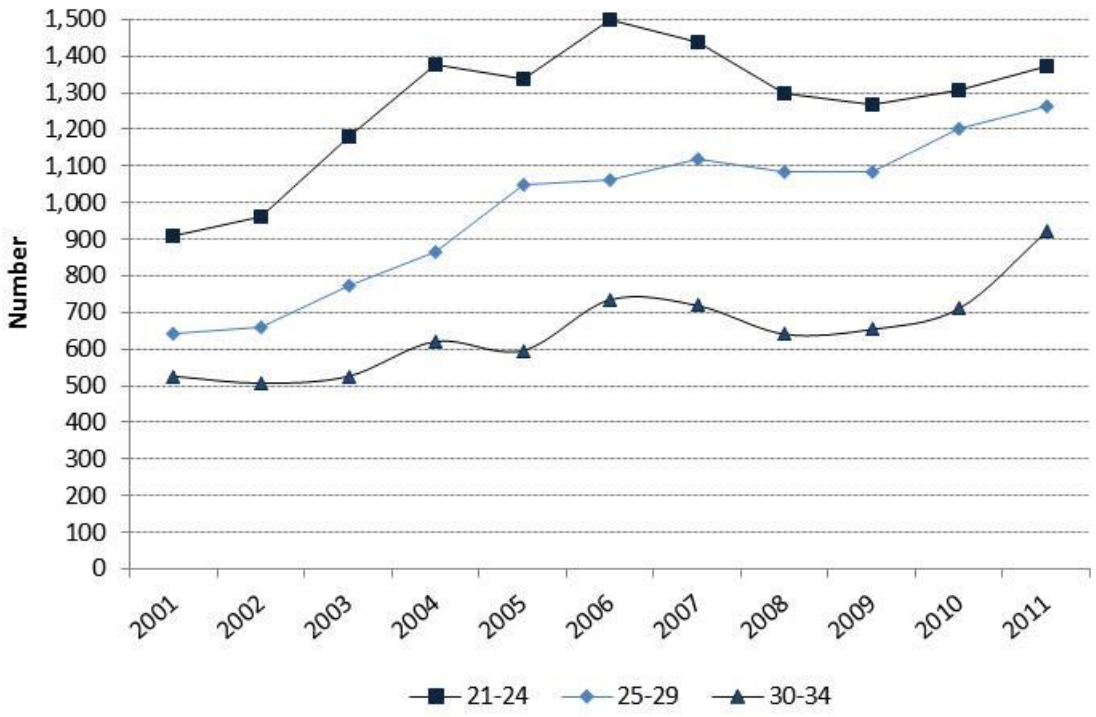
CRIME

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 2011, 50 sheriffs' departments and 47 police departments reported data to the state UCR program (North Dakota Office of Attorney General, 2012).

In 2011, 6,600 arrests were made for driving under the influence of alcohol, involving 5,994 adults and 52 juveniles. In 2011, annual DUI arrests were up 47.8 percent from 2002, when 4,467 persons were arrested (note: cases with missing age were excluded from this analysis). The number of DUI arrests increased 9.1 percent from 6,050 in 2010 to 6,600 in 2011. 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 13)**. In fact, 54 percent of all DUI arrests in the state in 2011 involved this age cohort.

Figure 13: DUI Arrests in North Dakota, by High-Risk Age Groups



Source: Office of Attorney General, Bureau of Criminal Investigation (2012).

While DUI arrests for offenders aged 21-24 and 30-34 have decreased since their ten-year high in 2006, the numbers have more steadily increased over time for offenders aged 25-29 years (**Figure 13**). Male offenders comprised just over three-quarters (77 percent) of DUI arrests in 2011. Since 2002, DUI arrests have increased 44 percent for males and 62 percent for females by 2011 (ND OAG, 2012).

According to the North Dakota Supreme Court (2012), the total number of DUI convictions in North Dakota by year for all-aged perpetrators were as follows: 2008- 4,595; 2009 – 4,563 (0.7% decrease from previous year); 2010 – 4,650 (1.9% increase from previous year); and 2011- 5,200 (11.8% increase from previous year).

The U.S. Department of Transportation and the North Dakota Department of Transportation (2011) 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 2001 to 2010, 51.7 percent (i.e., 425 of 821) of the fatalities that had a BAC test

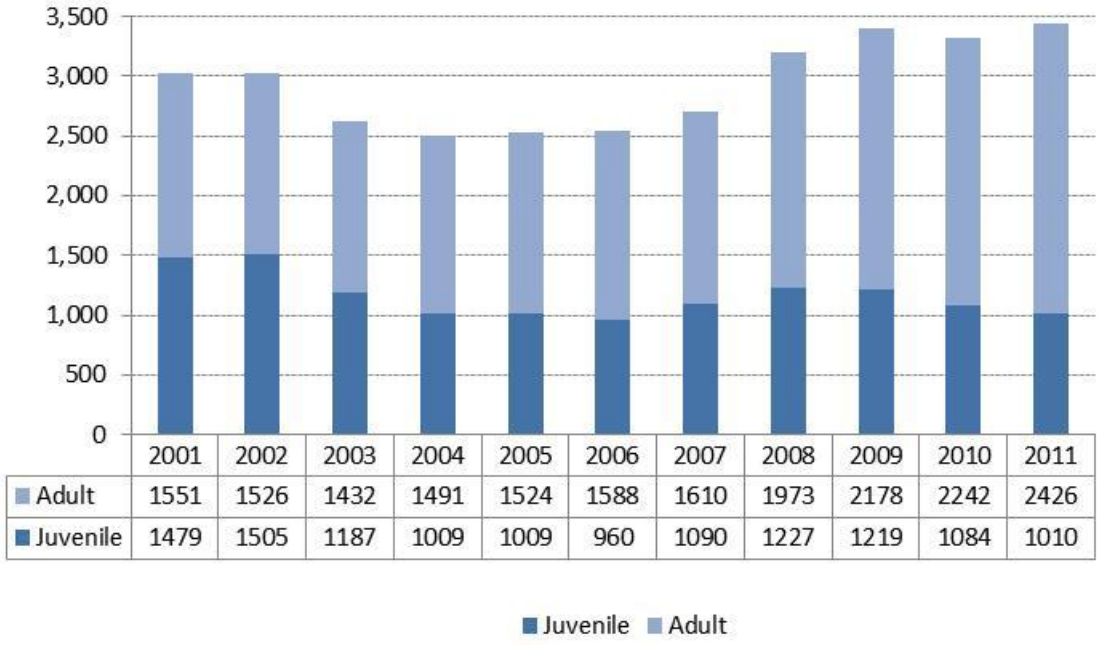
administered were positive for the presence of alcohol. Of the fatalities with some level of alcohol involvement, the overwhelming majority (84.0 percent) had BAC levels at 0.10 or higher. Of the remainder, 19 (4.4 percent) had BAC levels of .08 to .09, and 49 (11.5 percent) had BAC levels of .01 to .07 (NDDOT, 2011).

A total of 2,862 blood tests and 3,726 breath tests were administered to DUI suspects in 2010. Aggregated results of the blood tests indicated that 96.0 percent of suspects were at or above the legal BAC level of 0.08. Comparatively, 91.1 percent of all breath tests yielded BAC levels that were at or above the 0.08 mark. Thirty-four percent of blood-tested and 19 percent of breath-tested suspects were highly inebriated, with BAC levels at or above 0.2 (NDDOT, 2011).

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

"Index crimes" refer to seven common violent or property crimes, including burglary, larceny, motor vehicle theft, murder/non-negligent manslaughter, forcible rape, robbery, and aggravated assault. In North Dakota, the number of arrests for crime index offenses has increased by 9.6percent from 3,041 offenses in 2002 to 3,436 offenses in 2011 (**Figure 14**). From 2002 to 2011, adult arrests increased by 59 percent (N=900) and juvenile arrests decreased by 33 percent (N=495) (ND OAG, 2012).

Figure 14: Number of Arrests for Crime Index Offenses by Age, North Dakota



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Adult	1551	1526	1432	1491	1524	1588	1610	1973	2178	2242	2426
Juvenile	1479	1505	1187	1009	1009	960	1090	1227	1219	1084	1010

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 13,778 in 2011, which is a 10.9 percent increase since 2010. From 2002 to 2011, crime index offenses have declined by 9.6 percent (note: 1,461 fewer index offenses in 2011). The crime index offense rate for North Dakota was 2014.5 per 100,000 population in 2011, an increase of 9 percent since 2010. The 2011 rate represents a substantial 16.2 percent decrease from 2002 when the rate was 2403.2 offenses per 100,000 population.

Regarding crime index offenses, the most common type in North Dakota was larceny/theft (9,344 offenses in 2011), followed by burglary (2,227 offenses in 2011). The next most common crime index offenses included aggravated assault (1,040 offenses), motor vehicle theft (854 offenses), forcible rape (207 offenses), robbery (91 offenses), and murder/non-negligent manslaughter (15 offenses). In 2011, the offenses of murder/non-negligent manslaughter, robbery, aggravated assault, burglary, motor vehicle theft, and larceny/theft increased since the previous year by 36, 7, 23, 22, 8, and 12 percent, respectively; alternatively, the offense of forcible rape decreased by 7 percent from 2010 to 2011 (ND OAG, 2012).

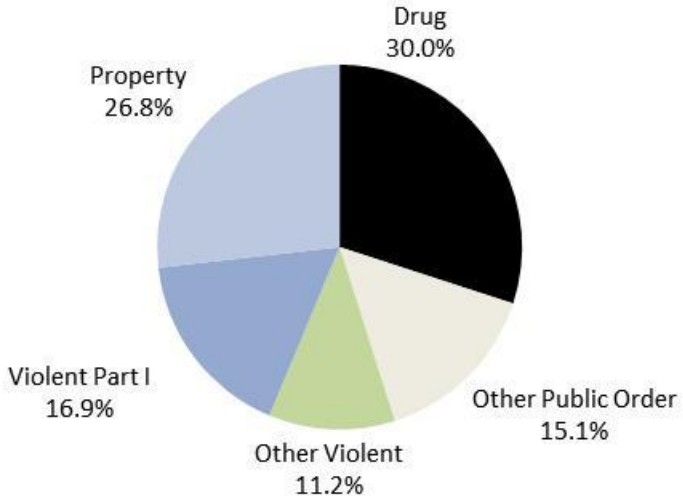
Violent crimes include murder/non-negligent manslaughter, forcible rape, aggravated assault, and robbery. In 2011, violent crime arrests in North Dakota totaled 490. Since 2002, the number of these arrests increased 145 percent in 2011. The state's violent crime rate was 197.8 offenses per 100,000 population in 2011, an increase of 14.2 percent from the previous year (ND OAG, 2012). North Dakota had the seventh-lowest violent crime rate among the 50 states in 2009 (U.S. Census Bureau, 2012).

The North Dakota Office of Attorney General (2011) 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 2011, there were 4,695 total arrests, of which 3,807 (81.1 percent) involved adults and 888 (18.9 percent) involved juveniles (i.e., under age 18). From 2002 to 2011, total LLV arrests in North Dakota decreased by 23 percent; juvenile LLV arrests declined by 46 percent within this period (ND OAG, 2012).

IMPRISONMENT

A harsh potential consequence of alcohol use is prison time. In 2011, 960 inmates entered prison in North Dakota **(Figure 15)**.

Figure 15: Offense Types among North Dakota Inmates, 2011



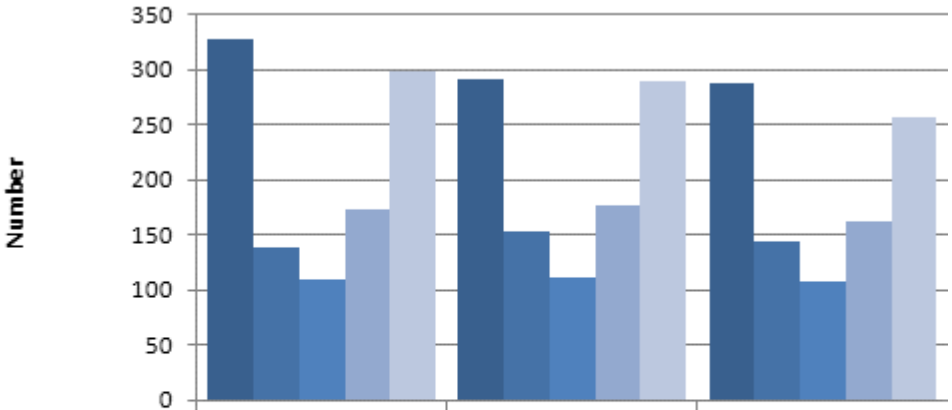
Source: ND Department of Corrections and Rehabilitation, Prisons Division, Inmate Population Information, 2011

Of this number, 30.0 percent were drug offenders, 26.8 percent were property offenders (e.g., burglary), 16.9 percent were violent part I offenders (e.g., (homicide, rape, robbery, aggravated assault), 11.2 percent were other violent offenders (e.g., assault), and 15.1 percent were other public order (e.g., corruption or solicitation of minors) offenders **(Figure 15)**.

In 2011, there were 812 male offenders that entered the North Dakota prison system (ND Department of Corrections and Rehabilitation, 2011). Of these inmates, their criminal offenses comprised the following: drug (28.2 percent); property (26.6 percent); part I violent (17.0 percent); other public order (16.6 percent); and other violent crime (11.6 percent). In 2011, there were 59 female offenders that entered the North Dakota prison system. Of these inmates, their criminal offenses comprised the following: drug (40.1 percent); property (27.9 percent); part I violent (16.3 percent); other violent (8.8 percent); and other public order (6.8 percent).

Since 2009, the number of drug-related prison admissions in North Dakota dropped from 328 to 288 in 2011, a decrease of 12.2 percent **(Figure 16)**. Also, property crime admissions decreased by 10.7 percent from 2009 and violent crime admissions decreased by 8.5 percent from 2010 (NDDOCR, 2011).

Figure 16: Prison Inmate Admissions Offense Categories, North Dakota



	2009	2010	2011
Drug	328	291	288
Other Public Order	139	154	145
Other Violent	109	112	107
Violent Part I	174	177	162
Property	299	290	257

Source: ND Department of Corrections and Rehabilitation, Prisons Division, Inmate Population Information, 2011.

Of the 1,081 North Dakota correctional inmates in 2010, 782 (73.2 percent) had one or more substance-related diagnoses for which they were receiving treatment; a total of 1,750 diagnoses were made among these inmates. In 2011, 711 (64.7 percent) of the 1,099 inmates had one or more substance-related diagnoses (N=1,557 diagnoses). For both years, the most common substances for which inmates were receiving treatment were alcohol, cannabis, and meth (**Table 6**).

Table 6. Substance-Related Diagnoses among North Dakota Correctional Inmates in Treatment, 2010 and 2011

Substance	2010		2011	
	N	%	N	%
Alcohol	605	34.6	533	34.2
Cannabis	465	26.6	411	26.4
Meth	279	15.9	241	15.5
Opioid	171	9.8	174	11.2
Cocaine	105	6.0	67	4.3
Hallucinogen	31	1.8	18	1.2
Sedative/Anxiolytic	20	1.1	31	2.0
Inhalant	11	0.6	14	0.9
Other	63	3.6	68	4.4
TOTAL	1750	100.0	1557	100.0

Source: North Dakota Department of Corrections and Rehabilitation.

DOMESTIC VIOLENCE, ABUSE, AND NEGLECT

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

The North Dakota Council on Abuse Women's Services (CAWS) collects and disseminates information on domestic violence incidents in North Dakota. In 2010, there were 5,159 domestic incidents (representing a 5.8% increase from previous year; directly impacting at least 4,739 children) reported to crisis intervention centers. Also, 4,808 new victims (94% of which were women) received services from crisis intervention centers in 2010 (ND CAWS, 2011). In 2009, there were 4,874 domestic incidents (representing a 6.8% increase from previous year; directly impacting at least 5,222 children) reported to crisis intervention centers. Also, 4,569 new victims (94% of which were women) received services from crisis intervention centers in 2009 (ND CAWS, 2010). In 2008, there were 4,563 domestic incidents (representing a 2% increase from previous year; directly impacting at least 4,563 children) reported to crisis intervention centers. Also, 4,258 new victims (94% of which were women) received services from crisis intervention centers in 2008 (ND CAWS, 2009). Comparatively, in 2007, there were 4,496 domestic incidents (representing a 5% decrease from previous year; directly impacting at least 4,673 children) reported to crisis intervention centers. Also, 4,179 new victims (95% of which were women) received services from crisis intervention centers in 2007 (ND CAWS, 2008).

The North Dakota Council on Abused Women's Services (2012) collects information on sexual assaults that are reported by victims that are served by 21 sexual assault crisis centers across North Dakota. Most but not all of these assaults are reported to law enforcement. In 2011, there were 828 primary and 258 secondary sexual assault victims. Regarding these primary victims, 90 percent were females and 96 percent of the assailants were males. In 2010, there were 952 primary and 258 secondary sexual assault victims. Regarding these primary victims, 92 percent were females and 98 percent of the assailants were males. In 2009, there were 830 primary and 375 secondary sexual assault victims. Regarding these primary victims, 90 percent were females and 94 percent of the assailants were males. In 2008, there were 854 primary and 409 secondary

sexual assault victims. Regarding these primary victims, 89 percent were females and 95 percent of the assailants were males (ND CAWS, 2009, 2010, 2011).

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

North Dakota Kids Count (2009) reported there were 6,982 suspected victims of child abuse or neglect in North Dakota in 2008. This number represents a 3.5 percent increase from the number of suspected victims in 2006 and an 11.3 percent increase in the number of suspected victims reported in 2007. The most recent figures from North Dakota Kids Count (2011) indicate a sharp decrease in suspected victims to 6,399 (8.4 percent decline since 2008).

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.

Low birth weight (i.e., newborns weighing less than 5 pounds, 8 ounces) is a leading cause of neonatal death and contributes to a greater likelihood of lifelong disability, compared to normal weight infants (US DHHS, 2009). In 2009, North Dakota's prevalence of low weight births was 6.4 percent, which placed it in the bottom one-quarter of U.S. states (Kaiser Family Foundation, 2012; http://www.statehealthfacts.org/comparemaptable.jsp?ind=42&cat=2). In comparison, the U.S. prevalence of low weight births was 8.2 percent for each of the years 2007, 2008, and 2009. North Dakota's 2009 prevalence represents a decrease from 2008 when 6.8 percent of resident births were low weight (Hamilton et al., 2010). North Dakota's 2007 low weight birth prevalence was 6.3 percent (Hamilton et al., 2010).

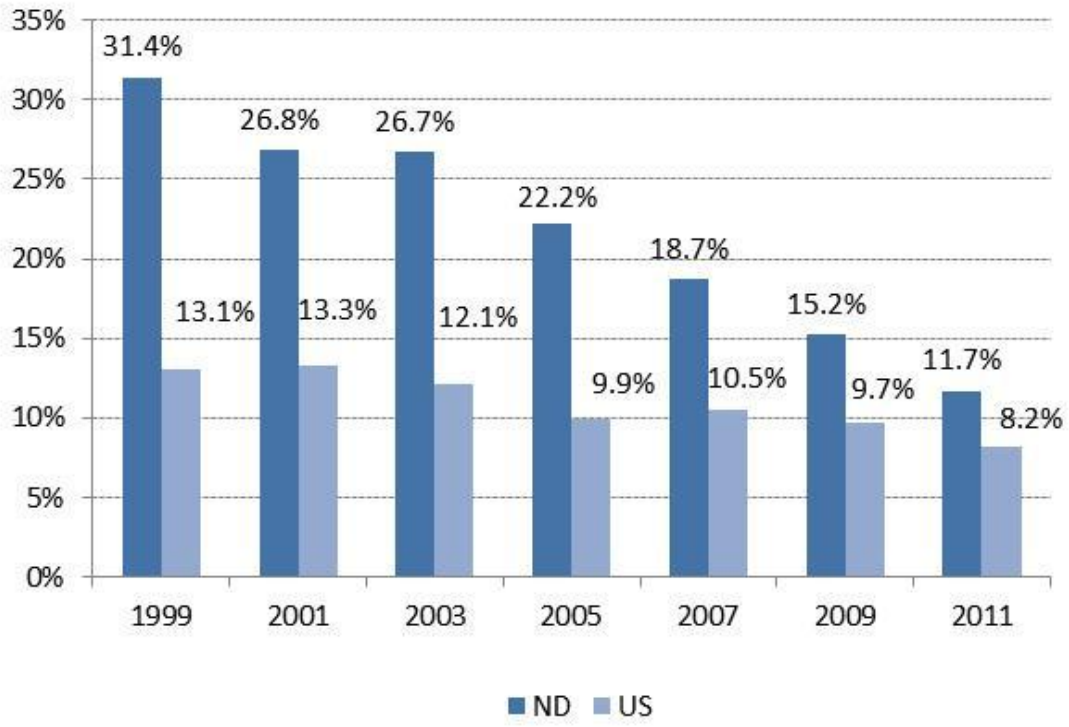
Fetal Alcohol Syndrome (FAS) is another potential consequence caused by mothers who use alcohol during their pregnancies. According to the North Dakota Division of Vital Records (2006), there are very limited numbers of these cases per year. In fact, there was only one documented FAS case in 2005 and 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). In a recent (July, 2012) personal communication with Dr. Burd, he indicated that about one percent (about 80 per year) of all live births in North Dakota are affected by FASD. Thus, in the state population from birth to age 18 years FASD prevalence is approximately 1,250 (note: about 200 affected persons will have died by age 18). The lifetime costs of care for a person with FASD is increased by $2.4 - 2.8 million (Dr. Larry Burd, personal communication, July 2012).

ALCOHOL AND VEHICLES

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

In the YRBS (2011), 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 17)**. In 2011, 11.7 percent of students responded in the affirmative.

Figure 17: Driving when Consuming Alcohol, North Dakota and United States, Students Grades 9-12



Source: Youth Risk Behavior Survey (Grades 9-12)
*one or more times within past 30 days.

Since 1999, the percent of impaired teen drivers in North Dakota has declined from one-third to about one-tenth in 2011. However, North Dakota's rates were much higher than the U.S. rates for each YRBS year. Among North Dakota high school students, boys (11.8 percent) were equally likely as girls (11.6 percent) to have driven a vehicle after drinking alcohol in 2011. 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 2011, the percent of students by grade who drove after consuming alcohol has substantially declined (YRBS, 2011).

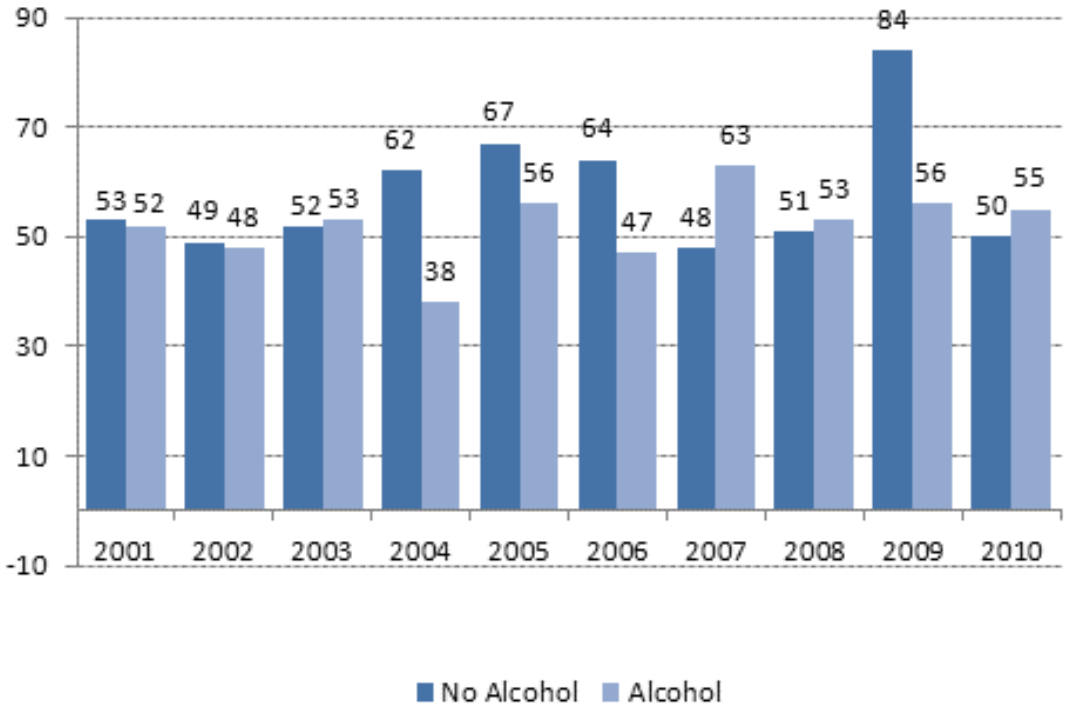
In 2011, one-quarter (25.1percent) of North Dakota high school students said that in the past month, they were a passenger of a driver who had consumed alcohol. This rate is substantially

lower than North Dakota's 1999 prevalence rate of 48 percent and is comparable to the U.S. prevalence of 24.1 percent in 2011 (YRBS, 2011).

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, 6.3 percent said they had recently driven a vehicle when they had drunk alcohol in 2010 (NDDoH BRFSS, 2010). Compared to the U.S. rate, North Dakotans were almost twice as likely to engage in this illegal and dangerous behavior; the CDC BRFSS website indicated that North Dakota had the highest prevalence of recent drinking and driving among all states in 2010. In North Dakota, men were three times more likely than women to have driven a vehicle when they had drunk alcohol (NDDoH BRFSS, 2010). North Dakotans aged 18 to 34 years were more likely than their older counterparts to have driven a vehicle when they had drunk alcohol (NDDoH BRFSS, 2010).

From 2001 to 2010, there were 976 fatal vehicle crashes in North Dakota, or about 98 per year. The highest annual number of fatal crashes (i.e., 116) occurred in 2009. Within this ten-year period, approximately half (47.8 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 2001 to 2010, a total of 1,101 persons died in these 976 crashes, and 521 (47.3 percent) of these deaths were a result of alcohol-related crashes (North Dakota Department of Transportation, 2011) **(Figure 18)**.

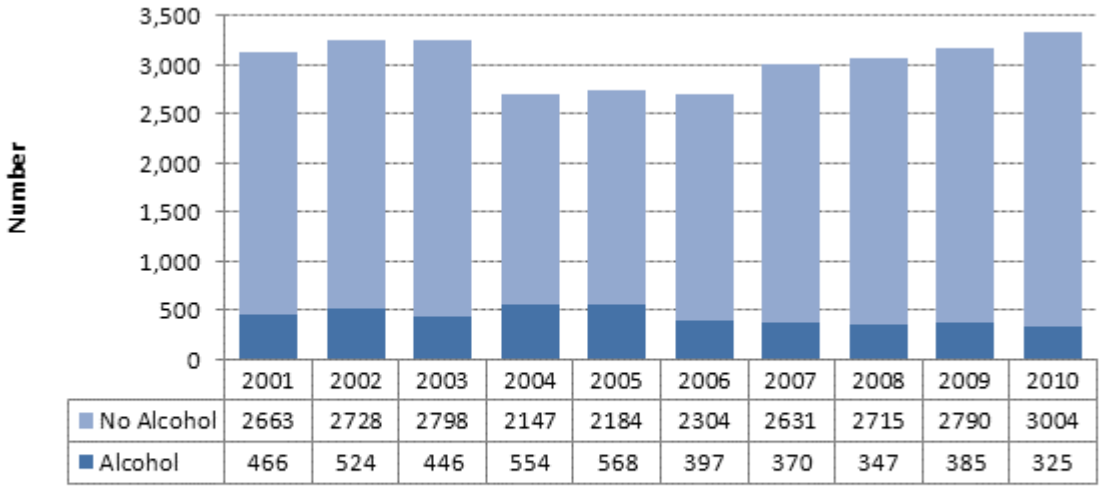
Figure 18: Alcohol-Related Motor Vehicle Fatalities, North Dakota



Source: ND Department of Transportation; Fatality Analysis Reporting System

In the period 2001-2010, there were 30,346 injury crashes, with 4,382 (14.4 percent) having alcohol involvement **(Figure 19)**. Over this period, the number of injury crashes declined in 2004 through 2006, but then increased in 2007 through 2010; during this period, the percent of these crashes that were alcohol-related was lower in 2001-2004 (14-16 percent), hit its peak in 2005-2006 (20-21 percent), and then decreased in ensuing years to its lowest percentage in 2010 (9.8 percent). A total of 44,945 injuries were incurred in these 30,346 crashes for this ten-year period. About 13 percent (N=6,063) of these injuries were the result of alcohol-related crashes (North Dakota Department of Transportation, 2011).

Figure 19: Alcohol-Related Motor Vehicle Crashes Involving Injury, North Dakota



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
No Alcohol	2663	2728	2798	2147	2184	2304	2631	2715	2790	3004
Alcohol	466	524	446	554	568	397	370	347	385	325

Source: ND Department of Transportation

In 2010, North Dakota's motor vehicle mortality rate was 1.26 deaths per 100 million vehicle miles traveled, compared to the U.S. rate of 1.09 (North Dakota Department of Transportation, 2011). Comparatively, North Dakota's motor vehicle crash fatality rates in 2008 and 2009 were 1.37 and 1.76 deaths per 100 million vehicle miles traveled (North Dakota Department of Transportation, 2011). The U.S. rates for 2008 and 2009 were 1.26 and 1.13 deaths per 100 million miles traveled. Since 2000, North Dakota's rates were lower than U.S. rates for years 2000-2004 and higher than the U.S. rates for years 2005-2010.

The North Dakota Department of Transportation (2011) estimated that traffic crashes cost the state $566.3 million in 2010. Of this figure, $135.5 million were due to fatalities, $318.8 million were associated with injuries, and $112 million were due to property damage. These figures are based on the following per-incident costs in 2010: death - $1.29 million; injury - $68,100; property damage - $8,200 (North Dakota Department of Transportation, 2011).

SCHOOL DRUG- AND VIOLENCE-RELATED INCIDENTS

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

TOTAL NUMBER OF VIOLENT AND DRUG-RELATED INCIDENTS IN NORTH DAKOTA K-12 SCHOOLS THAT RESULTED IN SUSPENSION OR EXPULSION

2009-2010 – 1,807 incidents (Total Public/Nonpublic K-12 enrollment: 101,319)**:**

- 800 reported fighting/mutual altercation incidents;
- 310 reported tobacco incidents;
- 119 reported simple assault incidents;
- 177 reported drug incidents;
- 82 reported alcohol incidents;
- 89 reported terrorizing incidents;
- 38 reported knife incidents;
- 53 reported assault incidents;
- 19 reported other object incidents;
- 29 reported reckless endangerment incidents;
- 30 reported hazing incidents;
- 31 reported robbery incidents;
- 11 reported other offenses resulting in 10 days out of school suspension or expulsion;
- 0 reported handgun incidents;
- 1 reported serious bodily injury incidents;
- 12 reported sexual imposition incidents;
- 1 reported rifle/shotgun incidents;

- 3 reported other firearm incident;
- 1 reported aggravated assault incident;
- 1 reported murder, manslaughter, negligent homicide, kidnapping, felonious restraint, inciting a riot, or gross sexual imposition/rape incidents
- 149 reported vandalism/criminal mischief

- **Truancy Incidents reported in 2009-2010:**
  - 7810 days ND students were truant
  - 1922 students truant
  - State truancy rate: 4.06 days

2008-2009 – 1,756 incidents (Total Public/Nonpublic K-12 enrollment: 101,179)**:**

- 818 reported fighting/mutual altercation incidents;
- 253 reported tobacco incidents;
- 151 reported simple assault incidents;
- 167 reported drug incidents;
- 66 reported alcohol incidents;
- 101 reported terrorizing incidents;
- 33 reported knife incidents;
- 53 reported assault incidents;
- 11 reported other object incidents;
- 32 reported reckless endangerment incidents
- 7 reported hazing incidents;
- 23 reported robbery incidents;
- 13 reported other offenses resulting in 10 days out of school suspension or expulsion;
- 1 reported handgun incidents;
- 2 reported serious bodily injury incidents;
- 17 reported sexual imposition incidents;
- 0 reported rifle/shotgun incidents;
- 0 reported other firearm incident;
- 0 reported aggravated assault incident;
- 8 reported murder, manslaughter, negligent homicide, kidnapping, felonious restraint, inciting a riot, or gross sexual imposition/rape incidents

- **Truancy Incidents reported in 2008-2009:**
  - 7,148 days ND students were truant
  - 2,427 students truant
  - State truancy rate: 2.95 days

2007-2008 – 1,759 incidents (Total Public/Nonpublic K-12 enrollment: 102,112)**:**

- 685 reported fighting/mutual altercation incidents;
- 264 reported tobacco incidents;
- 134 reported simple assault incidents;
- 145 reported drug incidents;
- 95 reported alcohol incidents;
- 145 reported terrorizing incidents;
- 37 reported knife incidents;
- 70 reported assault incidents;
- 36 reported other object incidents;
- 41 reported reckless endangerment incidents
- 53 reported hazing incidents;
- 26 reported robbery incidents;
- 15 reported other offenses resulting in 10 days out of school suspension or expulsion;

- 0 reported handgun incidents;
- 0 reported serious bodily injury incidents;
- 7 reported sexual imposition incidents;
- 2 reported rifle/shotgun incidents;
- 2 reported other firearm incident;
- 2 reported aggravated assault incident;
- 0 reported murder, manslaughter, negligent homicide, kidnapping, felonious restraint, inciting a riot, or gross sexual imposition/rape incidents

- **Truancy Incidents reported in 2007-2008:**
  - 15,457 days ND students were truant
  - 5,370 students truant
  - State truancy rate: 2.88 days

MORTALITY RATES

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

From 1999 through 2008, North Dakota had an average of 68 liver disease deaths per year. The state's age-adjusted liver disease death rate increased from 9.4 deaths per 100,000 in 1999 to 11.7 deaths per 100,000 in 2005. In 2006 and 2007, rates dropped to 8.8 and 7.4 deaths per 100,000 population, respectively. In 2008, the liver disease death rate in North Dakota rose to 11.3 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, 2012; ICD-10 Codes K70-76).

According to the Centers for Disease Control and Prevention (CDC), North Dakota averaged about 83 suicide deaths per year in the period 1999 to 2008. North Dakota's age-adjusted rate was approximately 10-11 suicides per 100,000 in 1999 and 2000, but increased to 14.4 suicides per 100,000 in 2002. The state's rate decreased to 11.3 suicides per 100,000 population in 2004 and then increased to 13.8 suicides per 100,000 in 2006. In the two most recent years of data, North Dakota's suicide rate was 14.6 (the state's highest mark in the past ten years) and 13.6 per 100,000 population. The U.S. rate has remained stable over the time period at about 11 suicides per 100,000 population (CDC Wonder, 2012; ICD-10 Codes X60-X84, Y87.0).

North Dakota has one of the lowest violent crime and murder rates in the country (Department of Justice, 2009). From 1999 to 2008, North Dakota averaged 10 homicides per year. The age-adjusted homicide rate for the state has ranged from 1.7 to 2.2 deaths per 100,000 populations. Comparatively, the U.S. homicide death rate ranged from 5.9 to 6.2 deaths per 100,000 from 1999 to 2008 (CDC Wonder, 2012; ICD-10 Codes X85-Y09, Y87.1).

According to the CDC (2012), North Dakota averaged 268 unintentional injury deaths per year in the period 1999 to 2008. In this ten-year period, North Dakota's age-adjusted injury mortality rate has typically been about 38 deaths per 100,000 population, which was similar to the typical U.S. rate of 37 deaths per 100,000. The state's injury mortality rate higher than the national rate in years 1999-2000, 2003-2005,and most recently in 2008 when North Dakota had its highest rate (46.8 per

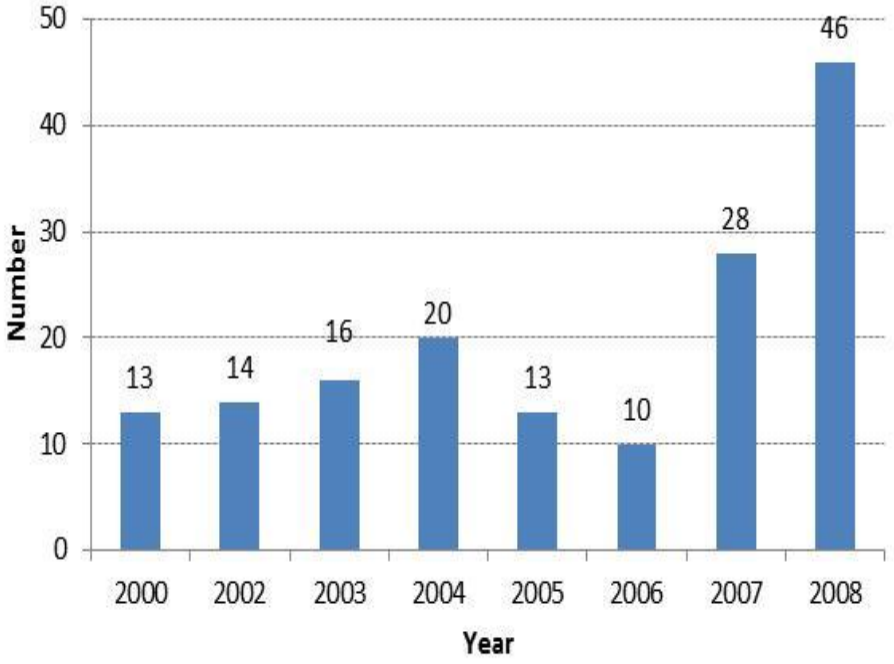
100,00) in the decade (CDC, 2012; ICD-10 Codes V01-X59). It is plausible that alcohol use was in part responsible for this most recent increase in the state's injury mortality rate, given the known connection.

In the period 2007-2011, the most common external causes for mortality in North Dakota were car/van/pickup accident (22.6%), suicide (22.6%), and falls (20.7%). The most common age group for each of these causes of death were ages 30-39 years for car/van/pickup accidents, ages 40-49 years for suicides, and ages 80-89 years for falls (ND Vital Records, 2012; contact: Carmell Barth).

During the period 1999 through 2008, North Dakota averaged 125 motor vehicle crash fatalities per year. The state's age-adjusted mortality rate had fluctuated slightly over this ten-year period, ranging from 17 to 21 deaths per 100,000 population. In contrast, the U.S. rate has remained steady at about 16 motor vehicle crash deaths per 100,000 population (CDC Wonder, 2012; ICD-10 Codes V01-V99, X82, Y03, Y32, Y36.1).

In North Dakota, unintentional poisonings were the fourth leading cause of injury-related mortality in the period, 2004 to 2008 exposures (ND Division of Injury Prevention and Control, 2011). Among North Dakota adults, pain relievers, sedatives, antidepressants, and narcotics are among the most common exposures (ND Division of Injury Prevention and Control, 2011). In the period 2007-2011, North Dakotans who died from unintentional poisoning ranged in age from 15 to 79 years, with the most common age groups being 30-39 (25.4%), 40-49 (22.5%), and 50-59 (17.8%; ND Vital Records, 2012; contact person: Carmell Barth). According to federal vital records, the total number of unintentional poisoning deaths has substantially increased over the years to its highest total of 46 deaths in 2008 **(Figure 20**; CDC Wonder, 2012; ICD-10 codes X40-X49).

Figure 20. Number of Unintentional Poisonings by Year, North Dakota



Tobacco Consumption in North Dakota

Smoking causes a wide range of serious and potentially fatal illnesses including heart disease, cancer, stroke, and lung disease (CDC, 2008). Throughout the world, tobacco use is attributable to approximately five million deaths annually (Campaign for Tobacco-Free Kids, 2011a); the number of tobacco-related deaths worldwide is projected at 8 million by the year 2030 (WHO, 2008). In the U.S., tobacco use causes approximately 443,000 deaths per year, of which approximately 50,000 are due to exposure to secondhand smoke (Campaign for Tobacco-Free Kids, 2011b). The overall costs of cigarette smoking in the US are approximately $193 billion (i.e., $97 billion due to lost productivity and $96 billion for health care; CDC, 2008; Campaign for Tobacco-Free Kids, 2011). Secondhand smoke costs approximately $4.98 billion in health care expenditures per year in the US (Campaign for Tobacco-Free Kids, 2011b). According to the U.S. Department of Health and Human Services (2006), secondhand smoke causes premature death among adults and children who are non-smokers; also, there is no safe level of secondhand smoke exposure.

In North Dakota, approximately 800 adults die prematurely each year due to smoking and approximately 90 people die due to secondhand smoke exposure (Campaign for Tobacco-Free Kids, 2011c). Annual smoking-related costs incurred in North Dakota include $247 million in total medical care, $47 million in Medicaid, and $192 million due to lost productivity from premature death (Campaign for Tobacco-Free Kids, 2011c).

AGE OF FIRST CIGARETTE USE

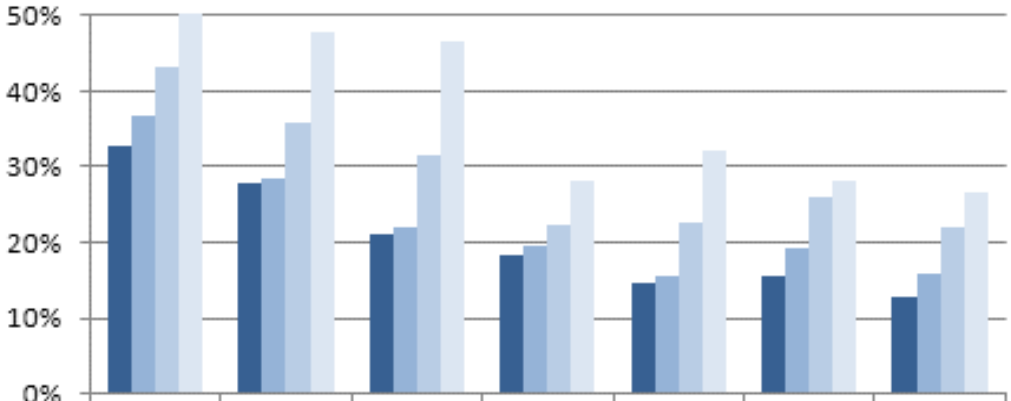
Many school-aged children encounter a situation where they may try cigarette smoking. The Youth Behavioral Risk Survey (YBRS) asked North Dakota student respondents if they had ever tried cigarette smoking, even if it was one or two puffs. In 2011, 44.1 percent of students said they had tried smoking, a figure that roughly equivalent to the U.S. prevalence figure of 44.7 percent. North Dakota's prevalence rate has declined substantially from 73.1 percent in 1999. North Dakota's boys were more likely than girls to have ever tried cigarette smoking in years 1999, 2001, 2005, 2009, and 2011, but less likely than girls in 2003 and 2007 (YRBS, 2011).

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 2011, 8.6 percent of the state's students responded in the affirmative, a figure that was slightly lower than the 2011 U.S. rate of 10.3 percent. North Dakota's percent of early smoking initiation has declined by two-thirds 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 1999-2005,2009, and 2011 and equally likely in 2007 (YRBS, 2011).

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, 2011). In 2011, the state's rate of 19.4 percent was slightly higher than the U.S. prevalence of 18.1 percent. This represented a nearly 50 percent decrease in North Dakota youth smoking since 1999 when 40.6 percent smoked. Generally, North Dakota girls were more likely than boys to have smoked in the past month. This pattern was present in all recent YRBS survey years except for 2009 when boys had a slightly higher 30-day smoking prevalence than girls (23.2 vs. 21.5 percent).

Figure 21: Cigarette Smokers among North Dakota Students, by Grade



	1999	2001	2003	2005	2007	2009	2011
Grade 9	32.9%	27.8%	21.1%	18.2%	14.7%	15.7%	12.8%
Grade 10	36.7%	28.5%	22.1%	19.6%	15.6%	19.2%	15.9%
Grade 11	43.2%	35.8%	31.4%	22.4%	22.7%	26.1%	22.1%
Grade 12	50.3%	47.8%	46.6%	28.3%	32.2%	28.0%	26.6%

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 21)**. Findings demonstrated that higher cigarette use corresponds with higher grades. Recent cigarette use substantially declined from 1999 to 2005 within all grades (9 through 12). From 2007 to 2009, smoking prevalence increased slightly for grades 10 and 11, but decreased for 12th graders. Patterns of recent cigarette use among North Dakota high school students were assessed by grade and gender in 2011. In general, increased use of cigarettes corresponded with higher grades. Among grades 9 through 11, girls' recent smoking prevalence rates were higher than for boys. Among 12th graders, boys' smoking rates were higher than for girls (YRBS, 2011).

REGULAR CIGARETTE SMOKING AMONG STUDENTS

Students in grades 9-12 were asked if they smoked on 20 or more days in the past month (YRBS). In 2011, 8.3 percent of North Dakota high school students, compared to 6.4 percent of U.S. students, indicated they smoked cigarettes on 20 or more days in the past month. Between 2001 and 2009, North Dakota's rates of regular smoking among students were consistently higher than the U.S. rate (YRBS, 2011). In North Dakota, boys' rates were higher in 2005 and 2009, and girls' rates were higher in 2001, 2003, 2007, and 2011. Rates of regular cigarette smoking among students for North Dakota and the U.S. have markedly declined since 1999 (YRBS, 2011).

High-consumption cigarette use (having smoked more than 10 cigarettes a day during the past month) among North Dakota high school students (grades 9-12) was examined by the YRBS in years 1995, 1999, 2001, and 2003 (note: no state data for years 2005-2011). 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, 2003).

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 11.8 percent of U.S. respondents (2007) engaged in this smoking behavior (note: no ND YRBS data for 2009-2011). 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, 2007).

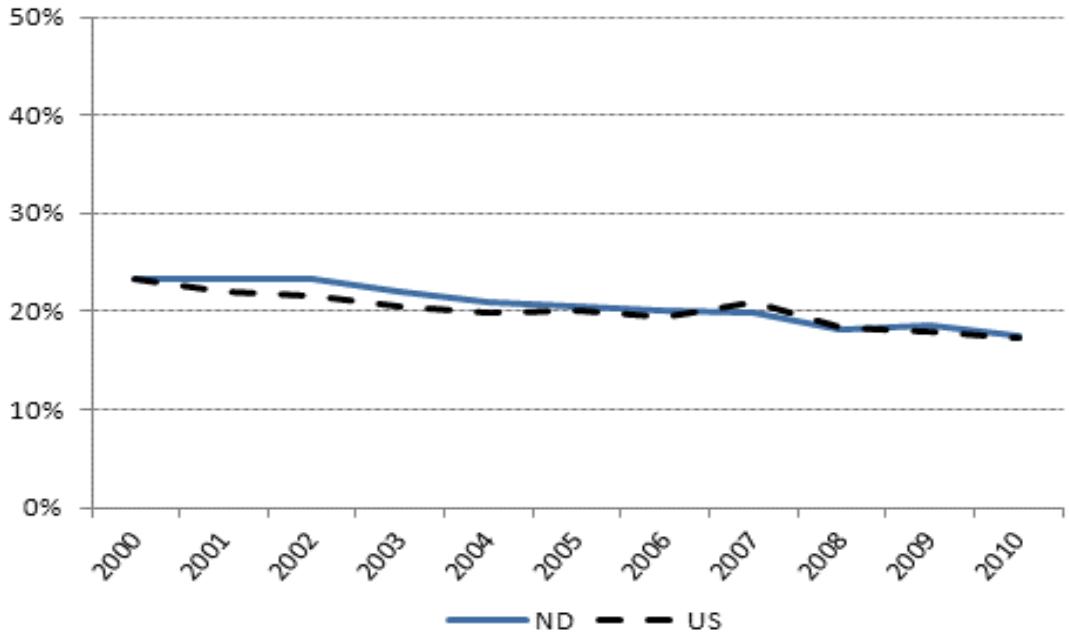
SMOKING ON SCHOOL GROUNDS

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, 2007; no state data for 2009-2011). 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, 2007).

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 2003 through 2009, at about 18 to 22 percent **(Figure 22)**. In 2010, current smoker prevalence among North Dakota adults was 17.4 percent. Over the past seven years, North Dakota's smoking percentages have generally mirrored U.S. figures (BRFSS, 2011).

Figure 22: 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

North Dakota has a lower prevalence of current cigarette smokers than half the states. Specifically, North Dakota's 17.4 percent smoker prevalence ranked it 25th highest among U.S. states and DC. Comparatively, West Virginia had the highest smoker prevalence of 26.8 percent, and Utah had the lowest prevalence of 9.1 percent. Regionally, the lowest smoker prevalence appeared in Western states and the highest prevalence was concentrated in the Southern and Appalachian regions (BRFSS, 2011).

North Dakota men were more likely than women to smoke cigarettes. This pattern has occurred across virtually every year since 1990. In 2010, 18.2 percent of men and 16.6 percent of women were cigarette smokers. North Dakotans were more likely to smoke cigarettes at younger ages (**Table 7**). Slightly more than one-quarter (26.5 percent) of persons aged 25 to 34 years smoked cigarettes, compared to 14.7 percent of persons aged 55 to 64 years and only 9.2 percent of persons aged 65 and older (BRFSS, 2011).

Table 7. Cigarette Smoking among Adults Ages 18+, North Dakota, 2010.

	Percent
Overall:	17.4
Gender:	
Male	18.2
Female	16.6
Age:	
18-24	20.2
25-34	26.5
35-44	15.2
45-54	19.0
55-64	14.7
65+	9.2
Race (comb. 1999-2008)	
American Indian	48.4
White	19.2
Asian	18.0
Black	20.6
Other	24.0
Education:	
Less Than High School	N/A
High School or GED	22.0
Some Post-High School	18.7
College Graduate	7.7
Income (thousand):	
<$15,000	29.8
$15,000-24,999	22.8
$25,000-34,999	23.9
$35,000-49,999	19.8
$50,000+	13.3

Source: BRFSS.

American Indians (48.4 percent) in North Dakota were more than twice as likely to smoke cigarettes as persons of other races, including whites (19.2 percent) (BRFSS, 1999-2008; Table 7). Other races and their corresponding smoking rates were as follows: Asian (18.0 percent); Black (20.6 percent); and other (24.0 percent). North Dakotans with lesser education were more likely to smoke cigarettes than their higher educated counterparts (Table 7). Persons with less than a high school diploma smoked at 25.5 percent, whereas those with some post-high school education smoked at a rate of 21.3 percent, and only 9.3 percent of college graduates smoked cigarettes. Similarly, North Dakotans with lower incomes were more likely to smoke cigarettes (Table 7). About one-third (32.1%) of persons earning less than $15,000 a year smoke cigarettes, compared to only 14.0 percent of those earning $50,000 or more per year (BRFSS, 2009).

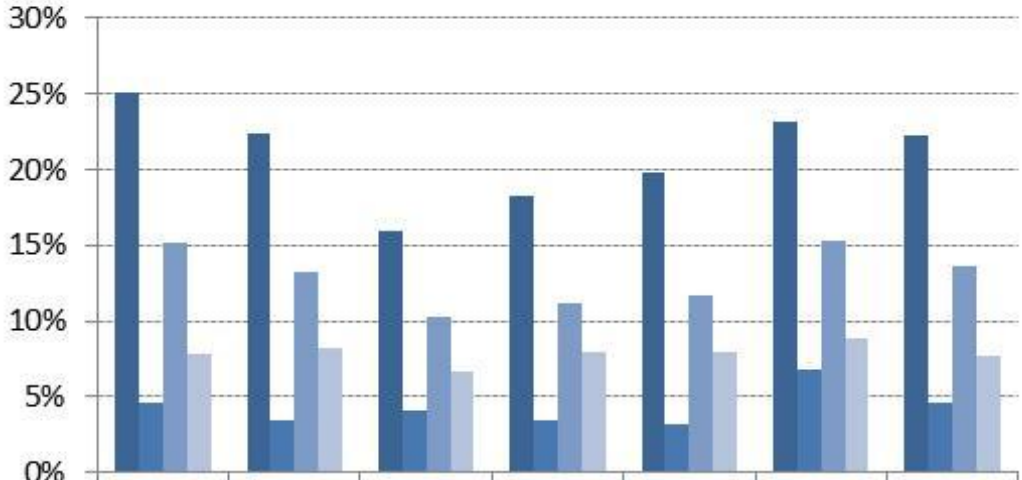
The National Survey of Drug Use and Health (NSDUH) is another source of information on tobacco use in the U.S. This survey, similar to the YRBS and BRFSS, assesses the percent of persons that smoked one or more cigarettes in the past month. The NSDUH determines the percent of state residents that are recent cigarette smokers by age cohort (12+, 12-17, 18-25, 26+), categorizes the rates into five ranked groupings and plots these groupings on U.S. maps (SAMHSA, 2011). North Dakotans age 12 and older were classified in the third-highest group of U.S. states (24.6 percent recent smokers). Compared to similarly-aged persons in other U.S. states, North Dakotans aged 12-17 were in the second-highest grouping (10.4 percent) for recent smokers. State residents aged 18-25 years were in the third-highest grouping (36.4 percent). Finally, state residents aged 26 years and older were classified in the third-highest ranked group of U.S. states (23.8 percent smokers) (SAMHSA, 2011).

SMOKELESS TOBACCO

According to the YRBS, chewing tobacco, snuff, or dip was used in the past 30 days by 13.6 percent of North Dakota high school students in 2011 **(Figure 23)**. By comparison, 7.7 percent of U.S. high school students used chewing tobacco, snuff, or dip on one or more of the past 30 days in 2011. North Dakota's smokeless tobacco rate declined from a high of 15.1 percent in 1999 to 10.3 percent in 2003, resurged in 2009 to 15.3 percent, and then declined in 2011 to 13.6 percent. Compared to its U.S. counterparts, North Dakota high school students' smokeless tobacco use is higher across every YRBS survey year. By gender, North Dakota boys were five times more likely than girls (22.2 percent versus 4.6 percent) to use smokeless tobacco in 2011 (YRBS, 2011). Increases in smokeless tobacco use from 2007 to 2009 were noted among boys and especially girls (i.e., 3.2 percent to 6.8 percent) in North Dakota high schools.

In 2007, 6.3 percent of North Dakota high school students used smokeless tobacco on school property (note no state YRBS data for 2009-2011). Among U.S. high school students, 4.8 percent used it on school premises in 2011. 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, 2007).

Figure 23: North Dakota Students, Grades 9-12 Who Used Chewing Tobacco, Snuff or Dip, 1999-2011

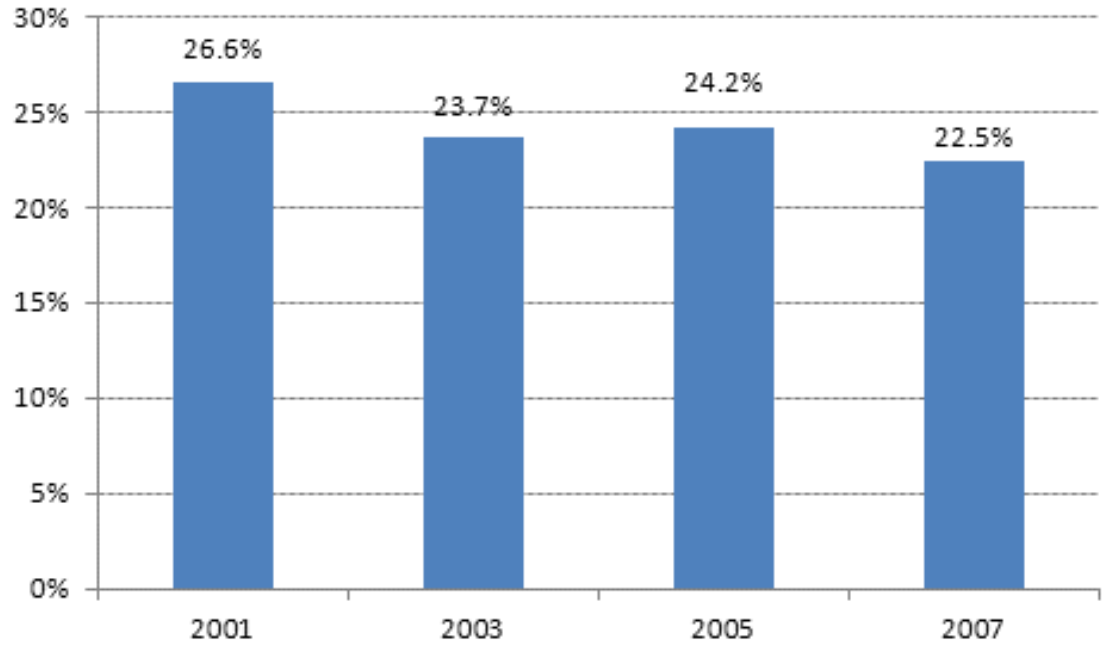


	1999	2001	2003	2005	2007	2009	2011
ND Male	25.1%	22.4%	15.9%	18.3%	19.8%	23.2%	22.2%
ND Female	4.6%	3.5%	4.1%	3.4%	3.2%	6.8%	4.6%
ND Total	15.1%	13.2%	10.3%	11.2%	11.7%	15.3%	13.6%
US Total	7.8%	8.2%	6.7%	8.0%	7.9%	8.9%	7.7%

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 the only available information is for 2001, 2003, 2005 and 2007 **(Figure 24)**. Based on these years of data, it is estimated that about one-fifth to one-quarter of North Dakota adults (primarily men) who have ever tried smokeless tobacco are current users. A decline in adult current smokeless users from 2001 to 2007 was noted.

Figure 24: Current Smokeless Tobacco Users, North Dakota, Adults Ages 18+



Source: Behavior Risk Factor Surveillance System
*Among those that have tried smokeless tobacco.

CIGAR/CIGARILLO USE AMONG STUDENTS

The 2011 YRBS found that 13.5 percent of North Dakota high school students had smoked cigars, cigarillos, or little cigars on at least one day during the past 30 days. This figure is higher than the 2011 U.S. prevalence of 13.1 percent. However, for the period of 2003 to 2009 North Dakota's recent cigar use, ranging from 11.4 to 13.0 percent, was lower than the U.S. prevalence for each year. In North Dakota, boys were substantially more likely than girls to have recently smoked cigars, cigarillos, or little cigars in the past month (YRBS, 2011).

ANY FORM OF TOBACCO

The YRBS estimated that 28.3 percent of North Dakota high school students and 23.4 percent of US high school students used some form of tobacco in the past month in 2011. North Dakota's prevalence has dropped substantially since 2003 when the prevalence of recent tobacco use was 34.1 percent. In 2011, boys (33.2 percent) were much more likely than girls (22.9 percent) to have recently used some form of tobacco in North Dakota (YRBS, 2011).

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 second-highest ranked U.S. state grouping with a prevalence of 30.4 percent (SAMHSA,

2011). North Dakotans aged 12-17 were categorized in the second-highest ranked grouping of U.S. states with a prevalence of 13.5 percent. North Dakotans aged 18-25 years were classified in the second-highest ranked grouping of U.S. states with a recent tobacco use prevalence of 46.4 percent. Finally, North Dakota residents aged 26 years and older were classified in the third-highest ranked grouping of U.S. states with a recent tobacco use prevalence of 28.9 percent (SAMHSA, 2011). In examining data from previous years of the NSDUH, tobacco use in North Dakota has continually declined across all age groups, especially younger people. The North Dakota CORE survey (conducted in 2003-05, 2006 and 2008) found that North Dakota college students were more likely than U.S. college students in 2005 to have used some form of tobacco in the past 30 days (38.9 percent vs. 28.1 percent) (Walton, 2005). In 2006 and 2008, North Dakota's figure dropped to 32.0 percent and 31.7 percent, respectively (ND CORE, 2007; 2009); however, these figures are still higher than the most up-to-date (2006) national benchmark prevalence of 26.2 percent (Core Institute, 2009). In 2010, North Dakota CORE respondents reported a slight decrease in recent tobacco use from the previous CORE survey to 30.6 percent (ND University System, 2011); this figure is higher than the 2009 national benchmark prevalence of 26.1 percent.

ATTITUDES TOWARD TOBACCO USE

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 54 to 80 percent. North Dakotans were found to agree that there were great health risks associated with cigarette smoking at very low levels relative to other states SAMHSA, 2011). In fact, North Dakota was in the lowest grouping of states for ages 12 or older (67.7 percent) and 26 or older (68.4 percent). The state was in the fourth-highest group among persons aged 12-17 years (65.9 percent) and third-highest group for ages 18-25 (65.8 percent; SAMHSA, 2011).

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

In the North Dakota Community Readiness Survey (2008), community members and key informants from urban, rural, and frontier areas were asked to assess the magnitude of (a) adult and (b) youth use of tobacco in their own community. Regarding *adult* tobacco use, 20.3 percent of community members and 31.4 percent of key informants characterized it as a "serious problem" (Table 8). Regarding *youth* tobacco use, 27.6 percent of community members and 37.6 percent of key

informants characterized it as a “serious problem” (Table 9). By geographic area, survey respondents from urban areas were more likely than respondents from rural or frontier areas to characterize adult and youth tobacco use in their communities as a serious problem.

Table 8. Perceptions of Adult Tobacco Use in their North Dakota Community

Respondent Type	Geographic Area	Minor/ moderate problem (%)	Serious problem (%)
Community Members	Urban	62.8	25.5
	Rural	66.5	18.6
	Frontier	69.6	16.2
	Comm. Member Total	66.2	20.3
Key Informants	Urban	59.8	34.8
	Rural	61.4	31.3
	Frontier	72.8	19.3
	Key Informant Total	62.6	31.4
Overall Total		65.5	22.5

Source: Hair et al., (2008)

Table 9. Perceptions of Youth Tobacco Use in their North Dakota Community

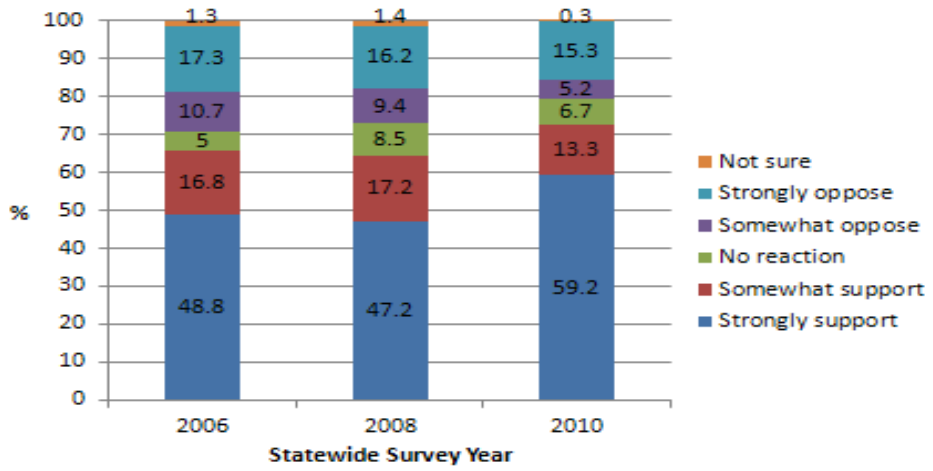
Respondent Type	Geographic Area	Minor/ moderate problem (%)	Serious problem (%)
Community Members	Urban	51.9	37
	Rural	55.8	23.3
	Frontier	60.5	21.1
	Comm. Member Total	56	27.6
Key Informants	Urban	55.6	41.2
	Rural	57.8	36.1
	Frontier	66.7	26.3
	Key Informant Total	58	37.6
Overall Total		56.4	29.6

Source: Hair et al., (2008).

In the North Dakota Community Readiness Survey (2008), respondents and key informants were asked if they agreed or disagreed with the following statement: “It is okay for youth to smoke cigarettes.” Among all community member respondents, 1.6 percent agreed with this statement. By geographic area, 2.2 percent of urban respondents, 1.0 percent of rural respondents, and 1.5 percent of frontier respondents agreed with this statement.

There is evidence that North Dakotans as a whole are becoming increasingly supportive of statewide smoke-free efforts. According to the findings of a recent study, 59.2% of North Dakotans now strongly support a state-wide comprehensive smoke-free law – a 12% increase from 2008 when acceptance was measured at 47.2% (Winkelman Consulting, 2010**; Figure 25**).

Figure 25. North Dakota Adults' Level of Support for Expanding the State Smoke-Free Law to Prohibit Smoking in All North Dakota Workplaces

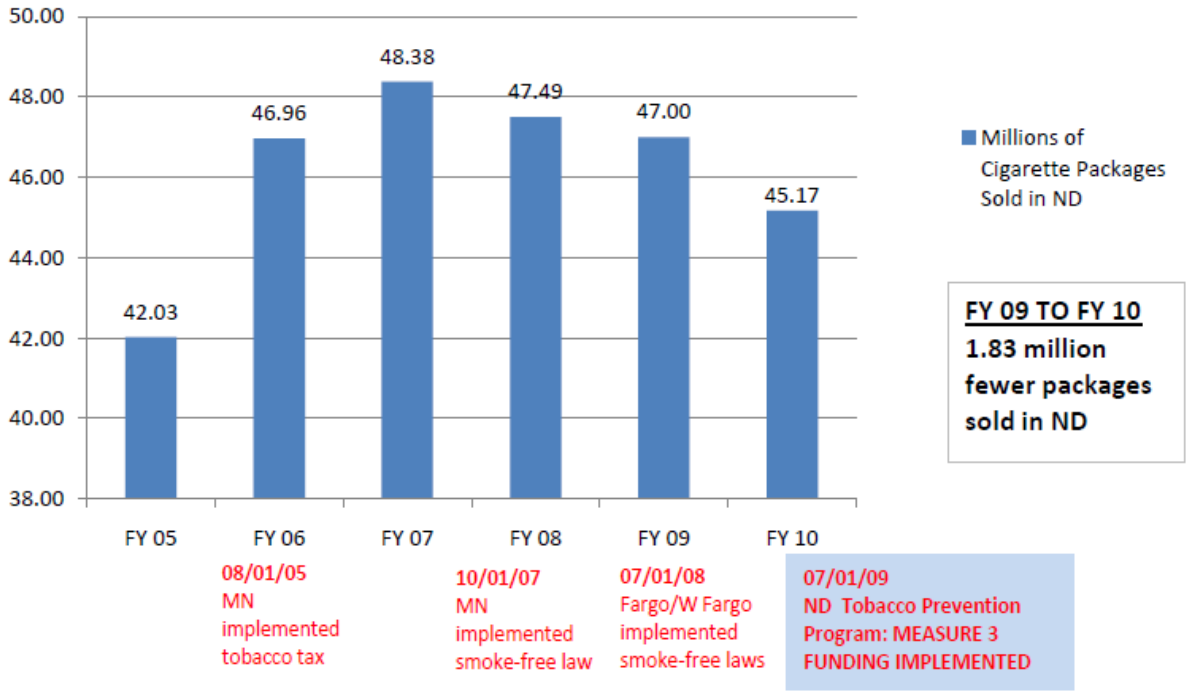


Source: 2010 Secondhand Smoke Study of North Dakota – Winkelman Consulting

QUITTING TOBACCO USE

In the North Dakota Behavioral Risk Factor Surveillance System (BRFSS), respondents were asked, "During the past 12 months, have you stopped smoking for one day or longer because you were trying to quit smoking?" The prevalence of North Dakota smokers attempting to quit smoking has increased from 49.1% in 2006 to 52.8% in 2007, 52.2% in 2008, 54.9% in 2009, and 58.6% in 2010 (Source: CDC BRFSS website, 2011). Another statistic that points to lower tobacco use in North Dakota in recent years is 1.83 million fewer cigarette packages were sold in the state during fiscal year 2010, as compared to fiscal year 2009 (Office of the State Tax Commissioner, 2010; **Figure 26**).

Figure 26. Millions of Cigarette Packages Sold in North Dakota, FY 2005 to FY 2010.



Source: North Dakota Office of the State Tax Commissioner (2010).

QUITTING CIGARETTES AMONG STUDENTS

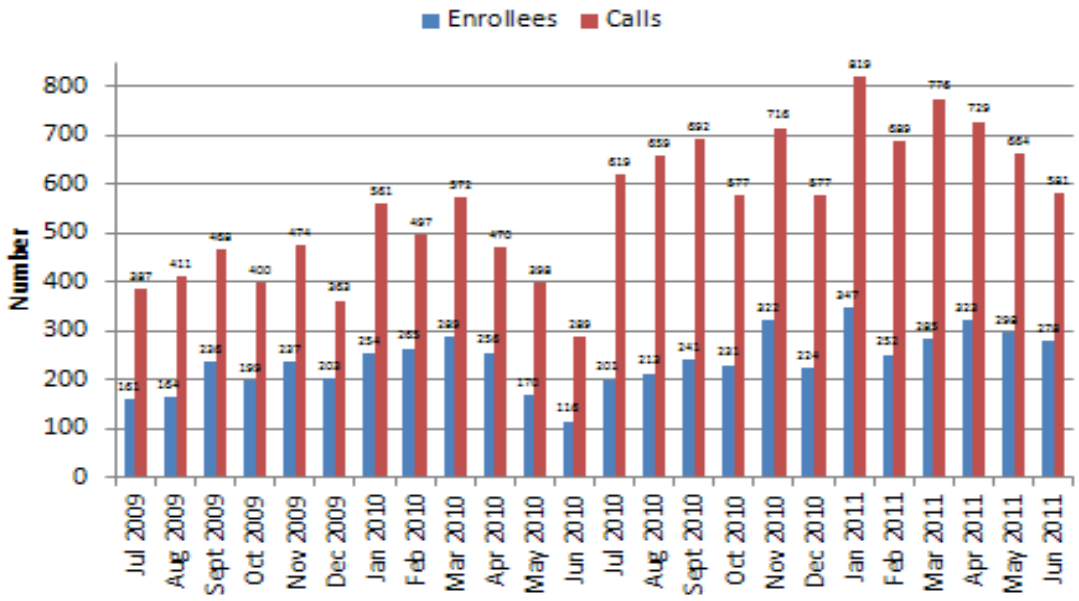
The cigarette smoking behavior continuum of children and adolescents can be described in stages of experimentation, regular smoking, and nicotine dependence. Smokers can quit at any stage, but successful cessation becomes more difficult as one becomes dependent on nicotine. According to the 2011 Youth Behavioral Risk Survey, 52.8 percent of North Dakota high school current smokers (grades 9-12) tried to quit smoking during the past year. This figure is slightly higher than the 2011 national figure of 49.9 percent. Since 2005, the percent of North Dakota student smokers trying to quit has decreased. In North Dakota, girls have been more likely than boys to attempt quitting smoking in years 2001 through 2011 (YRBS, 2011).

NORTH DAKOTA TOBACCO QUITLINE AND QUITNET

North Dakota's population-based tobacco use cessation services include the North Dakota Tobacco Quitline and, since February 2010, QuitNet. The Quitline is a free, statewide, phone-based tobacco treatment program that is funded by the North Dakota Legislative Assembly provided to the North Dakota Department of Health from monies received from the Master Settlement Agreement. Main features of the North Dakota Tobacco QuitLine include tobacco cessation treatment provided by counselors from the University of North Dakota, educational materials on cessation, referral to community resources, and nicotine replacement therapy (NRT; 1-month supply every six months through June 2009; 2-month supply in July 2009 to present) to eligible enrollees and information on available tobacco cessation medications for callers not eligible for NRT through the QuitLine (NDDoH QuitLine Website, 2011). The QuitNet is a free web-based service available to help North Dakota smokers and spit-tobacco users quit using tobacco.

North Dakota Quitline enrollment increased 80% from July 2009 (N=161 enrollees) to March 2010 (N=289 enrollees). Enrollment numbers dipped in the summer of 2010 and then rebounded to a biennial monthly high of 247 enrollees in January 2011. The pattern of the number of monthly calls tended to mirror the pattern of monthly enrollees in North Dakota (**Figure 27**).

Figure 27. North Dakota Quitline Enrollment and Calls, July 2009-June 2011.



Source: NDDoH Quitline Reports.

Also, the North Dakota Quitline increased its reach of North Dakota smokers from 0.5% in FY2004-2005 to 2.4% in FY2009-2010 (**Table 10**). Reach is defined as the number of persons in a target population who received treatment divided by the total number of persons in the target population (North American Quitline Consortium, 2009; Alere Wellbeing, 2011). North Dakota's yearly gains in reach of North Dakota tobacco smokers meet or exceed the 1-2% annual enrollment among state Quitlines (Cummins et al., 2007).

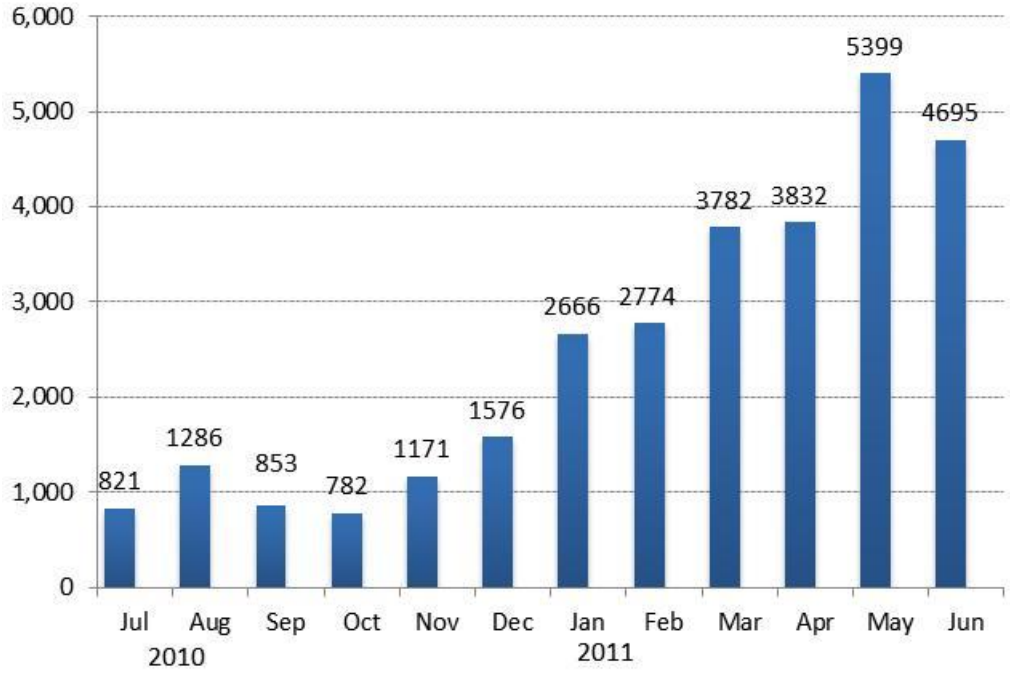
Table 10. Percent of North Dakota Smokers Reached by ND Quitline.

	FY 04-05	**FY 05-06**	**FY 06-07**	**FY 07-08**	**FY 08-09**	**FY 09-10**
ND Smokers	98,225	99,412	97,100	104,475	90,938	94,317
ND Callers	509	1069	911	799	1,511	2,284
% Reached	**0.5%**	**1.1%**	**0.9%**	**0.8%**	**1.7%**	**2.4%**

Source: Alere Wellbeing, 2011.

North Dakota QuitNet service use (i.e., defined as all QuitNet website visits) has increased markedly from July 2010 (N=821 web sessions) to a fiscal year high of 5,399 web sessions in May 2011 (**Figure 28**).

Figure 28. Number of All North Dakota QuitNet Web Sessions, July 2010-June 2011.



Source: North Dakota Department of Health Quitline reports.

Tobacco Consequences in North Dakota

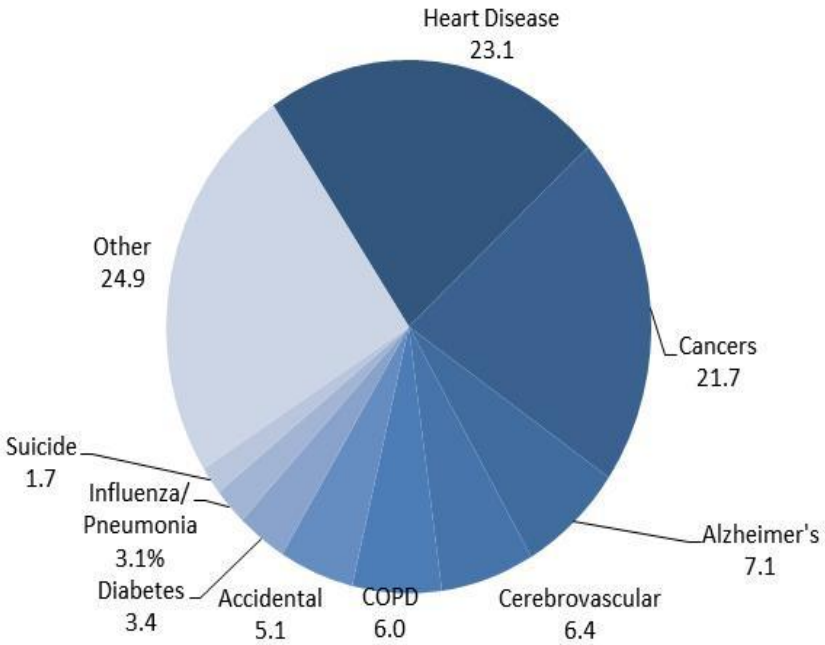
SMOKING AND PREGNANCY

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 (2011), almost one-half (45%) of all North Dakota deaths were the result of heart disease (23.1%) or cancer (21.7%) in 2010 (**Figure 29**). Tobacco use may have contributed to these two major causes of death, as well as other causes such as cerebrovascular (6.4%) and chronic obstructive pulmonary disease (COPD; 6.0%). Tobacco use played a part in the deaths of North Dakotans due to a variety of cancer types, namely lung cancer. One-quarter of all cancer deaths in the state were due to lung cancer, which was caused by tobacco use in 87 percent of the cases (American Cancer Society, 2009). Other cancers linked to tobacco use included oral/pharynx and head/neck.

Figure 29: Causes of Death, Percent, North Dakota 2010



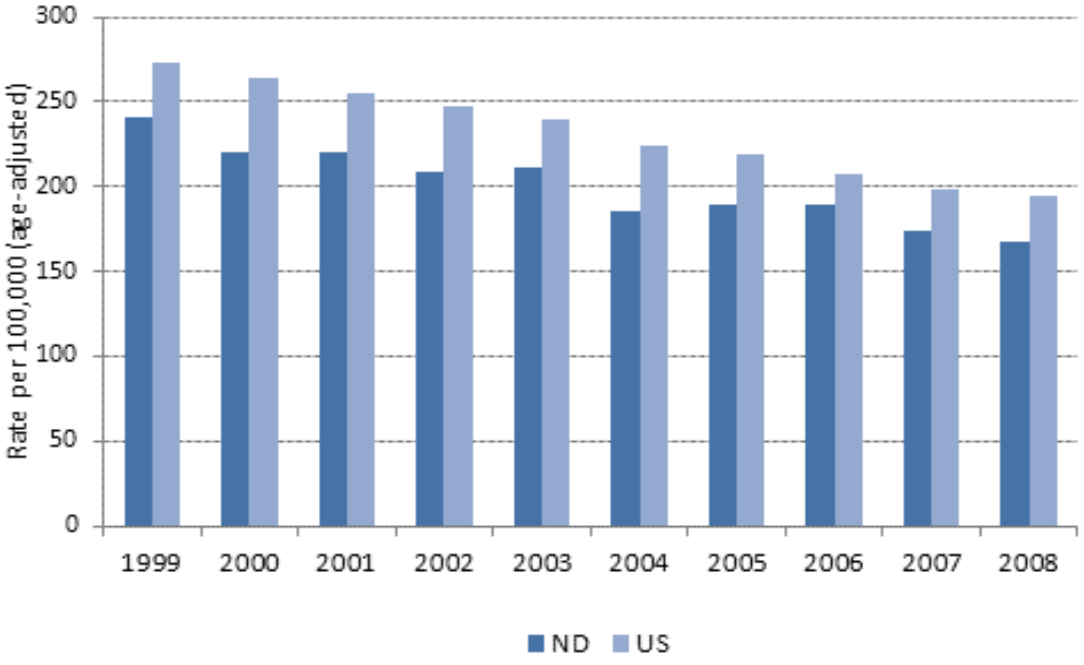
Source: ND Vital Records

North Dakota's lung/bronchus cancer incidence (i.e., new cases or diagnoses) and mortality rates are lower than the U.S. rates across all years. On average, there are an estimated 403 new cases of lung/bronchus cancer each year in North Dakota (North Dakota Cancer Registry, 2010). North Dakota men were much more likely to be diagnosed with and die from lung/bronchus cancer (North Dakota Cancer Registry, 2010; CDC Wonder, 2012). From 1999 through 2008, there was an average of 324 lung/bronchus cancer deaths per year in North Dakota. Concerning age-adjusted rates, North Dakota's lower rates within this time period occurred in 1999 (41.6 per 100,000),2002 (42.7 per 100,000), and 2007 (40.9 per 100,000); its highest rates occurred in 2001 (49.1 per 100,000), 2004 (49.2 per 100,000), and 2006 (48.3 per 100,000). The most recent (2008) lung/bronchus cancer mortality rate for North Dakota is 45.2 per 100,000. By comparison, U.S. lung/bronchus cancer rates have ranged from 51 to 56 deaths per 100,000 during 1999-2008 (CDC Wonder, 2012; ICD-10 Code C34).

Chronic obstructive pulmonary disease (COPD) and emphysema are grave health consequences associated with chronic tobacco use. In the period from 1999 to 2008, North Dakota averaged 295 such deaths per year. North Dakota's age-adjusted COPD/emphysema mortality rate ranged from 33 to 44 deaths per 100,000 population. These rates were generally lower than U.S. figures of 40-45 deaths per 100,000 (CDC Wonder, 2012; ICD-10 Codes J40-47).

Heart disease, the leading cause of mortality in the nation and state, was responsible for approximately 1,684 deaths per year in North Dakota from 1999-2008 **(Figure 30)**. The state's age-adjusted rate, substantially lower than the U.S. rate, has declined from 240 deaths per 100,000 in 1999 to 167 deaths per 100,000 in 2008. The U.S. heart disease mortality rate has also declined from 273 deaths per 100,000 in 1999 to 194 deaths per 100,000 in 2008 (CDC Wonder, 2012; ICD-10 Codes I00-I51).

Figure 30: Heart Disease Mortality, North Dakota and United States



Source: CDC Wonder (2012)

The CDC (2007) developed estimates of smoking-attributable mortality using 2000-2004 data for every U.S. state. North Dakota's smoking-attributable mortality rate of 225.6 deaths per 100,000 population, was ranked 48th (highest) out of 50 states and DC. The state's smoking-attributable mortality rate decreased by 10.9 percent since period of 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).

MARIJUANA USE

In the NSDUH (2008-2009), respondents were asked whether they had used marijuana in the past year. Prevalence for North Dakotans by age group included the following: aged 12 and older (8.3 percent); ages 12-17 (9.4 percent); ages 18-25 (22.9 percent); and ages 26 or older (4.9 percent). These annual marijuana use figures warranted classification into the lowest-ranked U.S. state grouping for each age cohort (SAMHSA, 2011).

Respondents were asked whether they had used marijuana in the past month. Prevalence for North Dakotans by age group included the following: aged 12 and older (4.7 percent); ages 12-17 (5.0 percent); ages 18-25 (10.7 percent); and ages 26 or older (3.3 percent). These recent marijuana use figures warranted classification into the lowest-ranked U.S. state grouping across all age cohorts (SAMHSA, 2011).

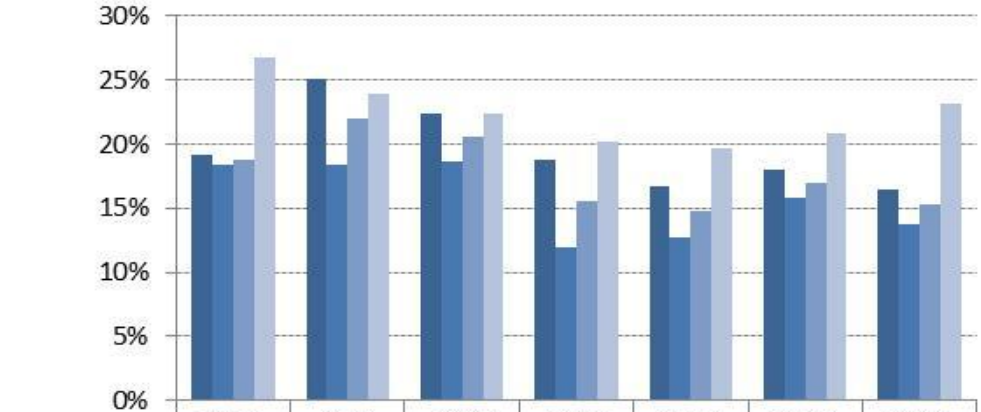
MARIJUANA FIRST USE

The Youth Risk Behavioral Survey indicated that 6.4 percent of North Dakota high school students in 2011 tried marijuana for the first time before the age of 13 years. Comparatively, the U.S. prevalence was 8.1 percent in 2011 and, in fact, the U.S. prevalence was higher than the North Dakota prevalence across all YRBS survey years. North Dakota boys (8.2 percent) were more likely than girls (4.0 percent) to have tried marijuana before age 13 (YRBS, 2011).

RECENT MARIJUANA USE AMONG STUDENTS

The YRBS (2011) found that North Dakota's 15.3 percent prevalence of marijuana use in the past month in 2011 was substantially lower than the 2011 U.S. prevalence of 23.1 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 16.9 percent in 2009. Thus, the 2011 recent marijuana use prevalence among North Dakota high school students represents a small decline from the previous ND YRBS survey **(Figure 31)**.

Figure 31: North Dakota Students, Grades 9-12, Who Used Marijuana One or More Times in the Past 30 Days



	1999	2001	2003	2005	2007	2009	2011
ND Male	19.2%	25.1%	22.4%	18.7%	16.7%	18.0%	16.5%
ND Female	18.4%	18.4%	18.6%	12.0%	12.7%	15.8%	13.7%
ND Total	18.8%	22.0%	20.6%	15.5%	14.8%	16.9%	15.3%
US Total	26.7%	23.9%	22.4%	20.2%	19.7%	20.8%	23.1%

Source: Youth Risk Behavioral Surveillance Survey

In the past ten years, North Dakota boys were consistently more likely than girls to have used marijuana in the past month (YRBS, 2011). From 2007 to 2009, both boys and girls had an increase in recent marijuana use; then in the 2011 YRBS, both genders had a decrease in use.

Regarding North Dakota college students, 11.4 percent indicated using marijuana in the past month in 2005. This prevalence represents a two-fold increase in marijuana use since 1994 (Walton, 2005). In 2008, the 30-day marijuana prevalence for North Dakota college students dropped to 10.9 percent (NDCORE, 2009). Comparatively, the U.S. prevalence figure for marijuana use in the past month was 16.7 percent in 2005 and 16.8 percent in 2006 (Core Institute, 2009). In 2010, the prevalence of recent marijuana use among North Dakota college students rose to 12.8 percent (ND University System, 2011; comparatively, this figure is below the 2009 national benchmark of 17.2 percent.

ATTITUDES TOWARD MARIJUANA SMOKING

The NSDUH (2008-2009) polled respondents about whether they agreed that smoking marijuana once a month posed a “great risk” to one’s health. North Dakotans were found to agree with “great health risks to marijuana smoking” at moderate levels relative to other states. To illustrate, North Dakotans age 12 and older were categorized in the third-highest ranked grouping of U.S. states with a prevalence of 35.9 percent (SAMHSA, 2011). State residents aged 12-17 years were classified in the second-highest ranked grouping of U.S. states with a prevalence of 36.1 percent. North Dakotans aged 18-25 years were placed in the third-highest ranked grouping with a prevalence of 20.6 percent. Finally, state residents aged 26 years and older were categorized in the second-highest ranked grouping of U.S. states with 39.3 percent (SAMHSA, 2011). NSDUH trend data indicate that North Dakotans are increasingly becoming more aware of the harmful effects of marijuana use.

In the North Dakota Community Readiness Survey (2008), community members and key informants from urban, rural, and frontier areas were asked to assess the magnitude of (a) adult and (b) youth use of marijuana in their own community. Regarding adult marijuana use, 11.2 percent of community members and 18.5 percent of key informants characterized it as a "serious problem" (Table 11). Additionally, 41.8 and 64.6 percent of community members and key informants indicated that adult marijuana use was a minor/moderate problem in their communities. Finally, 34.0 and 12.8 percent of community members and key informants indicated they did not know if adult marijuana use was a problem in their community (Hair et al., 2008).

Regarding youth marijuana use, 18.9 percent of community members and 32.4 percent of key informants characterized it as a "serious problem" (Table 12). Additionally, 39.6 and 53.8 percent of community members and key informants indicated that youth marijuana use was a minor or moderate problem in their communities. Finally, 31.3 and 10.5 percent of community members and key informants indicated they did not know if youth marijuana use was a problem in their community. By geographic area, survey respondents from urban areas were more likely than respondents from rural or frontier areas to characterize both adult and youth marijuana use in their communities as a serious problem (Hair et al., 2008).

Table 11. Perceptions of Marijuana Use among Adults in their North Dakota Community.

		Minor/ moderate problem (%)	Serious problem (%)	Don't know (%)
Community Members	Urban	47.9	14.4	29.8
	Rural	38	9.1	37.3
	Frontier	38.6	9.6	35.6
	Comm. Member Total	41.8	11.2	34
Key Informants	Urban	64.9	19.7	12.9
	Rural	62.7	20.5	12
	Frontier	64.9	13.2	13.2
	Key Informant Total	64.6	18.5	12.8
Overall Total		46.4	12.7	29.7

Source: Hair et al. (2008)

Table 12. Perceptions of Marijuana Use among Youth in their North Dakota Community.

		Minor/ moderate problem (%)	Serious problem (%)	Don't know (%)
Community Members	Urban	41.7	26.7	26
	Rural	37.4	15	35
	Frontier	39.3	13.8	33.7
	Comm. Member Total	39.6	18.9	31.3
Key Informants	Urban	52	37.4	8.3
	Rural	56.6	28.9	9.6
	Frontier	57.9	17.5	18.4
	Key Informant Total	53.8	32.4	10.5
Overall Total		42.5	21.6	27.1

ILLICIT DRUG USE OTHER THAN MARIJUANA

Respondents were asked whether they had used any illegal drug other than marijuana in the past month. Prevalence for North Dakotans by age group included the following: aged 12 and older (2.1 percent); ages 12-17 (3.7 percent); ages 18-25 (5.0 percent); and ages 26 or older (1.3 percent). These figures warranted classification into the lowest-ranked U.S. state grouping for each age cohort (SAMHSA, 2011).

RECENT ILLICIT DRUG USE

In the NSDUH (2008-2009), respondents are asked whether they had used any illicit drug in the past 30 days. Prevalence for North Dakotans by age group included the following: aged 12 and older (5.6 percent); ages 12-17 (7.7 percent); ages 18-25 (12.6 percent); and ages 26 or older (3.8 percent). These recent illicit drug use figures warranted classification into the lowest-ranked U.S. state grouping across all age cohorts (SAMHSA, 2011).

The North Dakota Core Survey, conducted in 2006 and 2008, asked college students how often they had used an illicit drug in the past 30 days (Walton, 2005; NDCORE, 2009). Findings indicated that North Dakota college students consumed illicit drugs at prevalence that were mostly lower than the National college student prevalence for 2006. The North Dakota (2008) and U.S. (2006)

prevalence for each of the following drugs were as follows: amphetamines (1.4 percent vs. 3.1 percent); cocaine (0.7 percent vs. 2.2 percent); sedatives (0.7 percent vs. 2.0 percent); hallucinogens (0.6 percent vs. 1.1 percent); designer drugs (1.0 percent vs. 0.9 percent); opiates (0.4 percent vs. 0.6 percent); inhalants (0.4 percent vs. 0.5 percent); steroids (0.4 percent vs. 0.4 percent); other (0.5 percent vs. 0.8 percent) (NDCORE, 2009; Core Institute, 2009).Figures from the 2008 NDCORE survey were notably lower than those from the year 2006, with the only increase in use of designer drugs (NDCORE, 2009). Results from the 2010 ND CORE survey indicated that recent use of illicit drugs were highly similar to the 2008 state results across all drug types (ND University System, 2011). Compared to the 2009 national CORE benchmarks for recent illicit drug use, North Dakota's 2010 prevalence figures were lower across every drug type.

COCAINE USE IN PAST YEAR

In the NSDUH (2008-2009), 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 with a prevalence of 1.2 percent (SAMHSA, 2011). North Dakotans aged 12-17 were categorized in the third-highest ranked grouping of U.S. states with a prevalence of 1.1 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states, which had an annual cocaine use prevalence of 3.7 percent. Finally, North Dakota residents aged 26 years and older were also classified in the lowest-ranked grouping of U.S. states with a cocaine use prevalence of 1.2 percent (SAMHSA, 2011).

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 2011, 6.0 percent of North Dakota students, compared to 6.8 percent of U.S. students, indicated they had used cocaine at least once in their lives (YRBS, 2011). From 1995 to 2011, the U.S. prevalence for student cocaine use was higher than the North Dakota prevalence for seven of these eight YRBS years. In 2003, North Dakota's prevalence of 9.7 percent was higher than the U.S. prevalence of 8.7 percent. Across all YRBS years, boys were more likely than girls to have tried cocaine at least once in the lifetime (YRBS, 2011).

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, 11.6 percent indicated using inhalants one or more times during their lives in 2011 compared to 11.4 percent of 2011 U.S. high school students (YRBS, 2011). From 1999 to 2003, prevalence declined for both North Dakota (15.5% down to 10.7%) and the U.S. (14.6% down to 12.1%). From 2003 to 2011, North Dakota's lifetime inhalant use increased slightly from 10.7 percent to 11.6 percent. In the U.S. this prevalence increased slightly from 12.1 percent in 2003 to 13.3 percent in 2007 and then has dropped to 11.7 percent in 2009 and 11.4 percent in 2011. North Dakota girls had a higher inhalant use prevalence than for boys in 2005 through 2011 and boys had a higher prevalence than girls in 2003 (YRBS, 2011).

LIFETIME HEROIN USE AMONG STUDENTS

Heroin is a very powerful and lethal drug, especially in the hands of juveniles. The Youth Risk Behavioral Survey inquires about the use of heroin but the data are somewhat limited for North Dakota. In 1999, 2.8 percent of North Dakota high school students and 2.4 percent of U.S. students had used it one or more times during their lives (YRBS, 1999). In 2001, 3.4 percent of North Dakota high school students and 3.1 percent of U.S. high school students had used heroin at least once. Finally, in 2007, the North Dakota and U.S. prevalence dropped to 2.4 percent and 2.3 percent, respectively. North Dakota boys were more likely than girls to have tried this drug (YRBS, 2007). No heroin information was available in the 2011 North Dakota YRBS.

LIFETIME METH USE AMONG STUDENTS

Methamphetamine, one of the nation's most dangerous illicit drugs, is highly toxic and addictive (Office of National Drug Control Policy, 2008). Use of this drug is escalating, especially in rural areas and among populations not previously known to use illicit drugs (RAC, 2008). The production of methamphetamine can be conducted anywhere such as rural farmhouses, apartments, suburban areas, garages, motels, warehouses, and rental storage spaces (ONDCP, 2008). In 2009, 3.4 percent of North Dakota high school students had tried meth at least once, compared to 4.1 percent of 2009 U.S. high school students. North Dakota's use prevalence for 2009 was one-third of the state's 1999 prevalence of 10.5 percent (YRBS, 2009). Thus, the state has experienced a decline in youth use of this illegal substance over time. Boys were more likely than girls to have used meth at least once during 2001, 2003, 2005, 2007 and 2009. However, girls (11.7 percent) were more likely than boys (9.4 percent) to have used meth in 1999 (YRBS, 2009). No meth information was available in the 2011 North Dakota YRBS.

LIFETIME ECSTASY USE AMONG STUDENTS

Ecstasy is an illegal drug used as a stimulant and as a means to relax one's inhibitions. Among North Dakota high school students, 6.4 percent (2003), 4.3 percent (2005), 4.4 percent (2007) and 5.3 percent (2009) indicated having used ecstasy at least once in their lives. Comparatively, U.S. high school students used the drug at a prevalence of 11.1 percent (2003), 6.3 percent (2005), 5.8 percent (2007), and 6.7 percent (2009), figures that are all higher than the corresponding prevalence estimates for North Dakota high school students. North Dakota boys were more likely than girls to have tried ecstasy at least once (YRBS, 2009). No ecstasy information was available in the 2011 North Dakota YRBS.

LIFETIME STEROID USE AMONG STUDENTS

Illegal use of non-prescribed, anabolic steroids is popular among some persons for its ability to add muscle bulk and increase endurance among athletes. These steroids can take the form of pills or injections and can be quite dangerous to one's health and well-being. Across five different years of Youth Risk Behavioral Survey data, North Dakota's steroid prevalence rates among high school students decreased from 4.7 percent in 1995 to 3.0 percent in 2005 to 2.6 percent in 2007 and then increased slightly to 2.9 percent in 2011. Steroid use prevalence for U.S. high school students spanned from 3.7 percent in 1995 to 6.1 percent in 2003 to 4.0 percent in 2005 to 3.9 percent in 2007 to 3.3 percent in 2009 and to 3.6 percent in 2011. North Dakota high school boys were more likely than girls to have used non-prescribed steroids in 2011 (YRBS, 2011).

LIFETIME INTRAVENOUS DRUG USE AMONG STUDENTS

According to the 2011 Youth Risk Behavioral Survey, 2.0 percent of North Dakota high school students and 2.3 percent of U.S. high school students had used illegal drug injections at least once. North Dakota boys and girls were roughly equally to have used illegal injections at least one time in their lifetime in 2011 (YRBS, 2011).

PAINKILLER USE

During 2008-2009, 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 with a prevalence of 3.9 percent (SAMHSA, 2011). North Dakotans aged 12-17 were categorized in the fourth highest-ranked grouping of U.S. states with a prevalence of 6.2 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states with a painkiller use prevalence of 9.4 percent. Finally, North Dakota residents aged 26 years and older were also classified in the fourth-highest ranked grouping of U.S. states, which had painkiller use prevalence ranging from 2.4 percent (SAMHSA, 2011).

LIFETIME PRESCRIPTION DRUG MISUSE AMONG STUDENTS

According to the 2011 Youth Risk Behavioral Survey, 16.2 percent of North Dakota high school students and 20.7 percent of U.S. high school students had used prescription drugs without a doctor's prescription at least once in their lifetime. North Dakota boys and girls were roughly equally to have misused prescription drugs at least one time in their lifetime in 2011 (YRBS, 2011).

LIFETIME OVER-THE-COUNTER DRUG MISUSE AMONG STUDENTS

In 2011, 11.2 percent of high school students in North Dakota indicated they had taken over-the-counter drugs to get high one or more times during their life (ND YRBS, 2011). By gender, boys had a slightly higher prevalence than girls for misuse of over the counter drugs at least once in their life. The 2011 aggregate prevalence reflects a slight decrease since 2009 when 13.3 percent of North Dakota high school students indicated using over the counter drugs to get high at least once in their life.

DRUGS ON SCHOOL PROPERTY

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 2011, 3.8 percent of North Dakota high school students, compared to 5.9 percent of U.S. high school students 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 2011, with the exception of 2007 when the prevalence was 2.7 percent. The U.S. prevalence has steadily declined over time from 1995 to 2009 (8.8% down to 4.6%), but jumped back up to 5.9 percent in 2011 (YRBS, 2011).

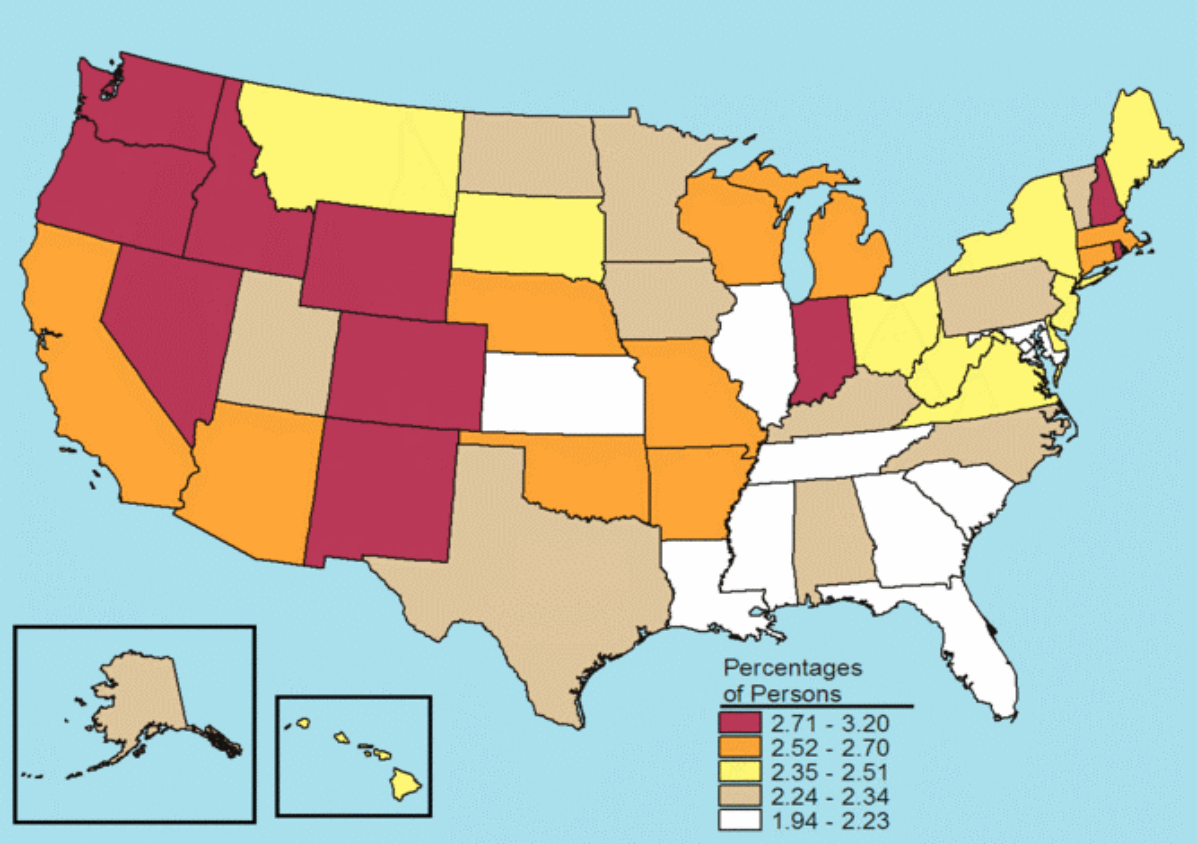
About one-fifth of North Dakota high school students (20.8 percent in 2011) and one-fourth of U.S. high school students (25.6 percent in 2011) indicated they were offered, sold, or given an illegal

drug on school property during the past year. For both North Dakota and the U.S., prevalence has declined steadily over time to their lowest levels in 2007 (18.7%) but increased in 2009 and 2011 (note: North Dakota's prevalence was 19.5% in 2009 and 20.8% in 2011). By gender, North Dakota boys were slightly more likely than girls to have engaged in this drug-related behavior on school property in 2011 (YRBS, 2011).

DRUG DEPENDENCE OR ABUSE

NSDUH respondents (2008-2009) 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, with a prevalence of 2.2 percent (SAMHSA, 2011). North Dakotans aged 12-17, categorized in the fourth highest-ranked grouping of U.S. states, had a prevalence of 4.3 percent. North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states which had dependence/abuse prevalence of 6.2 percent. Finally, North Dakota residents aged 26 years and older were also classified in the lowest-ranked grouping of U.S. states with a dependence/abuse prevalence of 1.1 percent (SAMHSA, 2011).
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 at 1.5% which warranted classification into the lowest-ranked U.S. state grouping (SAMHSA, 2011). North Dakotans aged 12-17 were categorized in the fourth-highest ranked grouping of U.S. states with a prevalence of 2.3 percent **(Figure 32)**.

Figure 32: Illicit Drug Dependence in Past Year, Ages 12-17, 2008-2009



Source: SAMHSA, Office of Applied Studies, National Survey on Drug use and Health, 2008 and 2009.
NOTE: Any illicit drug includes marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used nonmedically.

North Dakotans aged 18-25 years were classified in the lowest-ranked grouping of U.S. states, with a dependence prevalence of 4.1 percent. Similarly, North Dakota residents aged 26 years and older were classified in the lowest-ranked grouping of U.S. states with a dependence prevalence of 0.8 percent (SAMHSA, 2011).

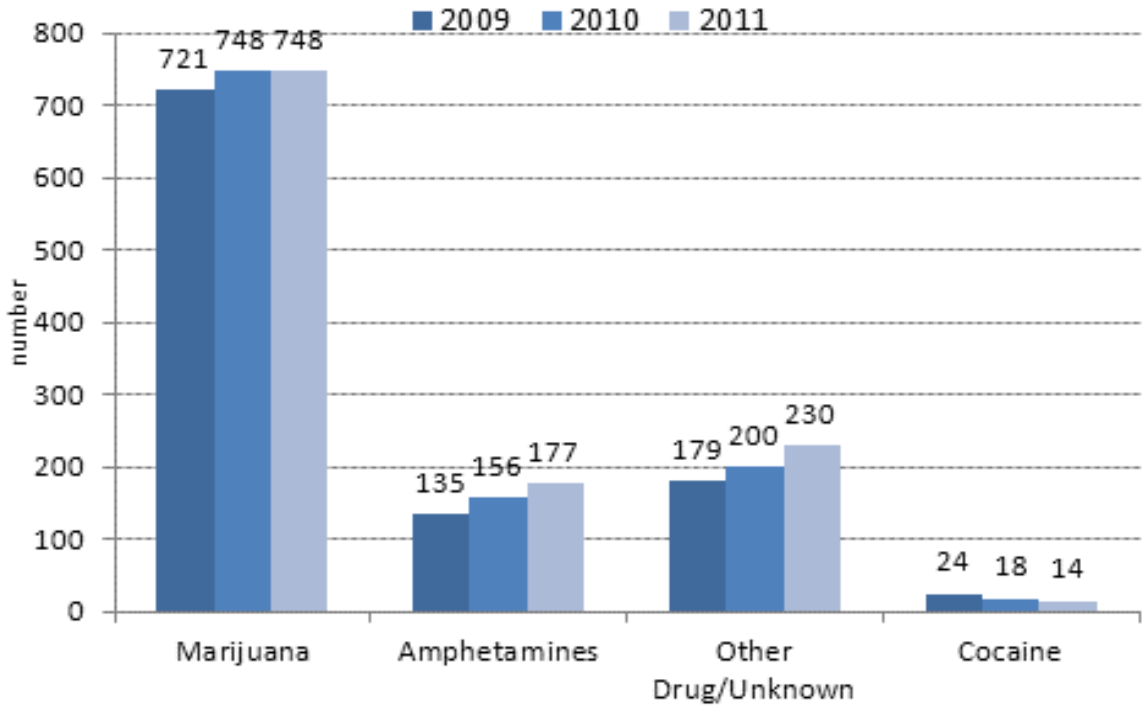
NEEDING TREATMENT BUT NOT RECEIVING IT

In the NSDUH (2008-2009), respondents were asked whether they needed illicit drug treatment but did not receive it in the past year. Prevalence for North Dakotans by age group included the following: aged 12 and older (2.1 percent); ages 12-17 (3.7 percent); ages 18-25 (5.7%); and ages 26 or older (1.0 percent). These figures warranted classification into the lowest-ranked U.S. state grouping for each age cohort (SAMHSA, 2011).

GETTING DRUG TREATMENT

According to the Treatment Episode Data Set (TEDS), marijuana (748 admissions) was the most commonly abused drug for which people sought professional outpatient treatment in North Dakota in 2011; this figure was up slightly from 721 marijuana outpatient admissions in 2009 (**Figure 33**).

Figure 33: Illicit Drug Treatment Admissions, North Dakota, 2009-2011



Source: Treatment Episode Data Set

Persons receiving treatment for amphetamine addiction increased in numbers from 135 in 2009 to 177 in 2011 in North Dakota. Among the other drug-related treatment admissions, admissions increased from 179 in 2009 to 230 in 2011. Cocaine admissions decreased from 24 in 2009 to 14 in 2011 (TEDS, 2011).

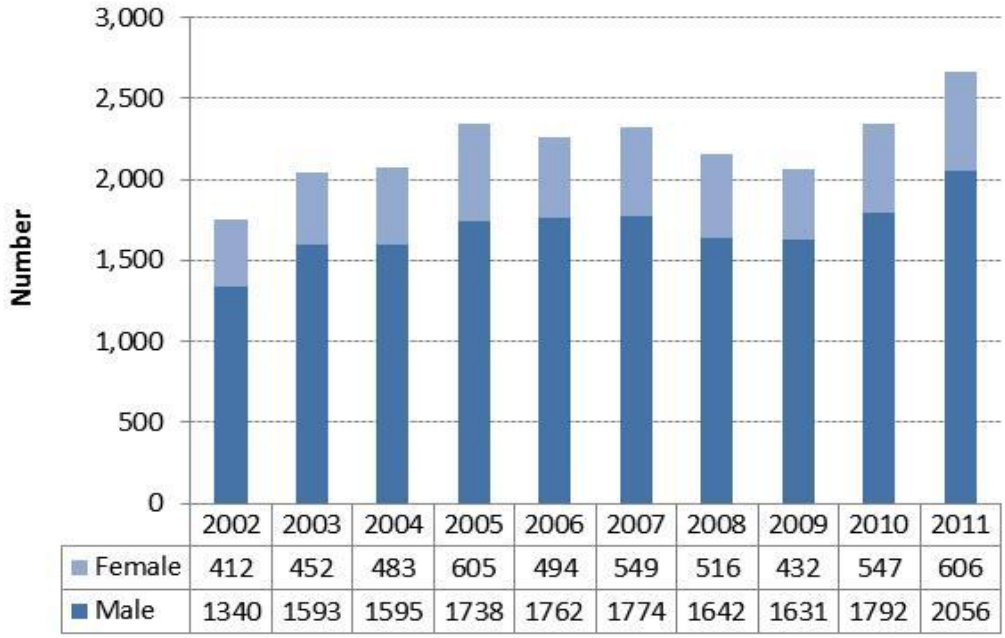
By demographics, males comprised 66.7 percent of marijuana admissions and 43.5 percent of amphetamine admissions in North Dakota in 2011. Whites comprised 72.1 percent of marijuana admissions and 83.1 percent of amphetamine admissions. American Indians, totaling about 5

percent of the state's population, comprised 21.3 percent of the marijuana admissions and 14.1 percent of the amphetamine admissions in 2011. Marijuana clearly is a teen problem, as those aged 12-17 years comprised 24.2 percent (i.e., the largest share) of marijuana admissions in 2011. For amphetamines, admitted persons in North Dakota were most commonly aged 25 to 29 years (29.9 percent). In comparing North Dakota and U.S. illicit drug treatment admission rates per 100,000 population in 2009, North Dakota had lower rates for marijuana (115 vs. 135), amphetamines (20 vs. 48), and cocaine (smoked; 15 vs. 53) (TEDS, 2009). When comparing North Dakota's 2007 and 2009 treatment admission rates per 100,000 population, the 2009 rates were higher for marijuana, lower for amphetamines, and equivalent for cocaine (smoked).

DRUG ARRESTS

In North Dakota, drug arrests in 2011 have increased 52 percent since 2002 and 14 percent from the previous year (**Figure 34**).

Figure 34: Drug Arrests by Gender, North Dakota

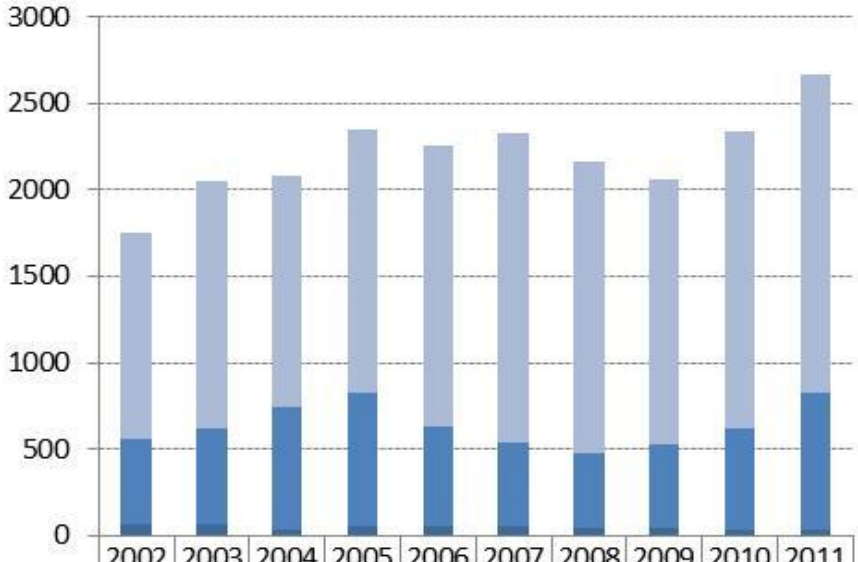


	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Female	412	452	483	605	494	549	516	432	547	606
Male	1340	1593	1595	1738	1762	1774	1642	1631	1792	2056

Source; ND Office of Attorney General, BCI, 2012

Drug arrests increased from 2010 to 2011 for both males (15 percent) and females (11 percent). Regarding drug arrests by type, marijuana remains the number one drug with 2011 arrests increasing by 54 percent since 2002 and 7 percent from the previous year. Arrests for “other drugs and narcotics,” including amphetamines, steadily increased through 2005, but has substantially dropped off in 2006 through 2008; however, these arrests have increased 84 percent from 2008 to 2011 (ND OAG, 2012) **(Figure 35)**.

Figure 35: Drug Arrests by Type of Drug, North Dakota

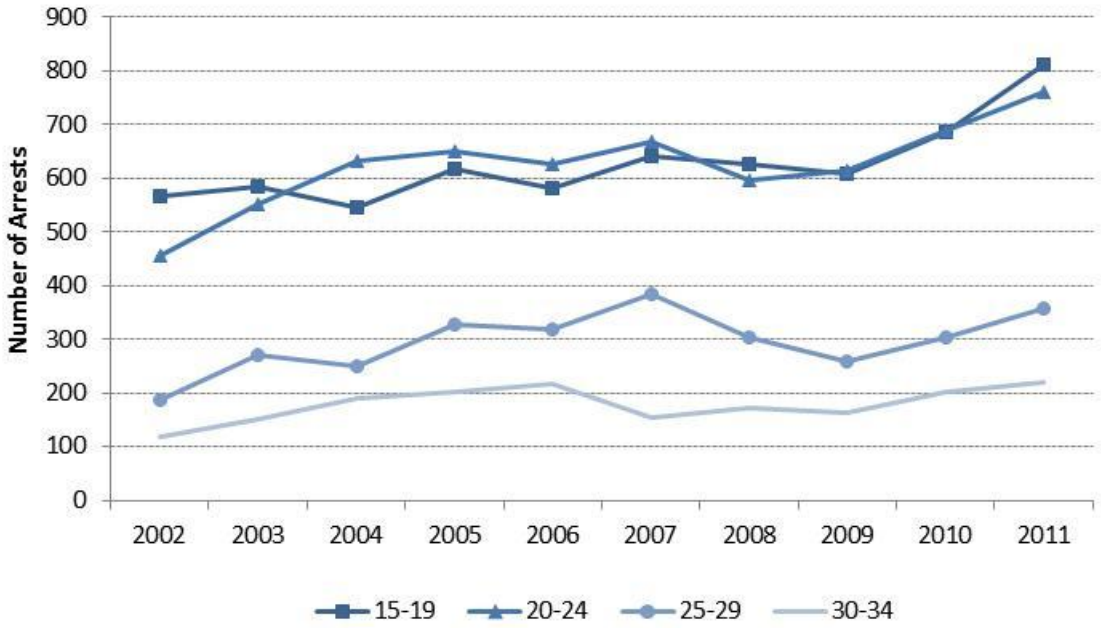


	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Marijuana	1189	1428	1333	1516	1621	1783	1681	1533	1722	1837
Other Drugs or Narcotics	502	555	707	774	582	490	428	486	588	788
Opiates, Cocaine	61	62	38	53	53	50	49	44	29	37

Source: ND Office of the Attorney General, BCI, 2012
NOTE: Meth is included in the ‘Other Drugs’ category.

Regarding drug arrests in North Dakota, persons aged 15 to 24 years accounted for 59 percent of arrests in 2011. Large percentage increases in arrests were noted since 2002 for persons aged 15 to 34 years (**Figure 36**; ND OAG, 2012).

Figure 36: Drug Arrests by High-Risk Age Groups, North Dakota

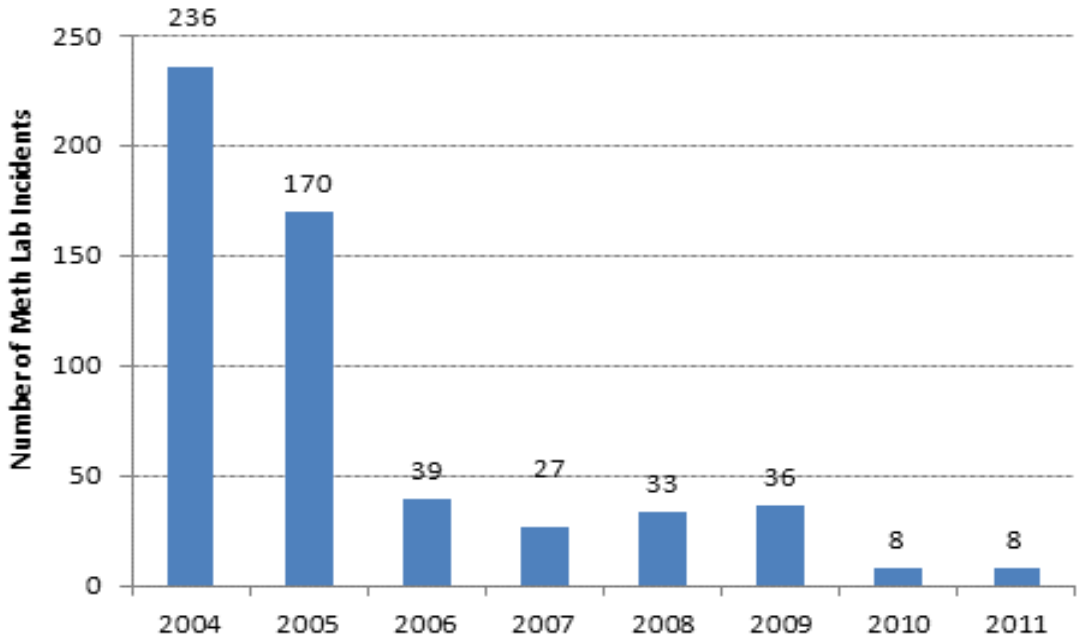


Source: ND Office of Attorney General, BCI, 2012

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

According to the U.S. Drug Enforcement Administration (2012), there were 10,287 meth lab incidents in the U.S. in 2011, up from 8,181 in 2006. According to the DEA, the number of meth lab incidents in North Dakota has decreased over time from 236 in 2004 to 8 in 2011 **(Figure 37)**.

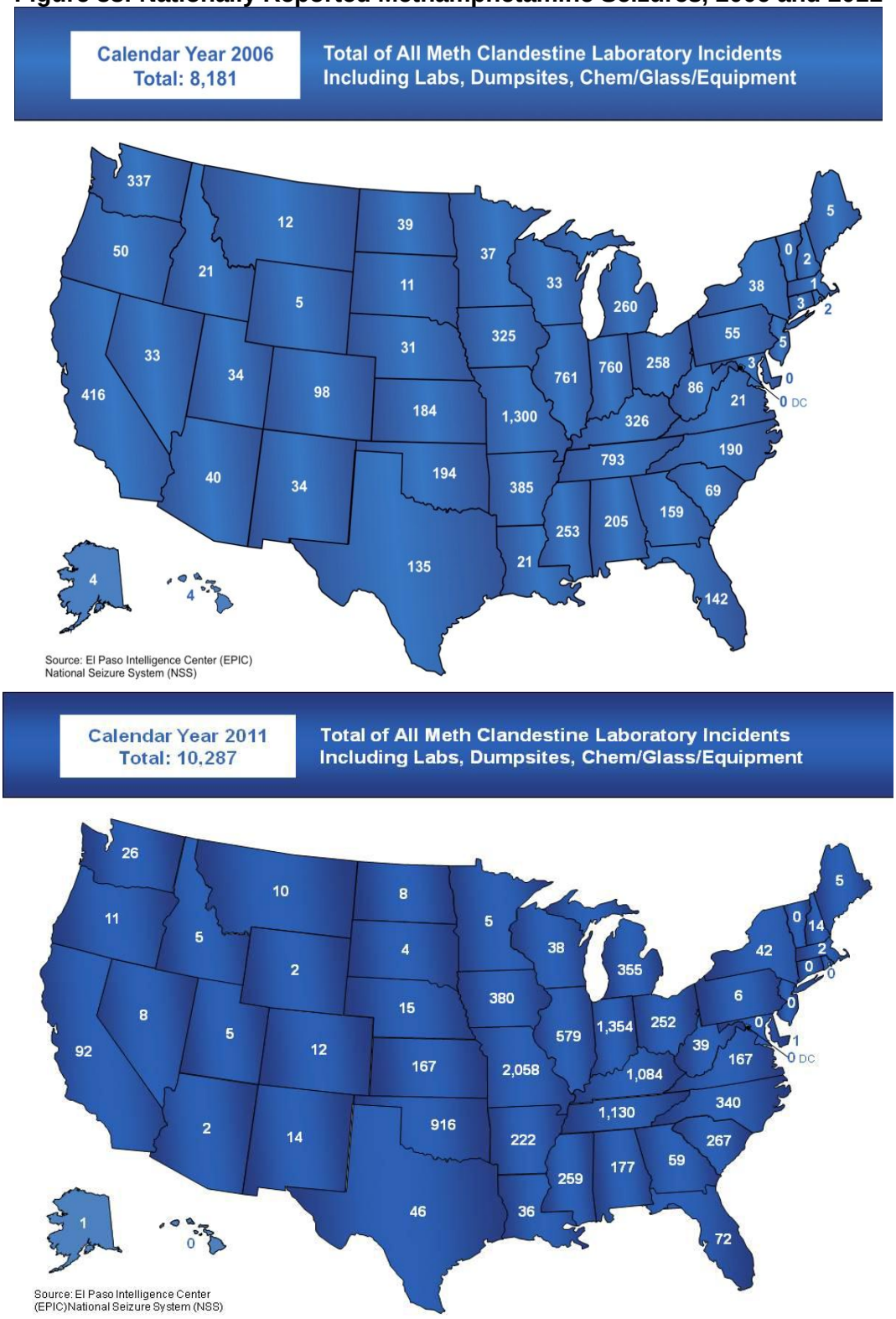
Figure 37: Methamphetamine Lab Incidents, North Dakota



Source: U.S. Drug Enforcement Administration (2012);
http://www.justice.gov/dea/concern/map_lab_seizures.html

Clandestine meth lab seizures included laboratories, manufacture chemicals only, manufacture equipment only, or dumpsites (DEA, 2005). **Figure 38** depicts the dramatic decline in the number of meth lab seizures for North Dakota and the changes that occurred in all other states from 2006 to 2011. 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 38: Nationally Reported Methamphetamine Seizures, 2006 and 2011



Source: U.S. Drug Enforcement Administration (2012);
http://www.justice.gov/dea/concern/map_lab_seizures.html

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Appendix A: Charter

North Dakota
State Epidemiological Outcomes Workgroup
CHARTER (Updated March 2010)

OVERVIEW OF THE SEOW

Mission:

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

Principles of the SEOW:

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

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

Functions of the SEOW:

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

Organizational Overview:

Lead Agency:

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

Structure:

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

Data Collection:

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

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

Time Frames for SEOW Work Completion:

ND SEOW Contract Initiated November, 2011

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

SEOW Members:

Contractual and Division Staff:

SEOW Project Director
Don Wright
Asst. Director of Division of Substance Abuse & Mental Health Services
5% FTE
Responsibilities:

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

Internal Research Consultant
Elizabeth Cunningham
Research Analyst, ND Department of Human Services
Responsibilities:

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

Project Staff
Pamela Sagness
Prevention Administrator, Division of Substance Abuse & Mental Health Services
10% FTE
Responsibilities:

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

SEOW Epidemiologist:

Dr. Kyle Muus
Center for Rural Health, University of North Dakota
40% FTE
Responsibilities:

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

Workgroup Members:

Workgroup members participate in the scheduled meetings of the SEOW.

Their responsibilities include:

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

Appendix B: North Dakota SEOW Committee Members

As of July 2012

Name	Title	Organization
Coby Rabbithead	Tribal Prevention Coordinator	Boys & Girls Club of the Three Affiliated Tribes
Kyle Muus	Epidemiologist	Center for Rural Health, University of North Dakota
Melanie Flynn	Licensed Addiction Counselor	Department of Corrections & Rehabilitation
Patrick Foley	Director of Research	Department of Corrections & Rehabilitation
Alice Musumba	BRFSS Director/Senior Epidemiologist	Department of Health
Becky Bailey	Director - Coordinated School Health	Department of Health
Clint Boots	Tobacco Data Analyst	Department of Health
Devaiah Muccatira	Research Analyst - FAS	Department of Health
Diana Read	Injury/Violence Program Director	Department of Health
Dr. Terry Dwelle	State Health Officer	Department of Health
Gregg Reed	Epidemiologist - Family Health	Department of Health
Neil Charvat	Tobacco Outreach Coordinator	Department of Health
Stephen Pickard M.D.	Research Epi Center Director	Department of Health
Amber Jensen	Prevention Media Specialist	Department of Human Services
Crystal Kraft	Community Prevention Specialist	Department of Human Services
Elizabeth Cunningham	Prevention Research Analyst	Department of Human Services
Jessica Brewster	Prevention Specialist	Department of Human Services
Laura Anderson	PRMC Administrator	Department of Human Services
Pamela Sagness	Prevention Administrator	Department of Human Services
Patrick Joyce	Prevention Specialist	Department of Human Services
Rachelle Loda	Prevention Education Specialist	Department of Human Services
Susan Wagner	Program Administrator	Department of Human Services
Thomas Volk	Community Prevention Specialist	Department of Human Services
Charles Kessler	Coordinated School Health Program Administrator	Department of Public Instruction
Dr. Wayne Sanstead	State Superintendent	Department of Public Instruction
Valerie Fischer	Director Adult Education & School Health	Department of Public Instruction
Chad Ihla	Analyst	Department of Transportation
Karin Mongeon	Traffic Safety Manager	Department of Transportation
Lynn Heinert	Program Manager	Department of Transportation
Col. James Prochniak	Superintendent	Highway Patrol
Elizabeth Johnson	Research Analyst	Highway Patrol
Darin Anderson	IT Website Project Manager	Information Technology Department
Susan Helgeland	Executive Director	Mental Health America
Deb Gebeke	Assistant Director	NDSU Extension

Elizabeth Erichsen	SPF SIG Co-Principle Investigator	North Dakota State University
Jane Vangsness Frisch	Higher Education Consortium Director	North Dakota University System
Lee Erickson	Director	Northern Lights SADD
Colleen Weltz	Analyst	Office of the Attorney General
Kathy Strombeck	Analyst	Office of the State Tax Commissioner
Lisa Burdick	Tribal Prevention Coordinator	Spirit Lake Sioux Tribe
Deanne Bear Catches	Tribal Prevention Coordinator	Standing Rock Sioux Tribe
Jackie Giron	Tobacco Prevention Coordinator	Turtle Mountain Band of Chippewa Indians
Marianne Young Eagle	Public Health	Turtle Mountain Band of Chippewa Indians
Dave Garcia	Tribal Prevention Coordinator	Turtle Mountain Community College
Eric Canen	SPF SIG Co-Principle Investigator	University of Wyoming

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; ND Office of the State Tax Commissioner	1990-2011	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	1999-2010	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	1990-2008	Joyce Sayler and Marlys Knell, 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	2003-2010	Richard Rathge, Executive Director, ND KIDS COUNT	http://www.ndkidscount.org/
CORE Survey	Survey conducted periodically with ND college students	NDCSAP	1994, 2003-5, 2006, 2008, 2010	Jane Vangsness-Frisch, Ericka Wentz, ND HECSAP	http://www.ndus.edu/system/consortium-for-substance-abuse-prevention/ http://core.siu.edu/
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	1995-2010	Lynn Heinert, ND DOT	http://www.dot.nd.gov/
MVCs	Number of annually reported ND MVCs with alcohol involvement; BAC	ND DOT; FARS	2001-2010	Chad Ihla and 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	2007-2009	Don Wright, ND DHS	http://oas.samhsa.gov/
ND Criminal Offender and Crime Reporting	Number of offenses and reported crimes in ND	ND OAG, BCI	1999-2011	Colleen Weltz, ND OAG, BCI	http://www.ag.state.nd.us/ *http://www.ag.state.nd.us/Reports/BCIReports/CrimeHomicide/Crime11.pdf*
ND Council on Abused Women's Services	Number of domestic violence and sexual assault incidents/ victims	ND CAWS			http://www.ndcaws.org/
ND Kids Count	Number of suspected child abuse incidents/ victims	ND Kids Count		Polly Fassinger, Director	http://www.ndkidscount.org/
DUI convictions	Number of total DUI convictions by year	ND Supreme Court	2008-2011	Mike Sampson, Programmer Analyst	
Substance-related school suspensions and expulsions	Number and type of substance related incidents resulting in school suspension or expulsion	ND DPI	2006-2010		

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; substance-related crimes committed; inmates that are in substance treatment	ND DoCR	2009-2011	Patrick Foley and Melanie Flynn, NDDOCR	http://www.state.nd.us/docr/
ND Quitline/Net	Number of persons using the ND Quitline/Net Service	NDDoH	2010-2011	Michelle Walker, NDDoH	www.nd.quitnet.com
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	2008-2011	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	Substance abuse treatment patients	SAMHSA	2009-2011	Don Wright and Myrna Bala, ND DHS	http://www.dasis.samhsa.gov/webt/New Mapv1.htm
Vital Statistics, ND vs. US	Substance-related mortality incidence and rates	ND DVR; NCHS	2000-2009	Carmell Barth, ND DoH, DVR	http://wonder.cdc.gov/
YRBS	State survey conducted every 2 years for students, grades 9-12	CDC; ND DPI	1995-2011	Chuck Kessler, ND DPI	http://www.cdc.gov/healthyyouth/yrbs/index.htm
Adult Tobacco Survey; Youth Tobacco Survey	State survey every 2 years for ND adults; survey every 2 years, students, grades 9-12	ND Department of Health	2003-2009	Clint Boots, Data Analyst	http://www.ndhealth.gov/tobacco/

Appendix D: Needed Data to Address Gaps

Data Needs	Description	Benefits to the State	Barriers to Fruition
Statewide Hospital Discharge Database	All hospitals in the state submit electronic copies of their patient information on an annual basis; standardized data fields; data stored in a centralized location and routinely utilized for health research purposes	Derive incidence rates for ATOD-related health conditions; Monitor emergency room use for ATOD-related health concerns	Cost; public unawareness of its need; hesitation from hospitals regarding confidentiality issues
BRFSS at the regional and county levels	Specific BRFSS survey methods are used to derive valid estimates for state regions and counties	Sub-state analysis of substance use and consequences among adults by geographic region	Cost; Low population in state's rural areas
YRBS at the county level	Specific YRBS survey methods are used to derive valid estimates for 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 regional (i.e., eight) 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
New North Dakota Community Readiness survey data	Most recent data are from 2008	Assess changes in survey responses over time by state, region, and rural/urban area	Cost