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Montana's Comprehensive Needs Assessment for Substance Abuse Prevention

**Report for the Strategic Prevention
Framework State Incentive Grant
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Based on the work of
Montana's State Epidemiological Workgroup

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INTRODUCTION

In 2006, the Office of Governor Schweitzer directed the Addictive and Mental Disorders Division (AMDD) to begin working on the **Strategic Prevention Framework State Incentive Grant (SPF SIG)** from the Substance Abuse and Mental Health Services Administration's (SAMHSA) Center for Substance Abuse Prevention (CSAP). Under the guidance of SPF SIG, AMDD established a State Epidemiological Workgroup (SEW) in January 2007.

In June 2007, the SEW submitted its first Comprehensive Needs Assessment for Substance Abuse Prevention. The purpose of the report was to inform the Governor's Office and the Montana State Workgroup for Substance Abuse Prevention of the findings, which included documentation of the needs assessment process, priority consumption and consequence areas, and recommendations on targets for the Strategic Prevention Framework State Incentive Grant (SPF SIG). That report was used as a starting point for the Workgroup's creation of the SPF SIG State Strategic Plan leading to decisions on how to allocate SPF SIG funding to Montana communities.

This updated Needs Assessment for Substance Abuse Prevention will review data used in the 2007 report and compare it to the most recent data available. It will, however, go beyond the scope of the original report to reflect additional research and analysis undertaken by Montana's SEW to expand our understanding of Montana's priority problems. Additional data sources have been reviewed and data sources used in the first needs assessment have been analyzed in new and creative ways. See Appendix B for a listing of data sources.

Montana Context

Montana is the fourth largest state in the United States encompassing 145,552 square miles. The state has 56 counties ranging in size from 719 square miles to 5,529 square miles; 46 counties are considered frontier, eight are considered rural, and two are considered urban. There are seven American Indian Reservations and 11 American Indian tribes occupying 8.4 million acres. All but two reservations are located in eastern Montana. According to the 2008 update of the 2000 census, Montana's resident population is 967,440 and population density is 6.2 people per square mile. The population is split almost equally between urban (54 %) and rural (46 %). Just over 33.5% of Montana's people reside in the seven population centers of Billings, Great Falls, Missoula, Helena, Bozeman, Kalispell, and Butte/Silver Bow. The remainder of the population is dispersed in small towns, communities and on farms and ranches.

Census 2008 updated population race/ethnicity and ethnic breakdown data can be found in Table 1 below.

RACE/ETHNICITY	% OF 2008 POPULATION
White	90
American Indian & Alaskan Native	7

Hispanic	2
Asian	0.5
Black	0.5

Table 1: Annual Estimates of the Resident Population by Race/Ethnicity in Montana: July 1, 2008

Demographics and Family Characteristics

Between 2000 and 2008, Montana’s population grew by 7.2%; however, the state continues to see a decline in the number of children. In the same period, the total number of children under age 18 fell by 3.5 %, although this represents a lessening in the decline over the last few years. While the number of both white and American Indian children (the two largest groups in the state) fell, the number of white children fell by 2.7%, slightly more than the 1.4% decline of American Indian/Alaska Native children.

Social and Economic Context

Montana has seen economic growth with four consecutive years of expansion. However, this economic growth has not resulted in a reduction in Montana’s poverty rates.

In 2007, the median household income was \$43,000 in Montana. With the US economy in recession, Montana’s unemployment rates have fared well compared to the national rate; in 2008 Montana’s unemployment rate was 4.5% compared to the national rate of 5.8%.

The rate of Montanans living in poverty grew from 13% in 2000 to 14% in 2008. Poverty rates for Montana’s children ages 0 – 17 are even higher. In 2006, 27% of Montana’s children lived in households below 150% of the Federal Poverty Level (FPL) or \$31,800 a year for a household of four. There has been little change in these rates over the past 15 years. This lack of change holds true for the children living in extreme poverty (below 50% of the poverty rate) up to children living below 250% of the poverty rate, or \$53,000 a year for a household of four. The group representing the largest share (21%) of children in poverty is kids under five years of age.

Education

The two major data sources used in this report, the Prevention Needs Assessment (PNA) and Youth Risk Behavior Survey (YRBS), are school based surveys. They are voluntary surveys administered by the local school district. There are 830 schools in Montana ranging in size from less than 50 students (327 schools) to over 500 students (51 schools). With the declining number of school-age children in the state, public school enrollment numbers have declined by 5.9% since 2000.

Substance Abuse in Rural and Small Town America*

This section was included in the 2007 SEW report, it is included again as it remains the benchmark for research on alcohol abuse in rural America.

Montana's story on substance abuse can be set in the context of national research looking at illicit drug use and alcohol use across the nation in rural and small town America. Problem behaviors associated with substance abuse include: failure to fulfill major role obligations at work, school, or home; legal problems stemming from dysfunctional interpersonal and social relations; and hazards to health and life. The prevalence of these problem behaviors changes with the substance abuser's age. Dramatic increases in both drug and alcohol abuse occur between 12 to 17 years of age and in young adults. The most significant number is the high use of alcohol among males ages 18 to 25. Until that age, the use of alcohol or illicit drugs between males and females is similar. There is a three-fold increase in alcohol abuse and a doubling of drug abuse by young adult males from their young teens to their young adult years. Increases for female teens and young adults were less dramatic.

Significant Conclusions from the Carsey Institute Report:

- Alcohol abuse far exceeds illicit drug abuse. The only group at an equally high risk for both is American Indian youth (age 12-17).
- Alcohol abuse is a serious problem among rural youth (age 12-17), and this risk for alcohol abuse is exacerbated when parents are absent from the household.
- Young adults (age 18-25) show the highest rates of alcohol and illicit drug abuse, and it is in young adulthood that sex differences emerge. Twenty-two percent of young adult men have an alcohol abuse problem compared to 12% of young adult women. Nine percent of young adult men have a drug abuse problem compared to 6% of young adult women.
- Less educated young adults (age 18-25) are more likely to have an illicit drug abuse problem.
- Unemployment appears to be an especially crucial marker for illicit drug abuse for all ages.
- Unmarried young adults and adults in rural areas are more likely to have alcohol and illicit drug abuse problems than are their married counterparts.

* Source for this section: The Carsey Institute, "Substance Abuse in Rural and Small Town America." (www.carseyinstitute.unh.edu).

Results from the 2008 National Survey on Drug Use and Health: National Findings

This updated SEW report compares Montana data for many substance abuse consumption and consequence indicators to national data; an extensive list is included in Appendix C. However, it is interesting to see how the nation as a whole has fared on substance abuse data collected in the 2008 National Survey on Drug Use and Health. Following are some major findings of that survey**:

Geographic Area and Rural Versus Urban

- The rate of past month alcohol use for people aged 12 or older in 2008 was lower in the South (47.3%) than in the Northeast (56.8%), Midwest (54.2%), or West (51.8%).
- The 2008 rate of current illicit drug use among the population aged 12 or older in completely rural counties was 6.1%, which was higher than that observed in 2007 (4.1%).
- Among people aged 12 or older, the rate of past month alcohol use in large metropolitan areas (53.6%) was higher than the 51.3% in small metropolitan areas and 45.8% in nonmetropolitan areas. Binge drinking was equally prevalent in small metropolitan areas (22.5%), large metropolitan areas (23.9%), and nonmetropolitan areas (22.8%).
- The rates of binge alcohol use among youths aged 12 to 17 were 9.8% in nonmetropolitan areas, 9.0% in small metropolitan areas, and 8.4% in large metropolitan areas.

Driving Under the Influence of Alcohol

- In 2008, an estimated 12.4% of persons aged 12 or older drove under the influence of alcohol at least once in the past year. This percentage has dropped since 2002, when it was 14.2%. The 2008 estimate corresponds to 30.9 million persons.
- Driving under the influence of alcohol was associated with age in 2008. An estimated 7.2% of 16 or 17 year olds, 16.7% of 18 to 20 year olds, and 26.1% of 21 to 25 year olds reported driving under the influence of alcohol in the past year. Beyond age 25, these rates show a general decline with increasing age.
- Among persons aged 12 or older, males were more likely than females (16% vs. 9%) to drive under the influence of alcohol in the past year.

Underage Alcohol Use

- In 2008, underage current alcohol use rates in small metropolitan areas were 27.9%, large metropolitan areas 25.9%, and nonmetropolitan areas 25.3%. The rate in completely rural nonmetropolitan areas was 24.6% in 2007.
- The 2008 rates of binge alcohol use among youths aged 12 to 17 were 9.8% in nonmetropolitan areas, 9.0% in small metropolitan areas, and 8.4% in large metropolitan areas.
- In 2008, about 10.1 million persons aged 12 to 20 (26.4% of this age group) reported drinking alcohol in the past month. Approximately 6.6 million (17.4%) were binge drinkers, and 2.1 million (5.5%) were heavy drinkers. These rates for current and binge alcohol use are lower than they were in 2007, when they were 27.9% and 18.6% respectively.
- Rates of current, binge, and heavy alcohol use among underage persons declined between 2002 and 2008. Current use dropped from 28.8% to 26.4%; binge use declined from 19.3% to 17.4%; and heavy use declined from 6.2% to 5.5%.

***Statistical Guidelines as developed by the U.S. Department of Agriculture (2003):*

- *Large metropolitan (large metro) areas have a population of 1 million or more.*
- *Small metropolitan (small metro) areas have a population of fewer than 1 million.*
- *Nonmetropolitan areas are outside of large metropolitan areas and include urbanized counties with a population of 20,000 or more in urbanized areas, less urbanized counties with a population of at least 2,500 but fewer than 20,000 in urbanized areas, and completely rural counties with a population of fewer than 2,500 in urbanized areas.*

BACKGROUND AND OVERVIEW

Goals and Guiding Principles

Overview of SPF SIG: The Center for Substance Abuse and Prevention (CSAP) has identified several principals as the foundation for SPF SIG. CSAP's stated goal is: "To prevent the onset and reduce the progression of substance abuse across the lifespan by taking a public-health approach".

CSAP's Overall SPF SIG Goals:

- i. To prevent the onset and reduce the progression of substance use, including underage drinking.
- ii. To reduce substance-related problems in communities.
- iii. To build prevention capacity/infrastructure at state and community levels.

CSAP's Guiding Principles:

- i. Substance abuse prevention should be integrated with other health prevention and wellness promotion activities.
- ii. A state's substance abuse system should be data-driven, from the identification of problems and priorities, to monitoring and surveillance, to evaluating outcomes.
- iii. Communities should be full partners in this initiative, and given flexibility in how they develop their substance abuse prevention infrastructure.

Montana SPF SIG Goals: Montana developed the following overall goals to guide its work; these goals are based on the overall SPF SIG goals developed by the Center for Substance Abuse Prevention (CSAP).

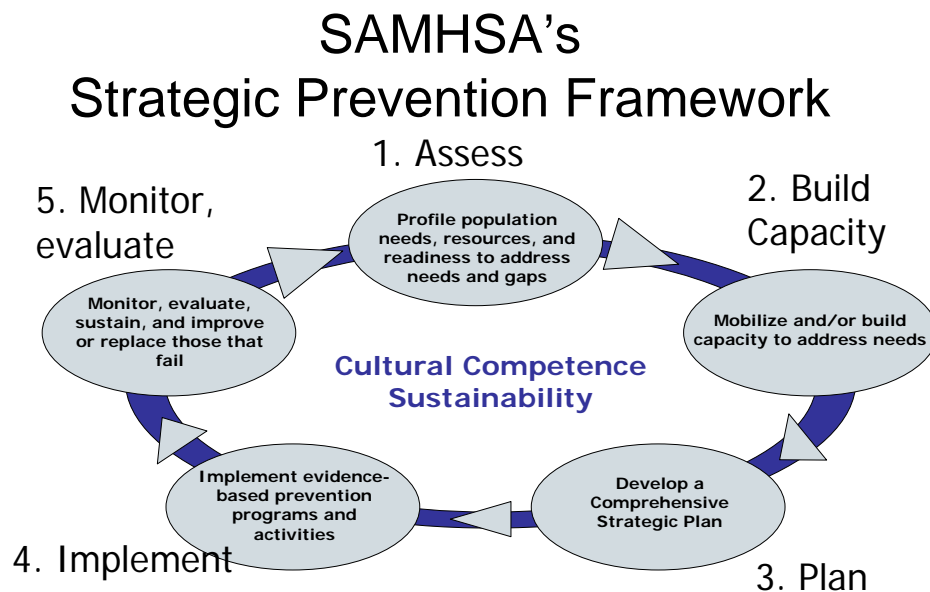
- i. To build prevention capacity and infrastructure at the state and community levels in Montana.
- ii. To prevent the onset and reduce the progression of substance use and abuse in Montana using a public health model.
- iii. To prevent the onset and reduce the progression of substance abuse including childhood and underage drinking in Montana.

Strategic Prevention Framework State Incentive Grant (SPF SIG)

SPF SIG Framework: Montana SPF SIG goals were operationalized through the SPF SIG Framework illustrated in Figure 1. CSAP identified this framework as:

Examining, interpreting, and applying data are essential processes that help the States to (a) **assess** problems and set priorities, (b) evaluate and mobilize **capacity** to address them, (c) inform prevention **planning** and funding decisions, (d) guide the selection of appropriate and effective strategies for **implementation**, and (e) monitor key milestones, **evaluate** initiatives, and adjust prevention efforts as needed.

Figure 1: SPF SIG Framework diagram



Purpose and Functions of Montana's State Epidemiological Workgroup (SEW)

Every state receiving a SPF SIG grant was required to establish a SEW. The Montana SEW is a network of individuals who are knowledgeable about and have been working on Alcohol, Tobacco and Other Drugs (ATOD) data and prevention issues in Montana. Appendix A lists the Montana State Epidemiological Workgroup members. The SEW was responsible for bringing systematic and analytical thinking to prevention decision-making and improving the use of prevention resources by making use of available substance related data/indicators. The SEW identified epidemiological data needs, gathered and interpreted data, and applied data implications to state consumption and consequence patterns to determine the most pressing substance abuse problems in Montana.

Selection of SEW Members

Members of the Montana SEW were invited to be part of the needs assessment process based upon their knowledge of, and ability to work with, substance-related data. This included the ability to bring raw data sets to the group which they were willing to manipulate to produce

specific aggregated indicators. Membership was also chosen to reflect as many state agencies as possible, while keeping the group relatively small. Diversity on the SEW reflects this effort with a mix of data analysts, epidemiologists, prevention experts, community providers, and state agency representatives. Although individual members of Montana's SEW have changed since its inception, the actual agencies and groups represented have not.

Cultural Competency

As shown in Figure 1, the whole project is to be inextricably underpinned with attention to cultural competency. Cultural competency is a critical component to the Strategic Planning Framework, and as it pertains to the SPF SIG process is defined by SAMHSA in two ways:

1. A set of academic and interpersonal skills that allow individuals to increase their understanding and appreciation of cultural differences and similarities within, among and between groups. This requires a willingness and ability to draw on community-based values, traditions, and customs, and to work with knowledgeable persons of, and from the community in developing focused interventions, communications, and other supports. Source: Orlandi et.al., (1992)
2. ...the attainment of knowledge, skills and attitudes to enable administrators and practitioners within systems of care to provide for diverse populations. This includes an understanding of that group's or member's language, beliefs, norms and values, as well as socioeconomic and political factors that may have a significant impact on their well-being, and incorporating those variables into assessment and treatment. Source: CSAP, (1993)

The Montana SEW documented their commitment to cultural competency at each step. An overview of the steps taken is:

- ✓ Ensuring diverse representation on the SEW;
- ✓ Ensuring data sources could be disaggregated to the extent possible; and
- ✓ Choosing indicators that inform ATOD consumption and consequence patterns for different population groups.

The Montana SEW's Charge

- ✓ Identify key data constructs and indicators for understanding state-level substance use patterns and related consequences.
- ✓ Examine and describe consequences and consumption data in the form of an Epidemiological Profile outlining their nature, magnitude and distribution.
- ✓ Provide a baseline and set the stage for ongoing data monitoring efforts.

Montana's Comprehensive Needs Assessment for Substance Abuse Prevention

The Montana SEW first met in January 2007. They spent the next year and a half using a comprehensive data-driven process to determine priorities to recommend as the target of Montana's Strategic Prevention Framework State Incentive Grant (SPF SIG). Then in 2007, the Montana SEW produced an initial report which outlined the nature, magnitude and distribution of consequences and consumption of ATOD. The purpose of the report was to make recommendations and inform decisions of the Governor's Office and the State Workgroup in developing a strategic prevention plan. This plan became the roadmap to award grants to identified communities for development and implementation of community prevention plans to address the identified priority.

Process for Determining Priorities

Montana's Epidemiological Workgroup undertook the process of conducting a comprehensive needs assessment consisting of the following steps. For further details, the 2007 report gives a comprehensive explanation of each step.

1. Identify data sources.
2. Develop and collect database of sources for ATOD consumption and consequence patterns.
3. Develop initial list of consumption and consequence indicators.
4. Develop criteria for selecting priorities.
5. Apply initial narrowing criteria.
6. Apply second narrowing criteria to determine refined list of consumption and consequence indicators.
7. Determine pattern of relationship between consumption and consequences to identify priority substances and/or substance-specific problems.
8. Develop recommendations for state priority(s) and rationale.

Recommended Priorities

Of all substances considered by the Montana SEW, the most significant problem area was determined to be binge drinking with particular emphasis on underage binge drinking. The other significant area of concern was identified as drinking and driving, again with an emphasis on underage drinking and driving. Thus the primary target area and secondary area of concern were:

1. *Binge drinking with an emphasis on underage binge drinking; binge drinking refers to having five or more drinks on any one occasion.*

2. *Secondary level of prevention efforts should be drinking and driving with an emphasis on teenagers and young adults. This is based on the fact that not only are students and adults binge drinking but they are getting in cars and being injured or killed and injuring or killing others.*

UPDATES ON PRIORITY INDICATORS

The 2007 Montana Comprehensive Needs Assessment for Substance Abuse Prevention identified binge drinking with an emphasis on underage binge drinking—five or more drinks on any one occasion (four or more for females)—as the primary target for the state strategic prevention activities. Drinking and driving with an emphasis on teenagers and young adults was also a secondary area of concern based on the fact that binge drinking typically leads to alcohol-related traffic fatalities and crashes with injuries.

Binge drinking across the lifespan continues to be the number one drug abuse problem in Montana. There are a larger number of adults and underage persons involved in binge drinking than any other type of drug abuse with the exception of tobacco use. Montana’s binge drinking rates continue to be high and above national rates for almost all age groups.

The indicators used to determine the extent of Montana’s priorities were both ones showing consumption levels across the life-span and also the consequences of this consumption. The indicators targeted by the SEW are shown in Tables 2 and 3 below.

Table 2

Substance Specific Consumption Problems

Underage Drinking and Driving
% students - All Races - drove car when drinking 1+ times in past 30 days (grades 9-12) (YRBS 2003/05/07)
% students - American Indian - drove car when drinking 1+ times in past 30 days (grades 9-12) (YRBS 2003/05/07)
Underage Binge Drinking
High School seniors - All Races - binge drinking past 30 days (PNA, 2004/06/08)
% students - All Races - binge drinking past 30 days (grades 8,10,12) (PNA, 2004/06/08)
Binge drinking past 30 days - youth 12-17 yrs (NSDUH, 2004-05/2005-06)
% students - American Indian - binge past 30 days (grades 8,10,12) (PNA, 2004/06/08)
High School seniors - American Indian - binge drinking past 30 days(PNA, 2004/06/08)
% students - American Indian - binge drinking past 30 days (grades 9 -12) (YRBS 2003/05/07)
Students Riding in a Car by Someone Drinking
% students - American Indian - rode in car driven by someone drinking 1+ past 30 days (grades 9-12) (YRBS 2003/05/07)
% students - All Races - rode in car driven by some drinking one or more times in past 30 days (grades 9-12) (YRBS 2003/05/07)
Underage Drinking
% students - American Indian - drinking 30 days (grades 8-12) (PNA, 2004/06/08)
% students - All Races - drinking lifetime (grades 8-12) (PNA, 2004/06/08)

Adult Binge Drinking

% adult binge drinking (BRFSS 2005-2007) 5+ drinks on an occasion past 30 days

Adolescent Drug Use

% students - American Indian - any drug 30 days (grades 8,10,12) (PNA, 2004/06/08)

% students - American Indian - any drug lifetime (grades 8-12) (PNA, 2004/06/08)

% students - All Races - any drug lifetime (grades 8-12) (PNA, 2004/06/08)

% students - All Races - used meth 1+ times during life (grades 9 -12) (YRBS 2003/05/07)

YRBS - Youth Risk Behavior Survey

PNA - Prevention Needs Assessment

Table 3

Substance Specific Consequence Problems

Alcohol-Related Injuries MV Crashes

Injuries alcohol-related MV crashes (MDT/MARS 2003-2007)

Alcohol-Related Fatal MV Crashes

Fatal alcohol-related MV crashes - All Races - # persons (FARS & MDT/MARS 2003-2007)

Fatal alcohol-related MV crashes - All Races - per 100 million miles (FARS & MDT/MARS 2003-2007)

Fatal alcohol-related MV crashes - American Indian (FARS & MDT/MARS 2003-2007)

Alcohol-Induced Death

Alcohol-induced death - All Races (MT Vital Stats 2003-2007)

Alcohol-induced death – American Indian (MT Vital Stats 2003-2007)

Suicides

All suicides (MT Vital Stats 2003-2007)

Alcohol Dependency

% alcohol dependence in past year, youth 12-17 years old (Based on DSM-IV) (NSDUH-2004-05/2005-06)

% alcohol dependence in past year, young adults 18-25 years old (Based on DSM-IV) (NSDUH-2004-05/2005-06)

Treatment center admissions by primary substance of abuse (SAMHSA, 2003-2007) # of people for alcohol

Drug Dependency

Treatment center admissions by primary substance of abuse (SAMHSA, 2003-2007) # of people for alcohol w/secondary drug % drunk or high at school past year - American Indian (grades 8,10,12) (PNA, 2004/06/08)

Treatment center admissions by primary substance of abuse (SAMHSA, 2003-2007) # of people for amphetamines*** % drunk or high at school past year - All Races (grades 8,10,12) (PNA, 2004/06/08)

Drug-induced deaths - All Races (MT Vital Stats 2001-2005)

Suicide intentional self poisonings with drugs - All Races (MT Vital Stats 2001-2005)

Treatment center admissions by primary substance of abuse (SAMHSA, 2003-2007) # of people for other opiates****

MDT - Montana Department of Transportation

MARS- Montana Accident Reporting System

FARS - Fatal Accident Reporting System

NSDUH- National Survey on Drug Use & Health

SAMSA- Substance Abuse & Mental Health Services Administration

PNA - Prevention Needs Assessment

***methamphetamine and other amphetamines to include amphetamines, Benzedrine, Dexedrine, Precludine, Ritalin and any other amines and related drugs

****Other opiates=non-prescription use of methadone, codeine, morphine, oxycodone, hydromorphone, meperidine, opium, and other drugs with morphine-like effects

An updated data profile on each indicator falling under the priority problem areas and the area of high concern from both the consumption and consequence lists is included in Appendix C. To expand our understanding further of the consumption and consequence indicators, a detailed data profile on each indicator falling under the priority problem areas and the area of high concern from both the consumption and consequence lists is included in Appendix D.

Additional Indicators

Binge Drinking

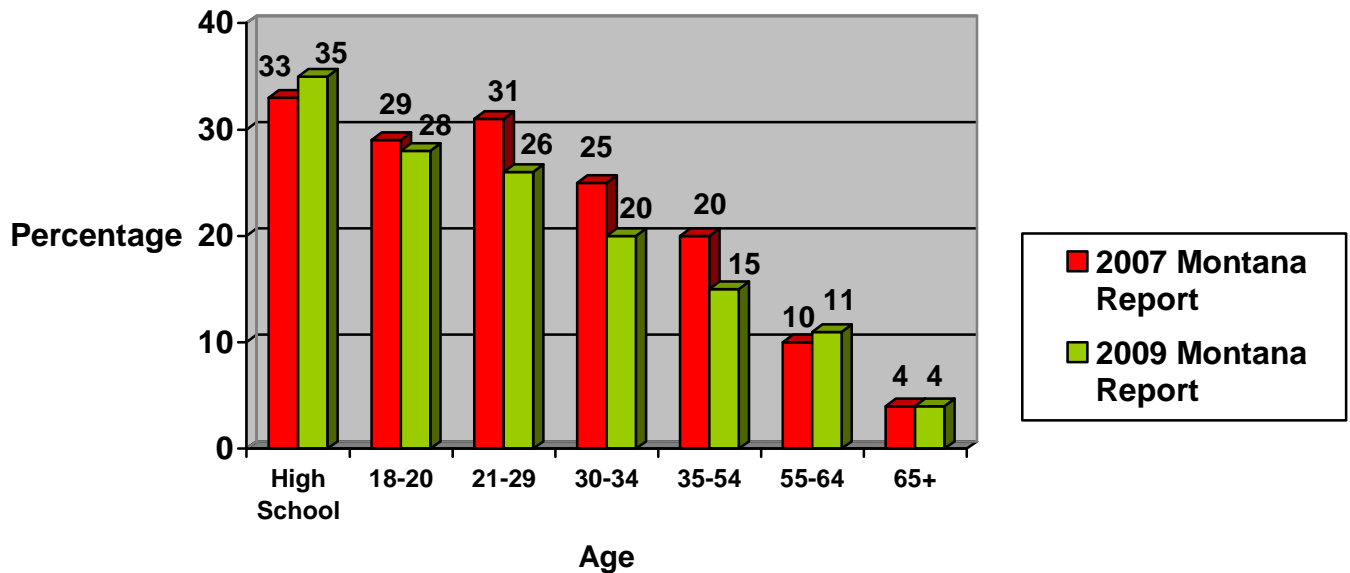
In addition to the above highest ranked indicators, the SEW looked at other ways to develop a fuller picture of the priority problem areas. Figure 2 shows the prevalence of binge drinking across the life span with data from the 2007 Needs Assessment against updated data.

The general pattern of binge drinking has not changed, with binge drinking rates high during high school and remaining high in young adult years. Binge drinking rates drop after individuals reach 30 years of age although they continue at fairly high levels and, moreover, these rates apply to population cohorts representing a greater number of people. So, while the percent falls, there is still a large number of Montanans with binge drinking problems over the life cycle of the state population.

Comparing the 2007 report to the 2009 report shows that the binge drinking rates for all adults over 21 years of age (the legal drinking age) has dropped slightly from 18% to 15.2%. Montanans 21 years of age and older represent more than 120,000 adults. Binge drinkers are defined as persons who report having five or more drinks on one occasion within the past 30 days (four or more for females). Males were twice as likely (23%) as females (12%) to binge drink.

High school student binge drinking rates rose slightly based on the averaging of three years of survey data, although the rise was not significant at 2%. The only other age cohort to rise slightly was the 55 to 64 year olds. All other age cohorts were down or similar.

Figure 2: Percent of Montana Persons Who Binge Drink, for Montana High School Students, Young Adult, and Adult Age Cohorts, Comparing 2007 Report to 2009 Report



Sources: 2007 Report: YRBS 2001–2005 (High School) BRFSS 2003 (other age groups)
 2009 Report: YRBS 2003–2007 (High School) BRFSS 2006–08 (other age groups)

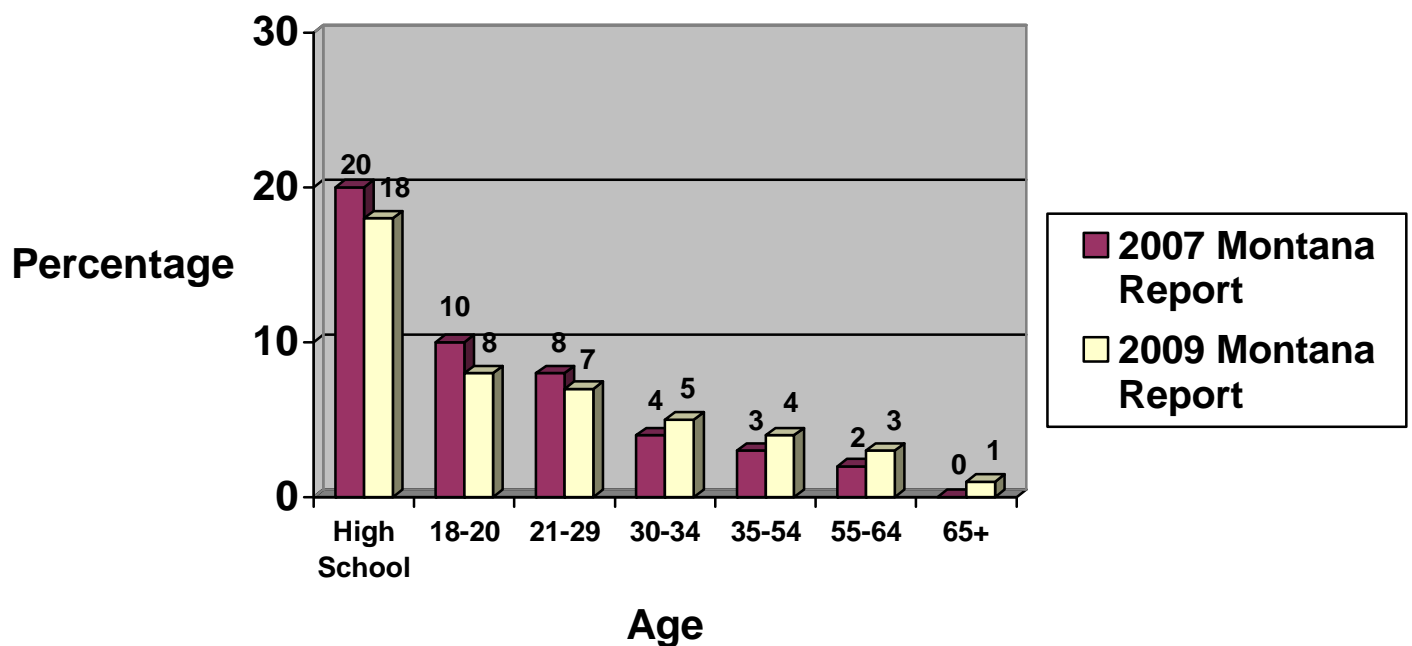
Drinking and Driving

Drinking and driving was the second most significant substance abuse problem area identified by the Montana SEW in the 2007 report and it remains a key outcome measure to track changes in binge drinking. Figure 3 shows the prevalence of drinking and driving across the lifespan with the data from the 2007 report compared to the updated data. There remains a dramatically larger number of high school youth engaging in this risky behavior compared to other age cohorts. However, when compared with Table 4: *Alcohol-Related Crashes by Age of Driver* on Page 16, it becomes clear that motor vehicle crashes involving alcohol occur across the life span and the age cohort involved in the largest number of fatal alcohol crashes is the 18 to 25 year olds. The rate of this age cohort, per 10,000 licensed drivers, is 4.5% compared to

1.3% for licensed drivers under age 18. Even with disproportionate numbers among youth drinking and driving compared to other age groups, the Montana SEW agreed the secondary area of concern to recommend should not be limited to underage drinking and driving but should encompass this consequence area across the lifespan with emphasis on youth behavior.

There is a slight downward trend in the number of Montana High School Students reporting that they were drinking and driving, from 20% in the 2007 report to 18% in this 2009 report.

Figure 3: Percent of Montana Persons Drinking and Driving, for Montana High School Students, Young Adult and Adult Age Cohorts, Comparing 2007 Report to 2009 Report



Sources: 2007 Report: YRBS 2001–2005 (high school) BRFSS 2003 (other age groups)
 2009 Report: YRBS 2003–2007 (high school); BRFSS 2006–08 (other age groups)

Alcohol-Related Crashes

Table 4 shows the alcohol-related crashes for 2008, the table from the previous SEW report has not been included as there are few changes. Again, the general pattern of the age cohort where most crashes occur remains consistent between the two years. It becomes clear the age cohort involved in the largest number of fatal alcohol crashes is the 18 to 25 year olds.

Table 4: Alcohol-Related Crashes by Age of Driver, 2008 Crash Data Chart

Age	Number of Licensed Drivers	Number of Drivers in Alcohol-Related Crashes	Alcohol-Related Crashes per 10,000 Licenses	Number of Drivers in Fatal Alcohol-Related Crashes	Fatal Alcohol-Related Crashes per 10,000 Licenses
Under 18	18,267	102	56	6	3.3
18-20	34,896	310	89	8	2.3
Under 21	53,163	412	77	14	2.6
21-24	49,325	455	92	11	2.2
25-34	123,556	723	59	31	2.5
35-44	113,943	493	43	22	1.9
45-54	148,703	435	29	12	0.8
55-64	128,641	189	15	9	0.7
65-74	74,827	60	8	4	0.5
75+	46,824	26	6	1	0.2

Sources: Montanan Department of Transportation Fatal Accident Reporting System
 Montana Department of Justice, Motor Vehicle Division

An additional table has been included in this report from the MDT report Overview of Montana’s Impaired Driver Problem. Table 5 shows the total impaired driver crash counts from 1999 to 2008. The following explanation of the table is extracted from the MDT report:

A fatal crash that involves a driver with a blood alcohol concentration (BAC) of .01 or greater is considered an alcohol-related crash. A drug-related fatal crash involves a driver with any amount of an illegal drug (which includes use of inhalants), and/or any amount of a prescription drug that has a known side-effect of causing impairment. Non-fatal crashes are determined to be alcohol- or drug-related by the officer at the scene based on observation of evidence at the crash scene (e.g. open containers, drug paraphernalia) and implementation of standard field sobriety testing (SFST) protocols.

Alcohol/drug-related crashes accounted for 10.5% of all reported traffic crashes during 2008. This percentage is higher than all but one year since 1996, but is still far below the 22.3% of alcohol-related crashes reported during 1983. Although this percentage has reached a plateau, it does appear to be increasing slightly.

Alcohol/drug-related crashes tend to result in more severe injuries than do crashes with no impairment. During the early 1980s, injuries related to alcohol accounted for as much as 36% of the total. Last year, alcohol/drug related

injuries were at 19.4% of all injuries. This is only slightly lower than last year which was the highest percentage since 1994. Economic loss from driver impairment crashes was over \$178 million during 2007 (2008 data currently unavailable). Table 5 below presents the impaired crash counts.

Table 5

Alcohol/Drug Related Crashes						
Year	All Crashes			Injuries		
	Alcohol Related	All	Percent of All	Alcohol Related	All	Percent of All
1999	2,177	21,078	10.3%	1,771	10,459	16.9%
2000	2,211	22,254	9.9%	1,824	10,798	16.9%
2001	2,035	21,846	9.3%	1,652	8,982	18.4%
2002	2,288	23,527	9.7%	1,745	10,086	17.3%
2003	2,173	23,160	9.4%	1,638	9,632	17.0%
2004	2,113	21,783	9.7%	1,767	9,263	19.1%
2005	2,182	22,373	9.8%	1,623	9,211	17.6%
2006	2,243	22,186	10.1%	1,816	9,470	19.2%
2007	2,273	21,829	10.4%	1,771	9,067	19.5%
2008	2,313	21,971	10.5%	1,645	8,465	19.4%
Change 1 year	+1.8%	+0.7%	+1.1%	-7.1%	-6.6%	-0.5%
Change 5 years	+5.3%	-1.3%	+6.6%	-4.5%	-9.3%	+5.1%

Source: Montana Department of Transportation – Safety Management System

Other Indicators

There are other indicators that shed light on Montana’s priority problems. Some of these indicators are from data sources not used in the Epidemiological Workgroup process; however, they are of interest because they show other consumption or consequence measures. Table 6 shows the data that has been updated from the 2007 Needs Assessment. The 2007 table has not been included as there is little change in the data with one exception. The only indicator with significant enough change to report is the number of DUI convictions. For the 2001–2005 period the Montana Department of Transportation reported 5,354 DUI convictions while in the 2005–2007 period, 6,771 DUI convictions were reported, indicating a 21% increase.

Table 6: Additional Indicators on Consumption and Consequences Problem Areas

	Annual Number of People in Montana	National Annual Rate	Montana Annual Rate	Montana Trend	Availability of Demographic & Geographic Break-Down
Consumption Indicator for Underage Binge Drinking					
Percent of all students grades 9-12 who had at least one drink of alcohol on school property in the past 30 days (YRBS 2003/05/07)	3,010	4.5%	6.3%	down	Age, Gender, Race
Consequence Indicators for Underage Binge Drinking					
Rate of alcohol dependence in past year, young adults ages 18-25 (NSDUH 2004-05/2005-06)	10,061	7.2%	9.3%	up	Age, Gender
Minors referred to Juvenile Probation for being in possession of alcohol (Montana Supreme Court <i>Juvenile Justice Report</i> , 2007)	768	N/A	N/A	N/A	County
Consequence Indicators for Adult Binge Drinking					
DUI Convictions (MDT, 2005-07)	6,771	N/A	934 per 100,000 licenses	up	County
Alcohol Related Violent Crime Index, young adults (MT Board of Crime Control, 2005-07)	2,917	446 per 100,000	311 per 100,000	down	County

YRBS: Youth Risk Behavior Survey

NSDUH: National Survey on Drug Use and Health

MDT: Montana Department of Transportation

ADDITIONAL RESEARCH ON PRIORITY INDICATORS

The Montana SEW has continued to conduct research and additional analysis of the identified priority indicators throughout the year and a half since the first Epidemiological Profile. This section will look at the additional research and reports.

Report Abstracts:

➤ **2008 Prevention Needs Assessment Data on Student Drinking and Driving and Sources of Alcohol**

This analysis compares student drinking and driving and riding in a car with someone who has been drinking from the 2008 Montana's Prevention Needs Assessment (PNA) survey to the Youth Risk Behavior Survey (YRBS) data on student drinking, riding, and driving. It also looks at where students obtained their alcohol. 2008 represents the first year that a question on student drinking and riding and source of alcohol has been included in Montana's PNA. Information on student binge drinking and drinking and driving has been regularly collected by the Office of Public Instruction going back to the late 1990's.

➤ **Prevention Needs Assessment 2004 and 2006 Data: Identifying Social and Environmental Factors Associated with Underage Binge Drinking**

This analysis looks at a sample of approximately 20,000 student responses from the 2002, 2004 and 2006 Prevention Needs Assessment data. Student responses to demographic, family background, and community environmental factors were formulated to reflect the impact of those measures on a student's probability of being a binge drinker. The probabilities of student binge drinking based on the various measures were estimated. Statistical results from the estimating procedures were analyzed as to whether they were consistent with other public health studies of binge drinking behavior and its determinants. And finally, the magnitude of impact and its ordering relative to other variables was examined for consistency of patterns under the different estimating procedures.

➤ **Two Methods for Measuring the Role of Alcohol Abuse With Mortality Records**

This report analyzes Montana death certificates covering a five-year period and looks at frequencies of "alcohol-induced" deaths in Montana versus those certificates with "alcohol-mentioned"; alcohol-mentioned means the medical certifier felt alcohol abuse was worth mentioning as a cause of death, even if it was not the "underlying" cause. Because alcohol use or abuse may be recorded as an immediate, intermediate, or contributing cause of death, its effect is often not reflected in the underlying cause. Thus, most of these cases would be overlooked in an examination of only those records where alcohol was indicated in the

underlying cause of death. Such is the case in most reports based on tabulations and rankings of death by cause, since they typically rely on the underlying cause only. This report makes the case that a new classification of alcohol-mentioned deaths – including all deaths where alcohol is the underlying or any other of the multiple causes – can be useful in efforts to improve the public health.

➤ **Improvements of Montana Behavioral Risk Factor Surveillance System and 2008 Binge Drinking Module Results**

This report examines the history and evolution of the Montana Behavioral Risk Factor Surveillance System (BRFSS). Specifically, how the Montana BRFSS program expanded the use of the survey data by: increasing sample sizes; over-sampling Montana's Native American populations; weighting the data for regional analysis; and participating in supplements to the survey, such as the asthma callback survey, SMART BRFSS, and cell phone pilot studies.

***2008 Prevention Needs Assessment Data on Student
Drinking and Driving and Sources of Alcohol***

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2008 Prevention Needs Assessment Data on Student Drinking and Driving and Sources of Alcohol

The 2007 Montana Comprehensive Needs Assessment for Substance Abuse Prevention identified binge drinking with an emphasis on underage binge drinking—five or more drinks on any one occasion (four or more for females)—as the primary target for the state strategic prevention activities. Drinking and driving with an emphasis on teenagers and young adults was also a major area of concern based on the fact that binge drinking typically leads to alcohol-related traffic fatalities and crashes with injuries.

Student drinking and driving and riding in a car with someone who has been drinking were measured in the Montana prevention needs assessment survey for the first time in 2008. Youth Risk Behavioral Survey data on student drinking, riding, and driving has been regularly collected by OPI going back to the late 1990's. The three-year averages for this measure in the 2007 and the current 2009 EPI Profiles do not fully capture changes in student drinking, driving and riding for the most recent year.

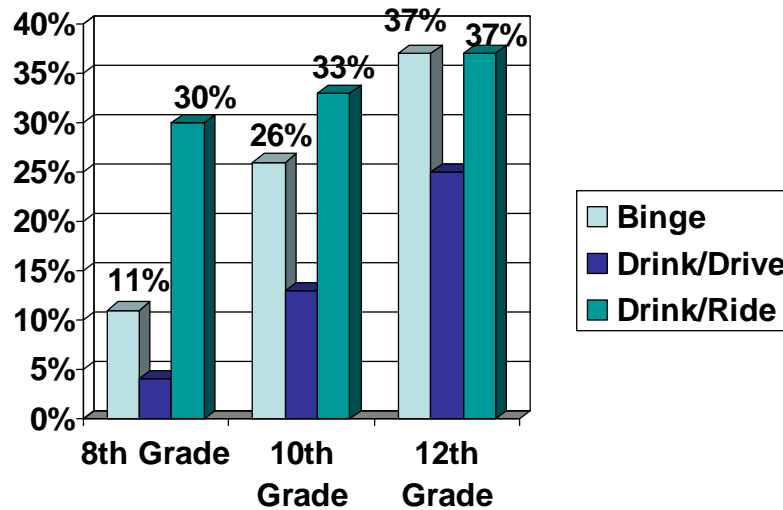
YRBS data on underage drinking and driving shows a downward trend from 22% of Montana high school students reporting this behavior in 2001 down to 13.5% for the 2009 student survey. Students who ride in a car with someone who has been drinking also declined from 39% in 2001 to 29% in 2009.

The downward trend on drinking, driving, and riding in a car is confirmed by 2008 PNA data on student drinking and driving behavior. Thirteen percent (13%) of Montana's 8th through 12th grade students reported driving a vehicle after drinking alcohol in 2008. One-third (33%) reported riding in a car driven by someone who had been drinking. Both these data points are consistent with YRBS data.

There is, however, significant variation in the driving and riding rates by grade level as shown in Figure 1. Drinking and driving rates increase significantly by the time students reach their senior year, with one-fourth (25%) of all 12th graders reporting drinking and driving.

The percent of Montana students who ride in a car with a driver who has been drinking is high even for students in the 8th grade. Riding and drinking rates increase as students move on to higher grades and goes hand in hand with higher binge drinking rates.

Figure 1: **Montana Youth Drinking and Driving: 2008 PNA**



High binge drinking rates result in high rates of acute impairment associated with a variety of problems including motor vehicle crash injuries, other unintentional injuries, assaults, domestic violence, rape, unintended pregnancy, vandalism, alcohol poisoning, and alcohol dependence.

Fatal motor vehicle crashes involving alcohol and alcohol-related crashes with injuries are important consequence measures for excessive consumption of alcohol resulting in drinking and driving. There has been a slight decline in the percent of Montana students reporting drinking then driving a vehicle although cars and booze continue to be a major problem in Montana for two reasons. First, the 37% of high school seniors who report binge drinking also report the same rate of drinking and riding in a car with a driver who has been drinking, a riding/drinking rate matched by 10th and even 8th graders. There is a high percent of youth riding around in cars with alcohol. Second, Montana's alcohol-related traffic fatality rate and alcohol-related crashes with injury rate are still extremely high and lead the nation.

Sources for Obtaining Alcohol

Student sources for obtaining alcohol are another new data element in the 2008 Montana PNA data. Sources of alcohol covered in the survey are shown in Table 1 and it is important to note that the percentages reported in this table reflect the 63% of students who reported using alcohol in the past year. Thus the percentages account for alcohol-using students and not those students who answered "did not use" to the question.

The categories are not mutually exclusive, and students were allowed to select more than one option. For example, students who report getting alcohol from home with a parents' permission might also report taking it from a store. Accordingly, total percentages will not sum to 100% within grade, as selection of multiple options is evident.

Across all grades, one of the most prominent alcohol sources for alcohol-using Montana students is getting it from someone they knew age 21 or older. This source becomes increasingly more frequent as students progress from the 8th grade (31.4% obtained alcohol from someone they know over age 21) to the 12th grade (69.3% obtained alcohol from someone they know over age 21). For alcohol-using 8th graders, the top three sources for obtaining alcohol are getting it from someone over age 21, getting it from another source that was not listed as an option (29.0%), and getting it from home without a parent’s permission (26.6%). For alcohol-using 10th and 12th graders, the top three sources were getting it from someone they know over the age of 21, getting it from someone they know under the age of 21 (34.1% for 10th graders, 31.5% for 12th graders), and from another source that was not listed as a response option (25.0% of 10th graders, 19.6% of 12th graders).

Family members are also an important source of alcohol for students. Students who get alcohol from home with or without a parent’s permission, from a brother or sister, and from a relative represent, on average, 17% of the students who report using alcohol in the past year.

Very few students reported buying alcohol themselves with a fake ID (1.5% to 3.9% of alcohol-drinking students in each grade) or buying alcohol without a fake ID (1.3% to 6.2% of alcohol-drinking students in each grade).

Table 1

Percentage of Alcohol-Drinking Students Indicating Their Usual Sources of Obtaining Alcohol				
<i>If you drank alcohol (beer, wine, or liquor) and not just a sip or taste in the past year, how did you usually get it? (Choose all that apply)</i>	8th Grade	10th Grade	12th Grade	Total
I bought it myself with a fake ID	1.5	1.7	3.9	2.5
I bought it myself without a fake ID	1.3	2.6	6.2	3.7
I got it from someone I know age 21 or older	31.4	54.1	69.3	54.8
I got it from someone I know under age 21	20.6	34.1	31.5	30.0
I got it from my brother or sister	10.5	12.8	12.2	12.0
I got it from home with my parents’ permission	23.7	17.1	16.2	18.3
I got it from home without my parents’ permission	26.6	22.2	15.6	20.7
I got it from another relative	13.9	10.6	9.2	10.8
A stranger bought it for me	3.6	8.7	10.6	8.2
I took it from a store or shop	2.9	3.9	2.5	3.1
Other	29.0	25.0	19.6	23.8

***Prevention Needs Assessment 2004 and 2006 Data:
Identifying Social and Environmental Factors
Associated with Underage Binge Drinking***

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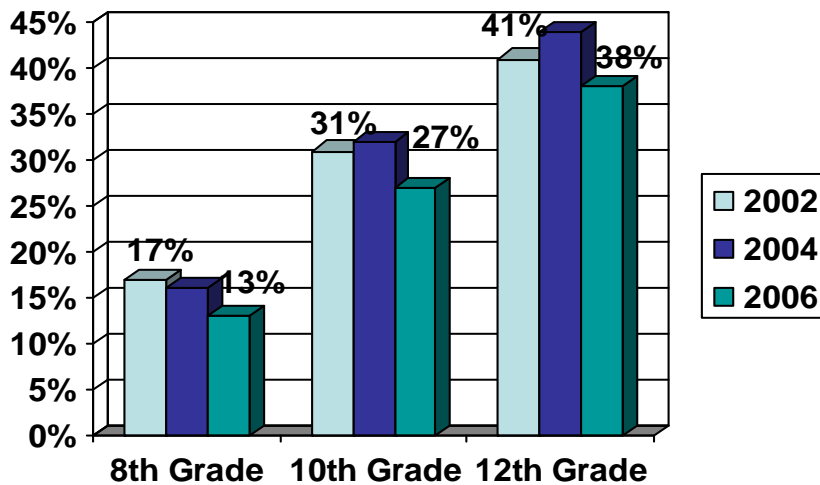
Prevention Needs Assessment 2004 and 2006 Data: Identifying Social and Environmental Factors Associated with Underage Binge Drinking

Montana's priority problem of binge drinking with an emphasis on underage drinking is measured by student survey data collected by the Prevention Needs Assessment student survey. The survey is administered in Montana schools every even numbered year. PNA coverage of 8th, 10th, and 12th graders is information rich with student response numbers on alcohol use and abuse as well as other drugs.

The PNA survey collects information on student demographics, student perceptions of alcohol use in relation to law enforcement and availability of alcohol, family background factors including parental attitudes and history of alcohol problems, and exposure to drinking through other adults and siblings.

Binge drinking by Montana students has been declining as shown in Figure 1 although the self-reported levels are still at alarmingly high levels.

Figure 1: Montana PNA % Reporting Binge Drinking by Grade 2002-2006



Montana student binge drinking behavior was analyzed using 2004 and 2006 PNA individual student response data for the entire state to identify the social and environmental factors associated with underage binge drinking. Variables and statistical modeling bases were designed to link statistical findings to environmental strategies in grantee communities within the Montana Community Change Project (MTCCP).

Basic questions addressed by the analysis were:

- a) How do demographic factors such as gender, age, grade level, rural versus urban location, and race/ethnicity affect binge drinking by Montana students?
- b) How do contributing factors such as availability of alcohol and level of law enforcement affect student binge drinking?
- c) How do family and social factors affect student binge drinking?
- d) What are the implications of the statistical findings for community environmental based strategies targeted on binge drinking in general and for underage students?

Method and Sample Characteristics

Students not in grade 8 or higher and students admitting to “dishonesty of response questions” were deleted resulting in a large and robust sample of 19,643 students for 2006 and 19,821 students for the 2004 PNA data set. Student responses to demographic, family background, and community environmental factors were formulated into zero-one variables that would reflect the impact of those measures on a student’s probability of being a binge drinker. The probabilities of student binge drinking based on the various measures were estimated using probit and logit estimating procedures.

Statistical results from the estimating procedures were analyzed as to whether the direction—positive or negative – of the variables’ impacts on binge drinking were consistent with other public health studies of binge dinking behavior and its determinants. The direction – positive or negative – of impact was examined for consistency of sign and significance using the different estimating procedures. And finally, the magnitude of impact and it’s ordering relative to other variables was examined for consistency of patterns under the different estimating procedures.

Sample characteristics for the 2006 PNA student data showed 40% were from rural areas, 36% were 8th graders while 26% were 12th graders, 9% were American Indian and 83% were Caucasian. One-third (33%) reported regular alcohol use, with almost half of these respondents reporting regular use by age 14 or under. One-fourth (25%) of the students reported at least one episode of binge drinking, with binge drinking defined as five or more drinks in a row over the last two weeks.

Other characteristics used in formulating variables for the statistical analysis were easy availability of alcohol reported by 72% and no fear of police apprehension when drinking (26%). Family factors related to alcohol showed a strong social and cultural presence of alcohol. About 64% of the students reported siblings who drink, 40% reported alcohol problems in the family, and an extremely high 73% reported being around adults who got drunk or high within the past year.

Findings and Results

Students who reported having five or more alcoholic drinks in a row over the last two weeks were identified and coded as binge drinkers whether the binge drinking occurred once, twice, three to five times, or more frequently. Non-binge drinkers reported 'none' to the question. Probability estimates of being a binge drinker were performed for all students, for 8th graders, and for 12th graders.

Results for all grades and the 8th and 12th grade estimates were similar with some differences in the ordering of factors affecting binge drinking between 8th and 12th graders.

The factors increasing the probability of binge drinking for 8th graders by order of magnitude of impact were:

- a) Having no concern about parents catching me drinking
- b) Having no concern about what neighbors think
- c) Being around drunk or high adults
- d) Having siblings that drink
- e) Being an American Indian male
- f) Finding alcohol easy to get
- g) Having no concern about being caught by law enforcement when drinking
- h) Having alcohol problems in the family
- i) Age.

All of these factors were significant at the 1% level of statistical confidence. Rural location was not significant. Estimates for 12th graders included most of the above factors although age was not significant and rural location again failed to have a statistical significant impact on the probability of binge drinking.

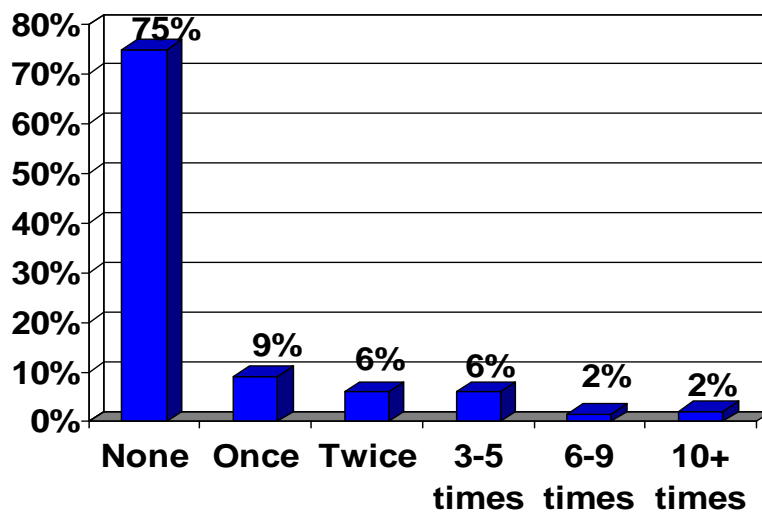
Factors increasing the probability of binge drinking for 12th graders by order of magnitude of impact were:

- a) Being around drunk or high adults
- b) Having no concern about parents catching me drinking
- c) Having siblings that drink
- d) Finding alcohol easy to get
- e) Being a male with a higher positive impact for American Indian males
- f) Having no concern about what neighbors think
- g) Having alcohol problems in the family.

Differences in binge drinking behavior as students age from 8th to 12th grade include: being a male of any race/ethnicity increasing the likelihood of binge drinking; a smaller impact of no concern about what neighbors would think about drinking; and lack of concern about law enforcement and being caught by police affecting binge drinking by high school seniors.

The frequency of student binge drinking is also an important part of preventing alcohol abuse and drinking and driving by underage students. Frequency responses for the one-fourth of 2006 PNA students reporting binge drinking, shown in Figure 2, indicate the majority of binge drinking events at five times or less in the reporting period. A smaller percent of students binge drink on a more frequent basis.

Figure 2: Student Response on Frequency of Binge Drinking Past 2 Weeks: Montana 2006 PNA Data, All Students



Frequency data on student binge drinking were used to estimate the probability of binge drinking by frequency compared to no binge drinking. Multinomial logit estimates of the probability of binge drinking once, twice, 3 to 5 times, 6 to 9 times, and 10 or more times compared to no binge drinking were conducted using the same environmental and demographic factors used in the previous analysis.

Factors increasing the probability of binge drinking compared to no bingeing by order of impact were similar to earlier results on the binge-no binge analysis for 8th and 12th graders and include:

- a) Being around drunk or high adults
- b) Finding alcohol easy to get
- c) Having no concern about parents catching them when they drank
- d) Having siblings who drink
- e) Being male with stronger impact for American Indian male
- f) Having no concern about what neighbors think

- g) Having alcohol problems in the family
- h) Having no concern about policy
- i) Age.

Rural location was not a significant determinant of binge drinking frequency.

The top two environmental factors—being around drunk or high adults and finding alcohol easy to get—showed an increasing magnitude of impact for increased frequency of binge drinking. The impact of being around drunk or high adults increased two fold for students reporting binge drinking 6 to 9 times or more in a two week period.

Hard core binge drinking was exponentially impacted by the easy availability of alcohol; the impact of easy availability doubled the probability or likelihood of students binge drinking compared to those who did not binge drink.

Conclusions

Many of the findings and results confirm anecdotal and intuitive knowledge about student binge drinking behavior. Binge drinking is very dependent on family and adult drinking behavior. Ease of obtaining alcohol is a major contributing factor to binge drinking. Young underage males are more likely to be binge drinkers and to binge drink more frequently when compared to students who do not binge drink. And a lack of concern about police and law enforcement reinforces 8th grade binge drinking and has no impact on 12th grade binge drinking behavior. High school seniors are not concerned about law enforcement when they binge drink.

***Two Methods for Measuring the Role of
Alcohol Abuse with Mortality Records***

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Two Methods for Measuring the Role of Alcohol Abuse with Mortality Records

Several causes of death may be, and often are, listed on a death certificate. These “multiple causes,” as they are sometimes called, include immediate and contributing causes. However, a single cause, referred to as the underlying cause, is chosen from among these multiple causes and is most often used to characterize the death. This underlying cause is the cause or morbid condition that gives rise to all of the other causes that eventually lead to death. In the field of public health and safety, the underlying cause is the one thought by many to be the single most useful cause for those devising prevention and intervention strategies in an attempt to reduce premature mortality. The logic is simple—prevent the underlying cause and you prevent all subsequent causes, and the death itself (at least, for the time being).

The underlying cause is thus the cause usually used for tabulation of deaths and is used as the basis for the so-called “leading causes of death.” This perspective on cause of death provides the primary focus for mortality analysis in public health. However, this simplified view of death and what leads to death can obscure important relationships among the various causes.

For instance, a decedent may succumb to bronchial pneumonia brought on by an operation for lung cancer. In such a case, the cancer would be considered the underlying cause of death, since it gave rise to the operation, the pneumonia, and eventually, the death. Years of alcohol abuse and alcoholism may lead to liver failure. In such a case, the underlying cause is determined to be alcoholic hepatic failure. This last case is drawn from death records in Montana Vital Statistics. Both the real and hypothetical cases are considered deaths from natural causes.

When a death involves an external event—an accidental poisoning, or a traumatic event such as a motor vehicle accident, other accident, homicide, or suicide—that event is chosen as the underlying cause. If a decedent loses consciousness because of excessive alcohol consumption and suffers hypothermia, the underlying cause of death is classified as exposure to natural cold—an accident. A depressed decedent, intoxicated with alcohol, who discharges a rifle in his mouth is assigned an underlying cause of self-harm by rifle shot—a suicide. A speeding driver, intoxicated with alcohol, who drifts off the highway, overcorrects, begins to roll his vehicle, is ejected after hitting a power pole, and suffers cerebral herniation and edema is assigned an underlying cause of collision with a stationary object—a motor vehicle accident. These cases are also drawn from Montana death records. Notice that alcohol is not included as part of the underlying cause of death when a traumatic event is mentioned as a cause.

Alcohol-Induced Deaths

The National Center for Health Statistics has published a list of causes of what that agency refers to as “alcohol-induced” deaths. These causes are underlying causes classified and tabulated according to a selected set of cause-of-death groupings chosen from the International Statistical Classification of Diseases, Injuries, and Related Health Problems, Tenth Revision, or, as it is commonly called, ICD-10.

Causes of Alcohol-Induced Deaths ICD-10 Codes and Descriptions for Underlying Causes

ICD-10 CODE	DESCRIPTION
E24.4	Alcohol-Induced Pseudo-Cushing's Syndrome
F10	Mental and Behavioral Disorders Due to Alcohol Use
G31.2	Degeneration of Nervous System Due to Alcohol
G62.1	Alcoholic Polyneuropathy
G72.1	Alcoholic Myopathy
I42.6	Alcoholic Cardiomyopathy
K29.2	Alcoholic Gastritis
K70	Alcoholic Liver Disease
K86.0	Alcohol-Induced Chronic Pancreatitis
R78.0	Finding of Alcohol in the Blood
X45	Accidental Poisoning by and Exposure to Alcohol
X65	Intentional Self-Poisoning by and Exposure to Alcohol (Suicide)
Y15	Poisoning by and Exposure to Alcohol, Undetermined Intent

Source: Deaths: Final Data, 2004. National Vital Statistics Reports. Vol. 55, No. 19, August 21 2007.

Tabulation of alcohol-induced mortality among Montana residents in the years 2003 through 2007 shows that 615, or about 1.46% of all deaths in this period, were alcohol-induced. The vast majority of these deaths (591) were from natural, i.e. non-traumatic, causes. Only 22 of these deaths were accidents and two were suicides.

Alcohol-Related Deaths

One can add a handful of causes of death also associated with alcohol abuse to the list above. These causes are shown in the table below.

Additional Causes of Alcohol-Related Deaths ICD-10 Codes and Descriptions for Underlying Causes

ICD-10 CODE	DESCRIPTION
O35.4	Maternal Care for (Suspected) Damage to Fetus from Alcohol
P04.3	Fetus and Newborn Affected by Maternal Use of Alcohol
Q86.0	Fetal Alcohol Syndrome (Dysmorphic)
T51.0	Toxic Effect of Ethanol
T51.9	Toxic Effect of Alcohol, Unspecified
Z71.4	Alcohol Abuse Counseling and Surveillance

Adding these causes to the list of causes for alcohol-induced deaths and searching for mention of any of them—not just among the underlying causes, but among all of the multiple causes listed on the death record—yields a larger group of records. For each of these deaths, the medical certifier, usually a physician or coroner, felt alcohol abuse played a large enough role in the death to make it worth mentioning on the death certificate. This group of records can be called the “alcohol-related” deaths.

A tabulation of the alcohol-related deaths among Montana residents in these same years shows that 1,419 deaths, or about 3.383% of all deaths, were alcohol-related (Table 1). **This number is about 2.3 times as many as the alcohol-induced deaths.** Again, the vast majority of these deaths (992) were from natural, i.e. non-traumatic, causes. However, the distribution of deaths involving traumatic events was strikingly different. Motor vehicle accidents accounted for 186 of these deaths, 155 were non-motor-vehicle accidents, 72 were suicides, and 14 were homicides.

Table 1: Alcohol-Related Deaths

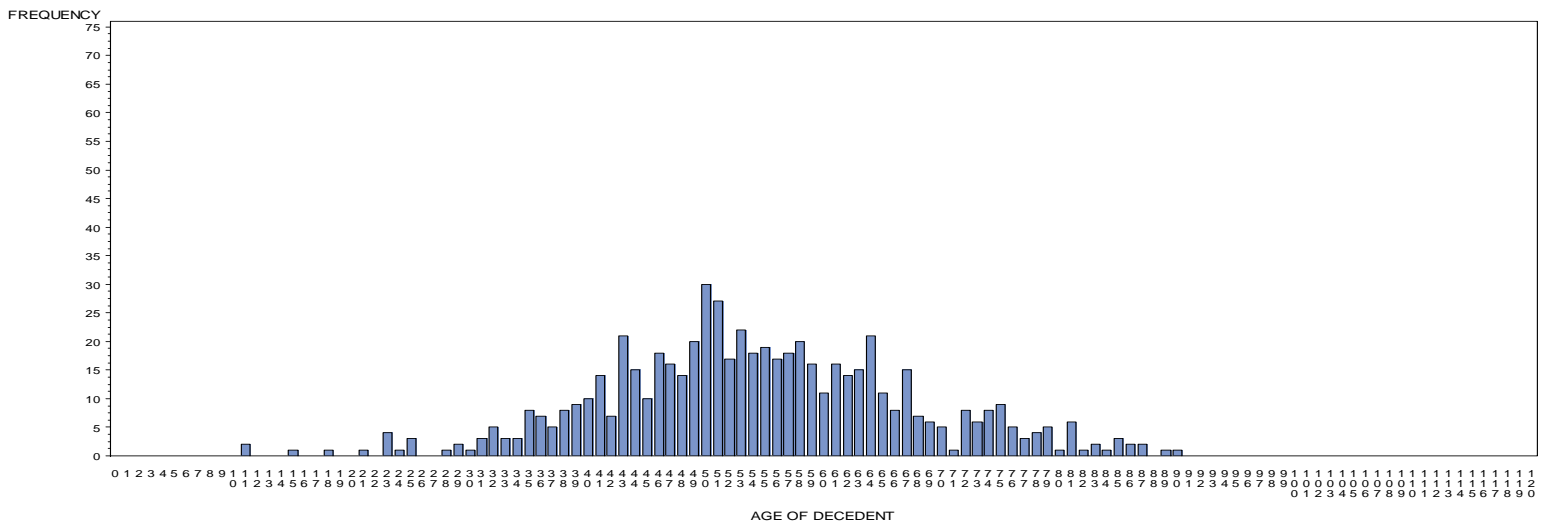
All Deaths Montana Residents 2003-2007	Deaths Induced by Alcohol		Deaths for which Alcohol is Mentioned	
	Number	Percent	Number	Percent
42,029	615	1.46	1,419	3.38

Source: Office of Vital Statistics, Montana Department of Health and Human Services

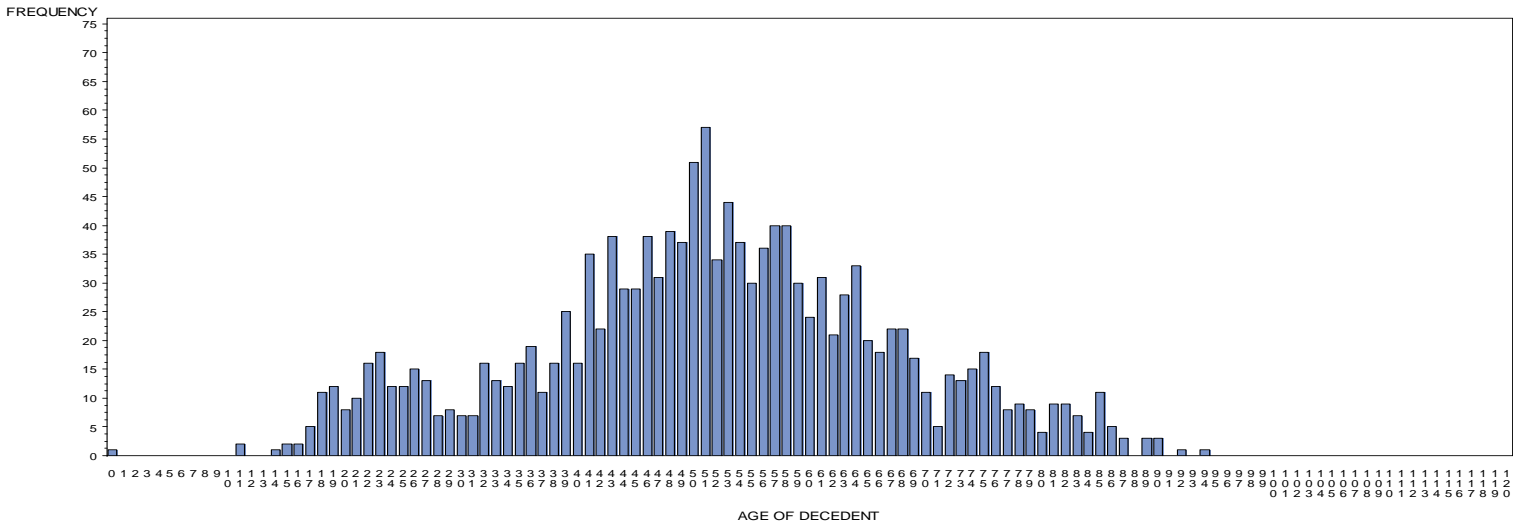
Age Distributions

The ages of decedents at the time of death also differ greatly between the two groups. The histograms below show, respectively, the age distributions of decedents who died of alcohol-induced and alcohol-related causes. The following two charts depict the age of decedents for both alcohol-induced deaths and alcohol-related deaths.

Age of Decedents for whom Alcohol Abuse was the Underlying Cause of Death
(Alcohol-Induced Deaths)
Montana Residents, 2003-2007



Age of Decedents for whom Alcohol Abuse was One of the Multiple Causes of Death
(Alcohol-Related Deaths)
Montana Residents, 2003-2007



There are more decedents of all ages in the alcohol-related group since this group necessarily includes the alcohol-induced group, but it is also notable that adolescents and young adults are much more prominently represented in the alcohol-related group. There is also an infant death included in the alcohol-related group, emphasizing the alcohol’s potential role in infant mortality.

Summary

Changing the focus from underlying cause of death (the alcohol-induced focus) to all of the multiple causes (the alcohol-related focus) allows us to see more clearly the association of alcohol abuse with deaths also involving traumatic injury. While the alcohol-induced perspective specifically excludes most accidents, an alcohol-related perspective includes all homicides and suicides indirectly related to alcohol, as well as deaths of newborns associated with maternal alcohol use. An alcohol-related perspective brings the role of alcohol abuse in such deaths into sharp focus.

Not only are more causes of death—and the relationships of those causes—included in the alcohol-related focus, but the association of alcohol use with the deaths of a younger population is brought to light by examining all of the multiple causes of death. These changes have substantive implications for the formulation of prevention strategies in public health and also for the estimation of the unintended costs of alcohol abuse on our society. Perhaps estimates provided by the alcohol-induced focus should be viewed as a lower bound of the excess mortality related to alcohol abuse. Similarly, estimates made using the alcohol-related focus could be seen as a reasonable approximation to an upper bound.

Death records provide only an imperfect measure of the mortality-related impact of alcohol abuse. For the vast majority of deaths, no autopsy or toxicology screen is available for use by the medical certifier, making it likely that alcohol abuse is understated on the death certificate, regardless of whether the underlying cause or all causes provide the basis for selecting records for analysis.

Another limitation arises from the fact that the death record refers to the condition of the decedent only. The alcohol abuse of another driver who may have caused a fatal motor vehicle accident or the intoxicated assailant who may have committed a homicide are not on the decedent's death record.

A final caveat is that the death record is not a complete medical history. Medical certifiers of the causes of death may very well be unaware of a decedent's past abuse of alcohol and the role it may have played in a death, again resulting in an undercount of decedents with such a history.

***Behavioral Risk Factor Surveillance System:
Quality Improvements in Data Collection
and
2008 Binge Drinking Module Results***

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Behavioral Risk Factor Surveillance System

Quality Improvements of Montana BRFSS:

Montana DPHHS has participated in the BRFSS annually since 1984 and it continues to be a key source of health trends and risk behaviors for the state. This system serves as the main source of survey data of adult Montanans for assessing chronic disease risk and monitoring the effectiveness and public awareness of policies, programs and interventions. BRFSS also helps to monitor the progress toward achieving Healthy People 2010 and future objectives designed to improve the health of all Americans through prevention.

The Montana BRFSS has expanded the usefulness of the data and survey system for state data users and investigators. The sample size has increased from 855 in 1984 to over 6,400 in 2009. The number of questions included in the annual survey increased from 45 questions in 1984 to 165 in 2009, and approximately 500 interviews are completed per month. In 2000, the Montana BRFSS sample was stratified into three strata (I - III) based on county population size and proportion of Native Americans in order to *over sample for Montana's largest minority population* and to establish baseline data for various health disparities. All published data from the MTBRFSS office is minimally characterized by the following: sex, age (6 categories), race/ethnicity (White, non-Hispanic, American Indian/Alaska Native and Other, Hispanic), educational attainment (4 levels), income (6 categories), disability status, geographic region, and can also be analyzed by marital and employment status as well as additional indicators as needed.

BRFSS is a weighted dataset that requires complex survey analysis techniques such as those found in SAS, SUDAAN or other statistical software that takes the survey design into account. Post-survey adjustments are becoming increasingly important for maintaining the representativeness of survey data. Beginning in 2003, the Montana dataset was weighted for regional analyses based on the respondents' sex and age in each of Montana's five health-planning regions. This weighting scheme has allowed sub-state level data analysis for specific indicators. These geographic regions also coincide with those found in the Montana Disability and the Montana Emergency Health Preparedness strategic plans. (A map of those regions can be found on the MTBRFSS website at www.brfss.mt.gov.) The BRFSS has also developed new

approaches (statistical ranking techniques) to adjust the data not only in terms of respondents' sex and age, but also race, education, marital status, and telephone coverage – variables all found to be significantly related to key health and risk outcomes on BRFSS.

Strategic planning by BRFSS staff over the past several years has also resulted in other sub-state level data. Montana has been participating in the Selected Metropolitan/Micropolitan Area Risk Trends (SMART) BRFSS program beginning in 2004. Stratum IV of Montana's sampling frame includes Yellowstone and Carbon Counties – Billings, Montana's largest metropolitan statistical area for inclusion in the SMART BRFSS program and this stratum has an annual sample size of 500. In order to obtain more city and county level data for the state, in the 2006 and 2007 surveys, Montana's next two largest MMSAs (Missoula and Cascade Counties) were added to the sampling frame with sample sizes of 500 each to achieve comparisons with other SMART BRFSS data. In 2008 and 2009, Silver Bow and Gallatin Counties have been included in the SMART BRFSS design, replacing Missoula and Cascade Counties. MTBRFSS plans to continue this rotational pattern for strata V and VI of the sampling frame in two-year rotational cycles for our next largest micropolitan statistical areas, so that at least Montana's most populated counties have city and county-level estimates approximately every 8-10 years. This strategy allows Montana to begin to further refine the analyses for county level information that is so critical for the state. MTBRFSS continues to evaluate the usefulness of this sampling frame and to adjust it as needed.

In addition, through the Montana BRFSS strategic planning process a second weighting scheme for BRFSS data is being considered that combines together counties that fit into each of the state's frontier, rural and urban areas to investigate the impact of such weighting on our prevalence estimates and the ability to relate to public health needs in the state. This sampling frame will allow an examination of survey results based on Montana's more populated versus less populated geographic areas for health information and planning purposes. In addition, the subject areas covered in the questionnaires have also expanded over time to include the needs of data users not typically part of this Public Health and Safety Division, such as Addictive and Mental Disorders, Senior and Long-Term Care, Montana Department of Justice, but whose work is nonetheless related to health conditions/diseases, health service utilization, and primary prevention concerns.

MTBRFSS continues current data collection activities in conformance with protocol established by the Behavioral Surveillance Branch of CDC and which are clearly stated in the BRFSS User's Guide at <http://www.cdc.gov/brfss>. MTBRFSS also participates in the cell phone and asthma callback studies addressing further surveillance needs in the state. Montana has participated in the Cell Phone Pilot study for the 2008 survey and is currently collecting 250 completed interviews for the 2009 survey following CDC protocol. In the 2010 survey year, at least 10% of Montana's completed surveys will be to cell phone only households in compliance with BSB standards. In 2008, Montana also tested the use of sending pre-notification letters on response rates. After six months of testing, they found no significant difference in cooperation or response rates and will not use them in the 2009 survey. However, Montana continues to work with CDC on multiple ways of collecting public health data. RDD non-response follow-up mailings will be added to the multi-mode sampling design for BRFSS. BRFSS and Montana are ready to engage in mixed mode survey methodology that is so critical for the changing technology and survey research in general.

Therefore, the Montana BRFSS program has expanded the use of the survey data by increasing sample sizes, over-sampling Montana's Native American populations, weighting the data for regional analyses and participating in supplements to the survey, such as the asthma callback survey, SMART BRFSS, and cell phone pilot studies. MTBRFSS is committed to collaborating with its varied and numerous partners to help measure the prevalence of high-risk behaviors and preventive-health service utilization to provide timely information for developing and monitoring interventions designed to reduce premature death and disease.

2008 MTBRFSS Binge Drinking Results:

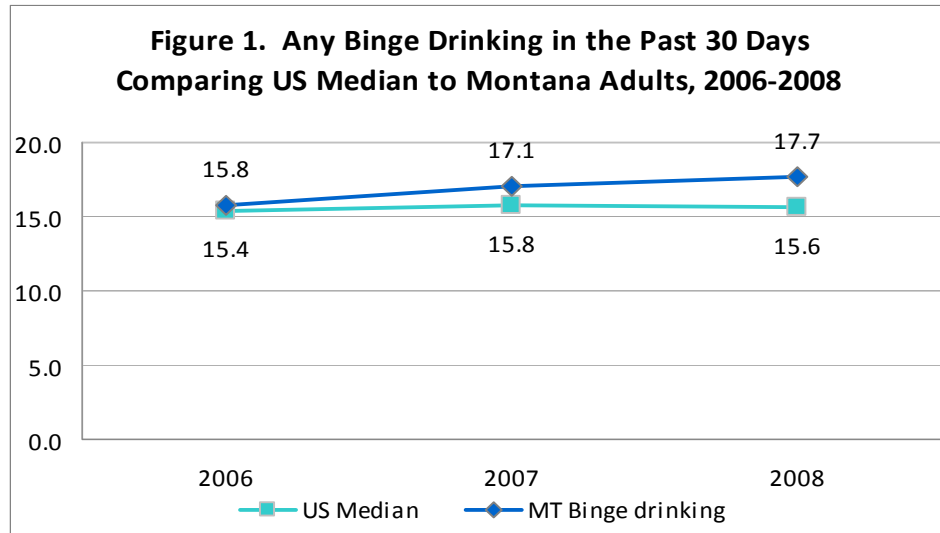
In 2003 and 2004, Montana BRFSS partnered with CDC's Alcohol Initiative Team who developed the Optional Binge Drinking Module and offered supplemental grant funding through the Robert Wood Johnson Foundation for fielding the module. In 2008, Montana BRFSS continued this collaboration with the Addictive and Mental Disorders Division and the SPF-SIG committee work. The results of the 2008 Binge Drinking Module are presented below.

Alcohol Consumption:

- Overall, 58% of Montana adults aged 18 and older reported having had at least one drink of any alcoholic beverage such as beer, wine, a malt beverage or liquor during the past 30 days.
- Males (67%) were significantly more likely to have had at least one drink in the past 30 days than were females (50%).
- The prevalence of drinking alcohol generally decreases as age increases. This includes significant decreases as the 55-64 (60%) and 65 and older (46%) age groups are attained compared to 25-44 years old (67%).
- Drinking alcohol increases as education increases. Thirty-six percent of adults with less than a high school education reported drinking at least one alcoholic beverage in the past 30 days. Comparatively, almost 54% of adults with a high school diploma, GED, or some college, and more than 70% of college graduates reported the same behavior.
- The prevalence of drinking generally increases as household income increases. This includes a significant increase as the \$75,000 or more income group (78%) is reached.

Binge Drinking:

Beginning in 2006 for BRFSS, binge drinking has been defined as having consumed five or more drinks on an occasion for men and for women consuming four or more drinks on an occasion, during the past 30 days. Montana has consistently had a higher prevalence of binge drinking when compared to the United States median. In 2008, the nationwide median (including 50 states and DC) was 15.6% compared to Montana binge drinking prevalence of 17.7% (16.2%-19.3%).



- Almost 18% of Montana adults aged 18 and older reported binge drinking in 2008, a slight though not significant increase since 2006 (16%). See Table 1 below.
- Prevalence estimates varied significantly by sex. Males (24%) were twice as likely to report binge drinking in the past 30 days than females (12%). This difference is demonstrated throughout almost every demographic category between the sexes.
- The prevalence of binge drinking decreases as age increases, with the first significant decrease occurring with the 45-54 age group ($\leq 18\%$ binge) and with only 4% of adults aged 65 and older reporting such behavior.
- Adults who reported a disability (either limited activity or requiring use of special equipment) were significantly less likely to report binge drinking in the past 30 days (13%) than adults with no disability reported (19%).
- For Selected Metropolitan/Micropolitan Area Risk Trends (SMART BRFSS) Montana included Butte – Silver Bow County (16.5%), Bozeman – Gallatin County (18.2%) and Billings – Yellowstone, Carbon Counties (18.9%) in the 2008 survey. Results from the available data do not show any statistically significant differences even though Bozeman’s binge drinking prevalence is almost 19%. Combining two years of data when 2009 results are available may reveal different conclusions with larger sample sizes allowing more precise estimates.
- For education, household income, race/ethnicity and geographic region, there were no statistically significant differences observed from the available data.

Table 1. Binge Drinking, Montana Adults, 2008
(with 95% confidence intervals)

	Binge Drinking (past 30 days)		
	Unwt. N.	Wt.%	95% CI
All Adults	900	17.7	16.2 - 19.3
Sex:			
Male	525	23.6	21.1 - 26.1
Female	375	12.0	10.3 - 14.0
Age:			
18 – 24	49	28.5	20.7 - 37.8
25 – 34	156	27.1	22.8 - 31.8
35 – 44	188	22.6	19.3 - 26.2
45 – 54	241	17.5	15.2 - 20.1
55 – 64	172	11.3	9.5 - 13.3
65+	90	4.1	3.2 - 5.3
Race/Ethnicity:			
White, non-Hispanic	781	17.6	16.0 - 19.4
AI/AN*	76	20.8	15.7 - 27.1
Other or Hispanic**	37	17.0	11.4 - 24.5
Education:			
<High School	56	13.7	9.9 - 18.7
High School	277	18.9	16.2 - 22.0
Some College	260	18.0	15.2 - 21.2
College Degree	305	17.1	14.7 - 19.8
Income:			
<\$15,000	77	15.6	11.0 - 21.6
\$15,000 - \$24,999	138	15.8	12.5 - 19.7
\$25,000 - \$49,999	244	17.9	14.9 - 21.4
\$50,000 - \$74,999	173	20.7	17.0 - 24.9
\$75,000+	209	22.4	19.1 - 26.2
Disability:			
Disability	190	13.4	10.9 - 16.2
No Disability	706	19.2	17.4 - 21.1

Region:

1- Eastern MT	130	21.4	17.5 - 25.9
2- N Central MT	145	17.0	13.8 - 20.7
3- S Central MT	123	18.1	14.7 - 22.0
4- Southwest MT	254	17.5	14.5 - 21.0
5- Northwest MT	238	17.5	14.8 - 20.7

MMSA:

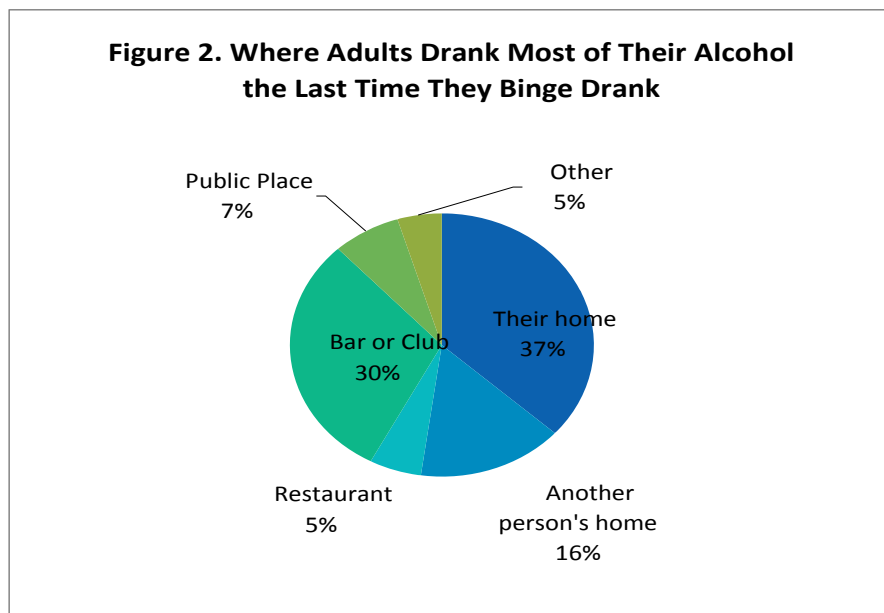
Butte-Silver Bow	70	16.5	12.2 - 20.8
Billings - MMSA	73	18.2	13.5 - 22.9
Bozeman - MMSA	84	18.9	14.0 - 23.8

* American Indian or Alaska Native only

** All other non-White (including multiracial) or Hispanic

Further Analysis:

Where were they during their most recent binge drinking occasion? The most frequently reported place for their last binge drinking occasion was at their home (37%) followed by at a bar or club (30%) and at somebody else's home (16%). There was no significant difference, however, between one's own home and a bar/club.



During the respondent's most recent binge drinking occasion, *approximately how much did they pay for the alcohol they drank?* Excluding the 7% that didn't know or were not sure how much

they spent binge drinking, Table 2 shows that the majority of respondents reported spending less than twenty dollars during their most recent binge drinking episode and 11% reported that the drinks were free or paid for by others.

Table 2. Amount Paid for the Alcohol They Drank During Most Recent Binge Drinking Occasion Montana Adults, 2008			
Adults Most Recent Binge Drinking Occasion			
	Unwt. N	Wt. %	95% CI
Paid for Alcohol			
Paid Nothing; Free	47	10.5	7.2 - 15.1
<=\$10	71	27.2	19.7 - 36.4
\$11 to \$20	108	39.1	29.9 - 49.1
\$21 to \$30	37	11.6	7.6 - 17.3
\$31 to \$50	10	2.8	1.3 - 6.2
>= \$51	27	8.7	5.4 - 14.0

As part of the core BRFSS survey, respondents are regularly asked if *they had driven a car after having had too much to drink in the past 30 days*. Approximately 5% of respondents reported driving after drinking alcohol (see Table 3 on the next page).

Table 3. Drinking and Driving and Binge Drinking and Driving, Montana Adults, 2008
(with 95% confidence intervals)

	Any Drinking & Driving (past 30 days)			Drinking & Driving (most recent binge occ.)		
	Unwt. N.	Wt.%	95% CI	Unwt. N.	Wt.%	95% CI
All Adults	158	4.9	3.9 - 6.2	105	11.1	8.4 - 14.4
Sex:						
Male	99	6.4	4.8 - 8.6	68	11.1	8.0 - 15.2
Female	59	3.0	2.1 - 4.2	37	11.1	6.8 - 17.5
Age:						
18 - 24	8	9.0	3.7 - 20.5	not sufficient data		
25 - 34	32	7.2	4.7 - 11.0	20	11.7	7.0 - 19.1
35 - 44	30	5.9	3.7 - 9.1	19	8.4	4.7 - 14.7
45 - 54	46	4.6	3.2 - 6.4	30	11.1	7.3 - 16.4
55 - 64	31	2.9	1.8 - 4.5	19	12.8	7.4 - 21.2
65+	10	0.9	0.4 - 1.9	11	11.5	5.4 - 23.1
Race/Ethnicity:						
White, non-Hispanic	139	4.6	3.5 - 5.9	93	11.0	8.2 - 14.5
AI/AN*	13	9.7	4.6 - 19.1	not sufficient data		
Other or Hispanic**	5	8.2	2.7 - 22.5	not sufficient data		
Education:						
<High School	6	5.6	1.7 - 17.1	5	5.4	1.8 - 14.9
High School	44	4.5	2.8 - 7.1	28	10.0	5.7 - 16.8
Some College	57	7.2	4.7 - 10.8	44	16.9	11.1 - 24.7
College Degree	51	3.8	2.6 - 5.4	28	7.9	4.9 - 12.5
Income:						
<\$15,000	12	4.8	2.1 - 10.8	5	2.7	0.9 - 8.0
\$15,000 - \$24,999	15	4.5	1.7 - 11.7	15	13.9	7.1 - 25.4
\$25,000 - \$49,999	53	6.2	4.0 - 9.5	32	9.7	6.1 - 15.2
\$50,000 - \$74,999	37	5.8	3.8 - 8.9	23	17.4	9.7 - 29.3
\$75,000+	36	4.5	3.0 - 6.7	23	9.1	5.5 - 14.8
Disability:						
Disability	39	5.8	3.3 - 10.0	25	13.3	7.9 - 21.5
No Disability	119	4.7	3.7 - 6.1	80	10.6	7.7 - 14.4

* American Indian or Alaska Native only

** All other non-White (including multiracial) or Hispanic

In the optional binge drinking module, respondents were also asked *if they drove a motor vehicle, such as a car, truck or motorcycle during or within a couple of hours after their last binge drinking episode*. The results show that 11% of Montana adults reported binge drinking and driving. There were no significant statistical differences observed in the sociodemographic subgroups, except adults in households earning less than \$15,000 (3%) were significantly less likely to report binge drinking and driving than adults in households earning \$50,000 to less than \$75,000 per year (17%).

Healthy People 2010, Objective 26-11c sets a goal to:

Reduce the proportion of adults aged 18 years and older who engage in binge drinking in the past 30 days to 6%.

UPDATES AND ADDITIONAL RESEARCH ON RELEVANT DATA

In addition to the research on priority indicators, the Montana SEW undertook analysis on data relevant to the identified priorities. This section highlights that research. One piece is included on a substance abuse problem, prescription drug abuse, that is not an identified priority but additional outside research shows it to be an increasingly prevalent problem in Montana. Thus, in light of the new research and to inform the general debate in the State, a section is included on that substance abuse problem.

Report Abstracts:

➤ **Prescription Drug Abuse**

This report addresses the growing overuse and abuse of prescription drugs, especially painkiller prescription drugs as one of the fastest-growing drug abuse problems in Montana. Data used includes coroner death data identifying deaths from both overuse and illegal use of painkiller prescription drugs. Painkiller deaths come from both unintended misuse and overdoses from abuse and addiction. Misuse of patches containing painkillers such as Fentanyl and from misuse of painkillers with alcohol or with other drugs are examples of unintended misuse.

➤ **Crime Data in Montana: Issues and Uses**

This section includes an overview of the Montana Board of Crime Control's Incident-Based Reporting System that collects crime data from Montana's non-Tribal local law enforcement agencies. Some of the measurement issues are reviewed, which in general includes incomplete and inaccurate crime reports, over- and under-reporting of offenses, and misclassification. Specific mention is made on the reporting issues around liquor law violations and the steps being taken to encourage Montana's Tribal agencies to voluntarily participate in the reporting system.

➤ **State Trauma Registry: Impact of Alcohol-related Injuries**

This is an overview of the Montana State Trauma Registry (STR), which has collected and analyzed hospital data for severely injured patients since the early 1990's. In addition to the overview, data from the STR for 2008 is analyzed for alcohol-use by gender, cause of injury, trauma region, month of admittance, and primary payor source. The data limitations are also discussed.

➤ **Economic Impact of Alcohol Abuse**

This study attempts to quantify the cost to the economy of the State of Montana of the unwanted and undesirable consequences of alcohol consumption. Many, but not all, of these costs are paid out directly by individuals, businesses and governments. These include costs paid to support treatment centers that perform detoxification services, those dollars spent imprisoning criminals whose crimes can be attributed to alcohol abuse, and the money spent on medical treatment for alcohol-related injuries and medical conditions. But many of these costs represent opportunities for gain that are foregone due to alcohol. These range from the cost businesses bear when their workers show up late or hung-over from drinking, to when alcohol results in death and the tragic loss of a future productive life that would otherwise have occurred.

➤ **Economic Impact of Problem Drinkers in Montana**

This analysis uses the 2008 report on the Economic Impact of Alcohol Abuse in Montana to calculate the cost of the average problem drinker in Montana. It then looks at the specific Montana SPF SIG communities funded by this project to give a breakdown of the economic cost of alcohol abuse for counties that are actively working on environmental prevention strategies.

Prescription Drug Abuse

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Prescription Drug Abuse

Overuse and abuse of prescription drugs, especially painkiller prescription drugs is one of the fastest-growing drug abuse problems in Montana. Coroner death data identify deaths from both overuse and illegal use of painkiller prescription drugs. Painkiller deaths come from both unintended misuse and overdoses from abuse and addiction. Misuse of patches containing painkillers such as Fentanyl and from misuse of painkillers with alcohol or with other drugs are examples of unintended misuse.

Coroner reported deaths from fatal overdoses of prescription painkillers increased 53% since 2001. Coroner deaths identifying primary cause of death from hydrocodone, methadone, oxycodone, and fentanyl went from 92 deaths in 2001 to 149 in 2007.

Coroner Deaths¹ Involving Prescription Painkillers and Meth (Montana, 2001-2007)

Drug	2001	2002	2003	2004	2005	2006	2007
Hydrocodone	33	57	32	53	41	44	49
Methamphetamine	N/A	10	23	35	28	11	8
Methadone	19	30	53	48	36	57	34
Oxycodone	35	46	48	65	46	45	46
Fentanyl	5	10	12	14	9	16	12
Selected Drugs, Total	92	153	168	215	160	173	149

¹ Where the indicated drug was the primary cause of death.

Source: Montana Department of Justice, Forensic Science Division, State Crime Lab

The annual number of deaths from painkillers is much higher in number than deaths from meth use which peaked in 2004 at 35 deaths and declined by 2007. Although methamphetamine addiction is a serious problem, particularly among 20 to 30 year olds, the level of public attention and state legislative action has, until recently, been disproportionately greater than the public health focus on painkillers and prescription drug abuse in Montana.

Toxicology cases involving prescription drugs are another measure of drug abuse in Montana. Coroner deaths are based on the primary cause of death whereas toxicology cases refer to autopsies where the drug tested positive for presence in the body although it is not known whether the drug contributed to the death. This somewhat weaker 'present but not necessarily contributing' criterion for toxicology cases makes for higher counts compared to coroner verified deaths due to drugs.

Toxicology cases based on autopsies where the drugs were present but not necessarily the primary cause of death increased from 196 to 730 cases between 2001 and 2007.

Deaths and toxicology cases from prescription painkillers were higher than cases from methamphetamines. Toxicology cases with meth were extremely high peaking in 2004 and dropping back to lower, yet alarmingly high levels by 2007.

Toxicology Cases¹ Involving Prescription Painkillers and Meth (Montana, 2001-2007)

Drug	2001	2002	2003	2004	2005	2006	2007
Hydrocodone	100	127	141	249	213	247	220
Methamphetamine	N/A	176	413	625	584	352	265
Methadone	28	54	80	103	94	131	96
Oxycodone	62	94	107	156	129	140	132
Fentanyl	6	10	14	16	11	19	17
Selected Drugs, Total	196	461	755	1149	1031	889	730

¹ Where the indicated drug was present at autopsy, but was not necessarily a contributing factor to the primary cause of death.
Source: Montana Department of Justice, Forensic Science Division, State Crime Lab

Nationally, rates of non-medical use of prescription painkillers are the second highest of illegal drug use, second only to marijuana use. Montana has one of the highest rates of painkiller use among 12 to 17 year olds with a rate of 9.6% compared to a national rate of 7% for the 2005-2006 survey period. Montana was the third highest state in the nation for non-medical use rates of prescription drugs by teenagers for the two survey periods of 2004-2005 and 2005-2006.

Non-medical use of painkillers for young adults between the ages of 18 and 25 also show Montana use rates higher than national rates.

Montana's alarmingly high non-medical use rates of painkillers have been overshadowed by political attention on methamphetamine use. The state's problem of meth use certainly shows up in the toxicology case data, however, coroner deaths and toxicology cases from painkiller abuse have exceeded the numbers of deaths and toxicology cases from meth use.

However, all data show that alcohol abuse remains the number one drug problem in Montana after tobacco use. Binge drinking and drinking and driving affect more Montanans than any other drug after consumption of tobacco, a problem receiving some resources from the tobacco settlement money.

Crime Data in Montana: Issues and Uses

Jimmy Steyee
Statistician

Board of Crime Control
Department of Justice

Incident-Based Reporting Overview

The Montana Board of Crime Control (MBCC) is the state's designated Uniform Crime Reporting agency. The MBCC collects incident-based crime data from Montana's non-Tribal local law enforcement agencies. It collects incident-based crime data from about 100 sheriff and police departments statewide, covering over 95% of the state's population. Known as the Montana Incident-Based Reporting System (MTIBRS), it collects crime information on 57 different crime categories and 58 different data elements. The MTIBRS is a 100% certified FBI NIBRS program. The program has been audited biannually by the FBI for accuracy and consistency.

MTIBRS reports are typically sent to the MBCC on a monthly basis by local law enforcement agencies. The reports are generated from crime incident information entered into local law enforcement agencies records management systems. The reporting of crime data is *voluntary* in nature, but is tied to grant funding from the MBCC.

MTIBRS data is local law-enforcement crime data taken from crime reports. Further, only crimes known to law enforcement are represented in this database; and it is not crime data based off court records or case dispositions. The offense(s) reported to the MTIBRS does not necessarily reflect the charging offense or the adjudicated crime, as that is determined in the local court system.

Measurement Issues

Some measurement issues in general include incomplete and inaccurate crime reports; over- and under-reporting of offenses, and misclassification. For the purpose of the Montana Community Change Project, I will only touch on a few issues.

A voluntary reporting program has some inherent issues that can lead to incomplete and inaccurate reporting. The nature of certain crimes can lead some agencies to under-report so that a "better picture of the community" will be represented. For example, due to the nature of sex crimes such as rape, a small close knit "safe" community may tend to under-report these offenses by reporting a "pled-down" offense. The MBCC encourages law enforcement agencies to report law enforcement contact as opposed to court charges and/or dispositions.

Liquor law violations tend to be underreported in some communities because of the cultural acceptance of alcohol use in Montana. However, this may be changing due to programs such as the Montana Community Change Project. An example of law enforcement agencies under-reporting MIPs is when some teenagers are caught with alcohol, but released with a warning and

no official record of the warning is tracked. The MBCC recommends that a crime report is sent with a MIP violation even when warnings are issued.

DUIs are under-reported by MBCC because it does not collect crime information from the Montana Highway Patrol. According to the *Montana Highway Patrol 2007 Annual Report*, the MHP issued 2,375 DUI citations.¹ All of which were not reported to the MBCC's MTIBRS. In 2007, 7,588 DUIs were reported to the MBCC by non-tribal local law enforcement. Tribal law enforcement reported another 1,630 DWI offenses in 2007.² In 2007, about 65% of the DUIs/DWIs were reported to the MTIBRS.

Alcohol Use Flag

The MTIBRS system collects a data element used to track alcohol, drug, and computer use by offenders. The data element is described as "offender(s) suspected of using". Up to 3 entries are allowed. For example, an offender could be suspected of using drugs and alcohol during one incident. This data element is mandatory, and a "not-applicable" data value is acceptable. The data is available at the community level and is dependent upon if the local law enforcement agencies representing those communities report crime data to the MBCC.

Some measurement issues using this data element can exist, including under-reporting because it requires that law enforcement make a determination of alcohol or drug use based on the evidence. Often, this data element relies on the victim(s) account of the offense, or some other piece of information that is not always present.

Native Lands

Currently, Tribal Nations do not report crime data directly to the MBCC's MTIBRS program. The MBCC however, is taking steps to encourage Montana's tribal agencies to voluntarily report.

Through a Bureau of Justice Statistics, State Justice Statistics grant the MBCC has been able to collect, compile and analyze tribal crime data from Tribal Nations in the Northwest, including all of Montana's land based tribes (excluding the landless Little Shell Tribe). Through a cooperative partnership with the BIA, BJS, and Tribal Law Enforcement Agencies, the MBCC collected tribal crime data over a five year period (2004–2008). The 2004–2008 crime statistics were compiled from over 40 Tribal Law Enforcement Agencies in six states including: Alaska,

¹ Montana Highway Patrol Records Management Section. March 2008. "Montana Highway Patrol 2007 Annual Report". Montana Highway Patrol.

² Leonardson, Gary R. July 2009. "Native American Crime in the Northwest: 2004 – 2008 – BIA Information from Alaska, Montana, Wyoming, Idaho, Oregon, and Washington." Prepared for the Montana Board of Crime Control.

Idaho, Montana, Oregon, Washington, and Wyoming. The 2004 – 2008 report has been completed and is currently under review. The MBCC’s Statistical Analysis Center has a pending request to continue the data collection through 2009.

The BIA collects crime data from tribal agencies according to a summary-based method. Tribal agencies report monthly on 46 Part 1 & 2 offense codes. The total number of “drug-related” and “alcohol-related” offenses is reported by crime category. It is unclear how “drug-related” and “alcohol-related” are defined in this context, which leads to some data integrity issues. The interpretation of meaning could vary by tribal agency.

Alcohol Involvement in Crime

Using MTIBRS data, in 2008, about 27% of all non-Tribal offenses were committed where the offender(s) was suspected of using alcohol (Table 1 below). Excluding liquor law violations and DUIs, offenders were suspected of using alcohol during 17.1% of the remaining offenses (Table 1A).

Table 1³		
All Non-Tribal Electronic Reporting Agencies		
Offender(s) Suspected of using Alcohol and Drugs		
All Offenses		
January 1, 2008 to December 31, 2008		
Offender(s) Suspected of Using	Total	% of Total
Suspected of using alcohol	25776	26.8%
Suspected of using drugs	5042	5.2%
Total Reported Offenses	96309	100.0%

Table 1A⁴		
All Non-Tribal Electronic Reporting Agencies		
Offender(s) Suspected of using Alcohol and Drugs		
All Offenses Excluding Liquor Law Violations and DUI		
January 1, 2008 to December 31, 2008		
Offender(s) Suspected of Using	Total	% of Total
Suspected of using alcohol	14173	17.1%
Suspected of using drugs	4676	5.6%
Total Reported Offenses	83101	100.0%

³ Montana Incident-Based Reporting System. Montana Board of Crime Control. Custom Data Extract. July 6, 2009.

⁴ Montana Incident-Based Reporting System. Montana Board of Crime Control. Custom Data Extract. July 6, 2009.

The most commonly reported offenses where the offender(s) was suspected of using alcohol in 2008, excluding those offenses where alcohol use is inherent, are negligent manslaughter (46.2%), disorderly conduct (43.2%), aggravated assault (42.2%), simple assault (41.2%), and non-negligent manslaughter (33.3%)⁵.

Tribal Crime Data

In 2008, Montana’s Tribal agencies reported 32,999 total offenses. About half, 49.7% were flagged as “alcohol-related” (Table 2). Excluding drunkenness, liquor law violations, and DWIs, about 27.1% of the offenses were flagged as “alcohol-related” (Table 2A), which is above the state percentage.

Table 2
 All Montana Land Based Tribal Agencies
 All Offenses
 Alcohol and Drug Related
 January 1, 2008 to December 31, 2008

Offender(s) Suspected of Using	Total	% of Total
Suspected of using alcohol	16401	49.7%
Suspected of using drugs	523	1.6%
Total Reported Offenses	32999	100.0%

Table 2A
 All Montana Land Based Tribal Agencies
 All Offenses Excluding Drunkenness, Liquor Law Violations and DWI
 Alcohol and Drug Related
 January 1, 2008 to December 31, 2008

Offender(s) Suspected of Using	Total	% of Total
Suspected of using alcohol	5441	27.1%
Suspected of using drugs	439	2.2%
Total Reported Offenses	20097	100.0%

In 2008, the most commonly Tribal reported alcohol-related offenses, excluding those offenses where alcohol use is inherent, are disorderly conduct (63.7%), child abuse (61.0%), homicide (47.1%), forcible rape (35.6%), sex offenses (35.5%), and domestic violence (35.5%).

⁵ In 2008, three bribery offenses were reported and 100% of them were reported where the offender was suspected of using alcohol. This offense was excluded because of the low sample size.

***State Trauma Registry:
Impact of Alcohol-related Injuries***

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State Trauma Registry: Impact of Alcohol-related Injuries

Overview

The Montana Trauma System is located in the Department of Public Health and Human Services, Chronic Disease Bureau in the EMS & Trauma Systems Section. As part of the Trauma System program, all Montana hospitals are required to submit data on patients who meet the state trauma registry inclusion criteria. The criteria specifies inclusion for any patient who has an injury and has any of the following conditions: admitted to the hospital for two or more days; admitted to the intensive care unit; taken directly from the emergency room to the operating room for any non-orthopedic repair; transferred to another hospital with higher level resources; dies; or activates the hospital trauma system. This data is submitted quarterly to the State Trauma Registry (STR), which is located in the EMS & Trauma Systems Section.

The State Trauma Program analyzes the STR data on a bi-annual basis for performance improvement indicators. Although not all hospitals consistently submit data to the STR, in 2009 to date, 43 hospitals (69%) have submitted data and in 2008, there were 3,219 records submitted to the STR. The data in the STR include over 100 non-identifiable elements which include: age, gender, location of injury, ICD-9 etiology, work-related, utilization of protective devices, transporting EMS response times, EMS vitals, hospital arrival times and vitals, ICD-9 procedures and diagnosis, total hospital and ICU days, hospital outcome, pre-existing conditions and complications, injury severity score, alcohol and drug status (if tested), payor sources, charges and collections. Selected data elements are validated for completeness and accuracy and if errors are found, hospitals are contacted and asked to resubmit corrected entries to the STR. Additional data validation processes are currently being developed.

Alcohol in Trauma Patients

The STR collects information on alcohol and drugs through several data elements. An Alcohol Use Indicator collects the following choice for any patient: *alcohol blood level was not tested; alcohol blood level was tested and was negative; alcohol blood level was tested and positive for trace amounts only; and alcohol blood level was tested and positive beyond legal limit.* An additional data element collects the blood alcohol content for those tested. A Drug Use Indicator collects the following for patients: *drug test was not conducted; drug test was conducted and results were negative; drug test was conducted and positive for prescription drugs; drug test was conducted and positive for illegal drugs.* The type of drug can be entered into the database as well; up to six types can be selected: Cannabis, cocaine, PCP, valium, barbiturates, narcotics, amphetamines, lidocaine, benzodiazepine, and other.

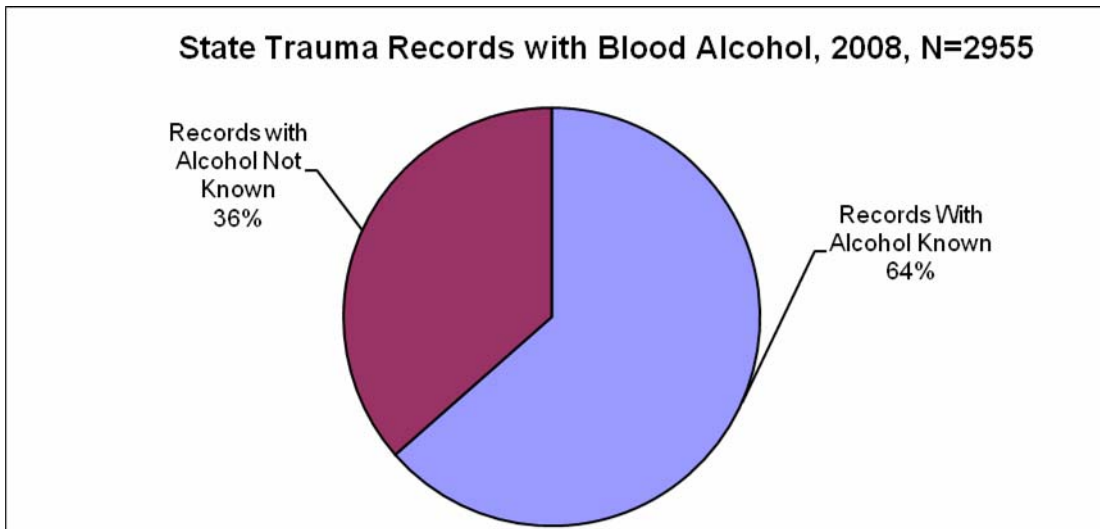
Data from the STR for 2008 was analyzed for alcohol-use. Of the 3,219 records, 2,955 were age 14 and older and were analyzed for the prevalence of alcohol. The justification for reviewing age 14 and older was determined from reviewing the data for patients age 8 to 13. Of those aged 8 to 13 years old, there were 88 records; 37% were tested for alcohol and all but one had a

negative blood alcohol level. The one record that had a blood alcohol level was well under the legal level of .08.

Data Findings

Analyzing the adolescent and adult population in the STR data, 33% were female and 67% were male. Of these records, 64% were tested for blood alcohol levels while in the emergency department. See figure 1.

Figure 1:



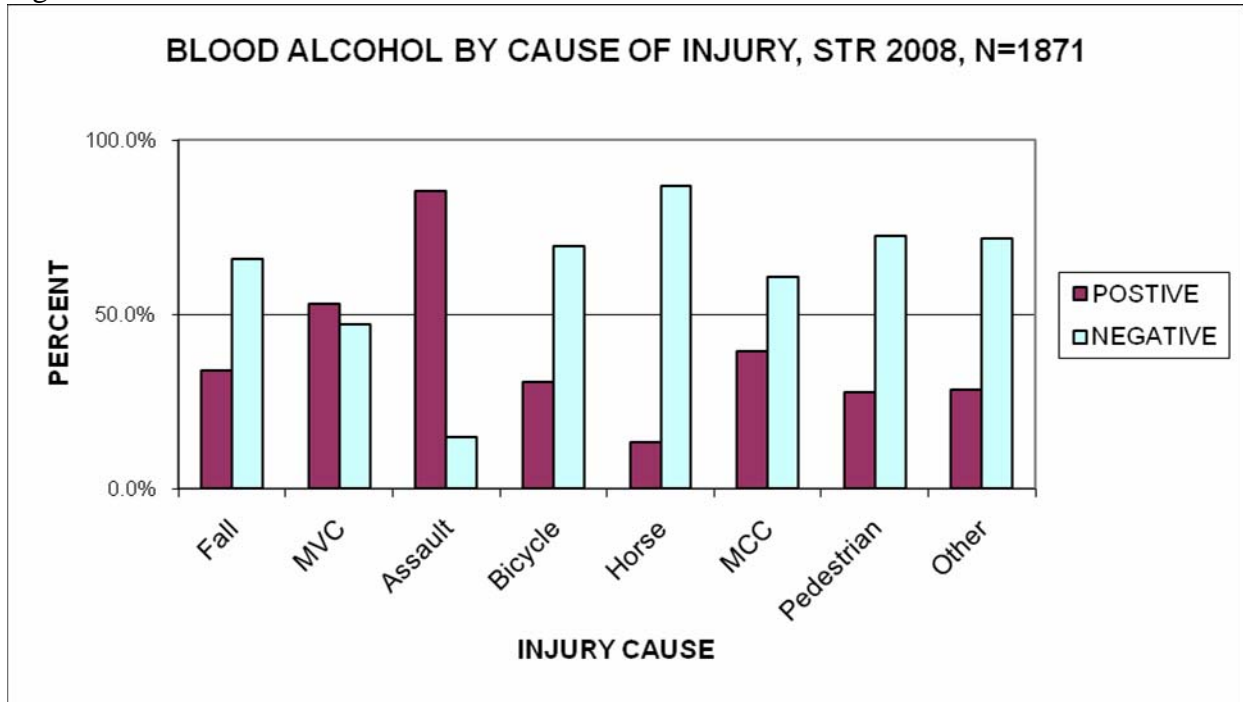
Of those tested, males were more likely to have a blood alcohol test than females, 66% and 58% respectively. Males were also more likely to have positive blood alcohol results as compared to females, but negative alcohol results were relatively high for both genders (50% male, 60% female). See figure 2

Figure 2:

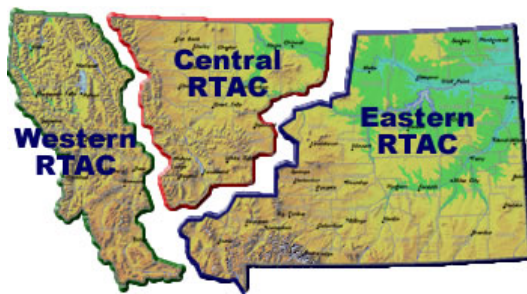


Comparing the cause of injury by blood alcohol level, assault and motor vehicle crashes had higher positive blood alcohol levels than the other injury mechanisms. Over half of the motor vehicle crashes and nearly 86% of the assaults had a positive blood alcohol level. A positive blood alcohol accounted for 1/3 of both falls and motorcycle crashes. See Figure 3.

Figure 3:

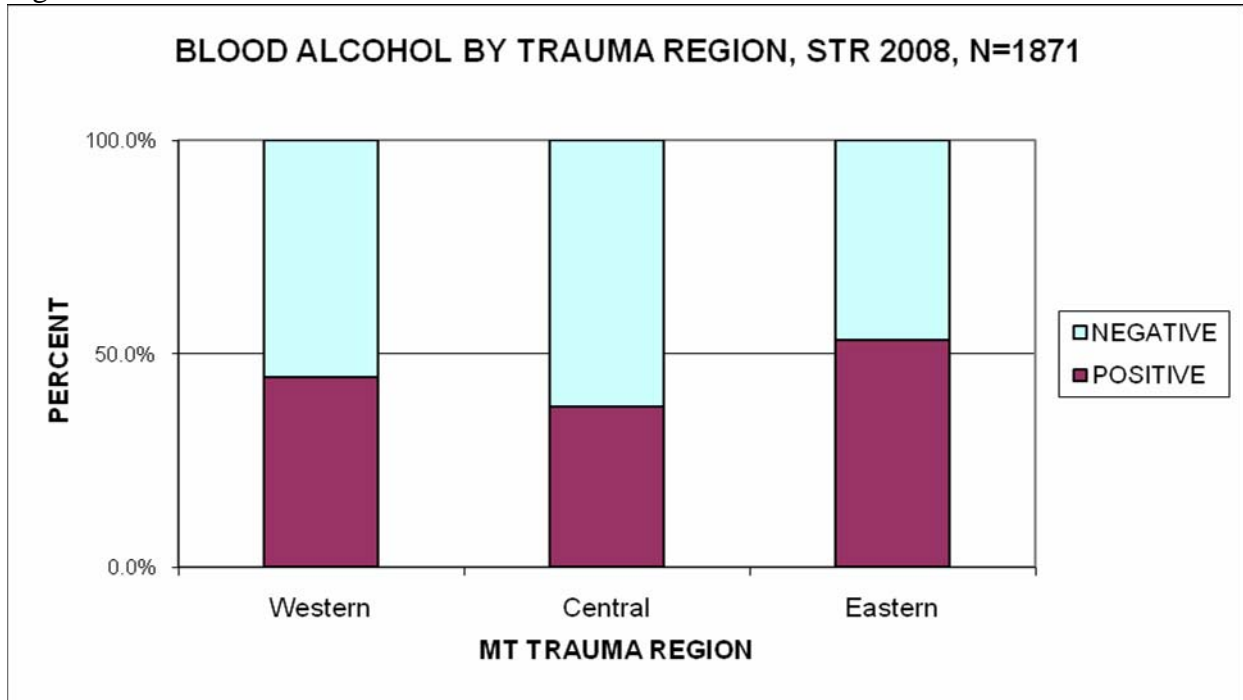


The STR collects and compares data regionally and stratifies the data by the MT Trauma Regions, established from the common interfacility transfer patterns between MT hospitals.



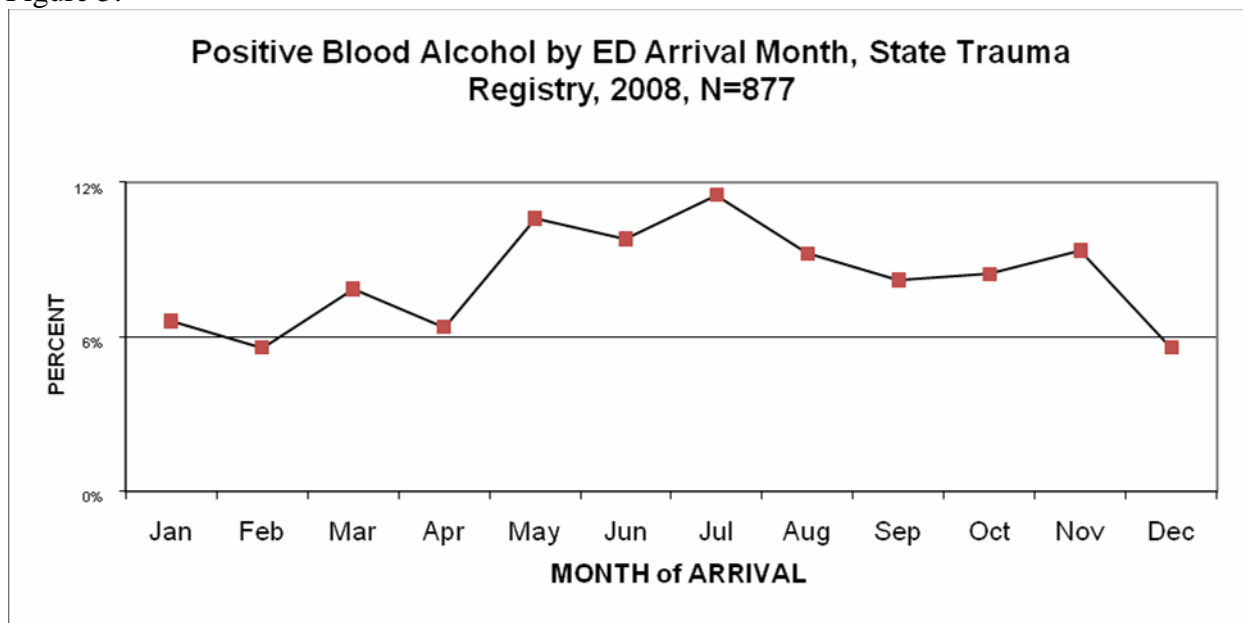
Comparing the records by trauma region, the Eastern Region had a slightly higher percentage of positive blood alcohol levels over the Central and Western Regions. See Figure 4 on the following page.

Figure 4:



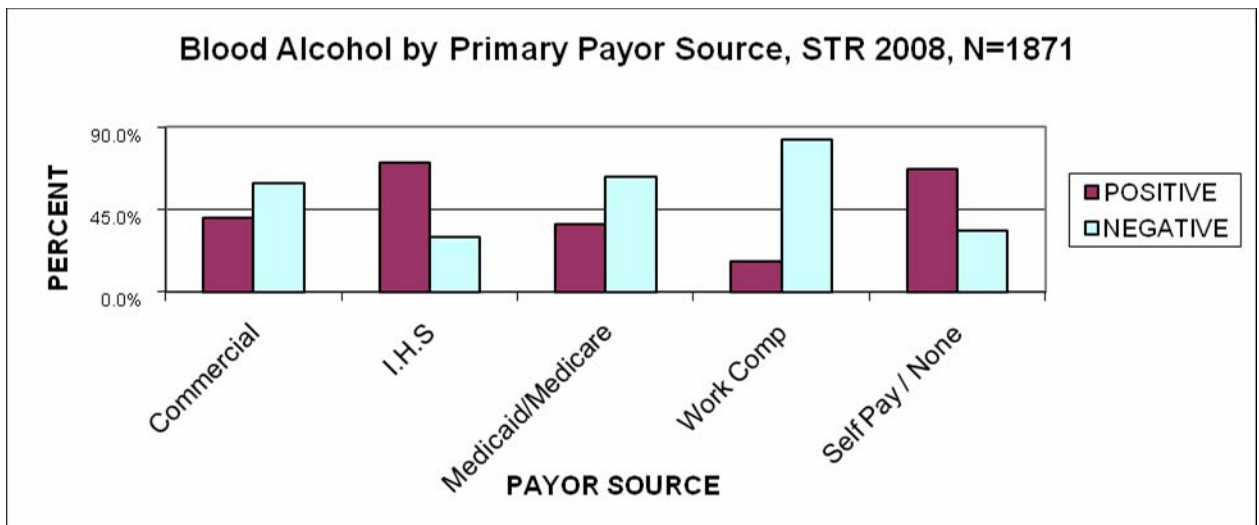
Conducting a cross comparison of positive blood alcohol by month of injury revealed that the months of May, June and July had a significantly higher number of positive results as compared to the other months. December through April appeared to have the fewest number of positive blood alcohols. See Figure 5.

Figure 5:



Analysis of the primary payor source by alcohol level revealed interesting findings as well. Patient records that had a primary payor source of either Commercial or Medicare/Medicaid insurance had fewer positive blood alcohol levels than patients whose primary payor was either Indian Health Services or Self Pay/No Insurance. Thirteen percent (13%) of the records that identified Worker Compensation as the primary payor had a positive blood alcohol. Of all the 2,955 records that listed a primary payor source, Commercial insurance accounted for 50%, I.H.S for 7%, Medicaid/Medicare for 21%, Worker Compensation for 13% and Self Pay/None for 18%. See Figure 6.

Figure 6:



Data Limitations

There are three limitations with the STR data. The first limitation, as mentioned in the overview, is that patients who are injured *and* meet the hospital trauma registry inclusion criteria are included in the data base. There are many patients who sustain minor or moderate injuries who are not accounted for in this data set. Injured patients seen at an emergency department who are not admitted for 2 or more days, not admitted to the intensive care unit, not taken to the operating room, do not activate the hospital trauma system, not transferred to a higher level of care hospital or who do not expire, are not included in the STR. The second limitation is that only a percentage of hospitals submit data regularly to the STR. The STR has been in existence since the early 1990's and since 2004, the four largest facilities in Montana (Billings Clinic, St. Vincent Healthcare, Benefis Hospital and St. Patrick Hospital and verified by the American College of Surgeons as Level II Trauma Centers) have submitted data to the STR. In 2006, the Montana Trauma System began a State Trauma Designation process which has increased the overall percentage of hospitals in MT that submit data. So far to date in 2009, 43 hospitals (69%) have submitted data to the STR. The State Trauma Program is actively working to continually increase the number of hospitals participating with the STR. The third limitation recognizes that not all patients are tested for blood alcohol. In 2008, 63% of the total records were tested for alcohol. Many facilities will include a blood alcohol test as part of lab panels for severely injured patients, but unless there is a reason to know the alcohol level for resuscitation

purposes, many emergency providers will not routinely test for alcohol and/or drugs. Overall, it is fairly safe to say that the majority of severely injured patients are captured in this data set and that better than half of the adolescent and adult population in the STR had a blood alcohol concentration test conducted and documented.

Economic Impact of Alcohol Abuse

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Director

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The Economic Cost of Alcohol Abuse in Montana

Alcohol is a product that many of us in Montana clearly enjoy. In 2005 we collectively consumed 124.7 million shots of distilled spirits, 33.0 million glasses of wine and 279.6 million 12 oz. cans of beer statewide. On a per capita basis, Montana ranks in the top half of states in alcohol consumption, with the 2003 consumption of 435 beers per adult higher than all but 4 other states nationwide. Like most states, the buying and selling of alcoholic drinks is a big business in Montana, employing thousands in production, processing, marketing, distribution and retailing.

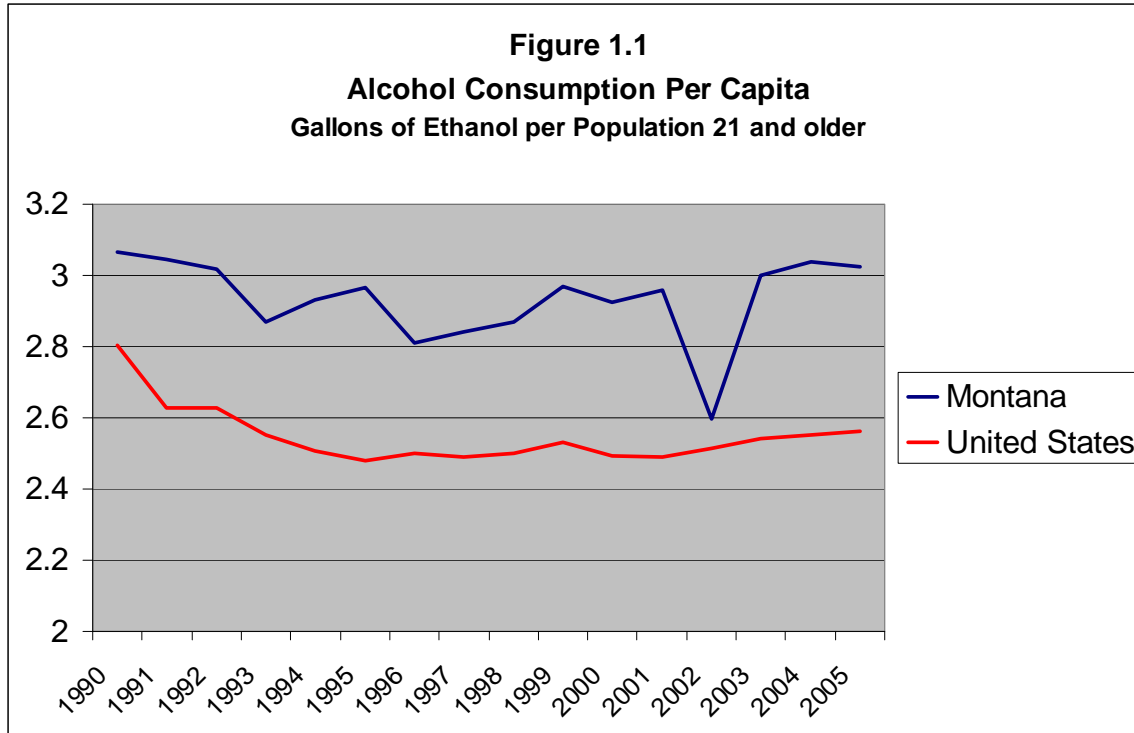
Yet alcohol is not an ordinary good. Its consumption is causally linked to outcomes that none of us can be said to enjoy. These include outcomes that affect the drinker – ranging from alcohol induced illness and premature death, highway crashes due to alcohol impairment, and even the impact of heavy drinking on one's ability to earn a living – as well as those non-drinkers affected by a drinker's alcohol-induced behavior. This second category of outcomes, as we shall see, is surprisingly broad.

This study attempts to quantify the cost to the economy of the State of Montana of these unwanted and undesirable consequences of alcohol consumption. As will be seen below, many, but not all, of these costs are paid out directly by individuals, businesses and governments. These include costs paid to support treatment centers that perform detoxification services, those dollars spent imprisoning criminals whose crimes can be attributed to alcohol abuse, and the money spent on medical treatment for alcohol-related injuries and medical conditions. But many of these costs represent opportunities for gain that are foregone due to alcohol. These range from the cost businesses bear when their workers show up late or hung-over from drinking, to when alcohol results in death and the tragic loss of a future productive life that would otherwise have occurred.

This study takes an economy-wide perspective. We ask the question, what resources would be available to the economy – that could be used on other priorities – if there were no abuses of alcohol? In addressing this question, we accomplish two goals simultaneously.

First, the dollar estimate itself gives some perspective on the magnitude of the problem, particularly in comparison to other issues and problems that compete for our attention. Alcohol is a familiar product that has acquired a social acceptance in Montana and elsewhere, and that may cause us to overlook its negative consequences. By quantifying the costs of those consequences we can put them in a more even perspective.

But there is a second aim of this study that goes beyond these numerical estimates. That is unfolding the complex relationship between alcohol abuse and economic welfare. The myriad of mechanisms through which the deleterious effects of alcohol show up in the bottom lines of businesses, governments, taxpayers and families is remarkable, and is itself worthy of note.



Alcohol: Montana’s Drug of Choice

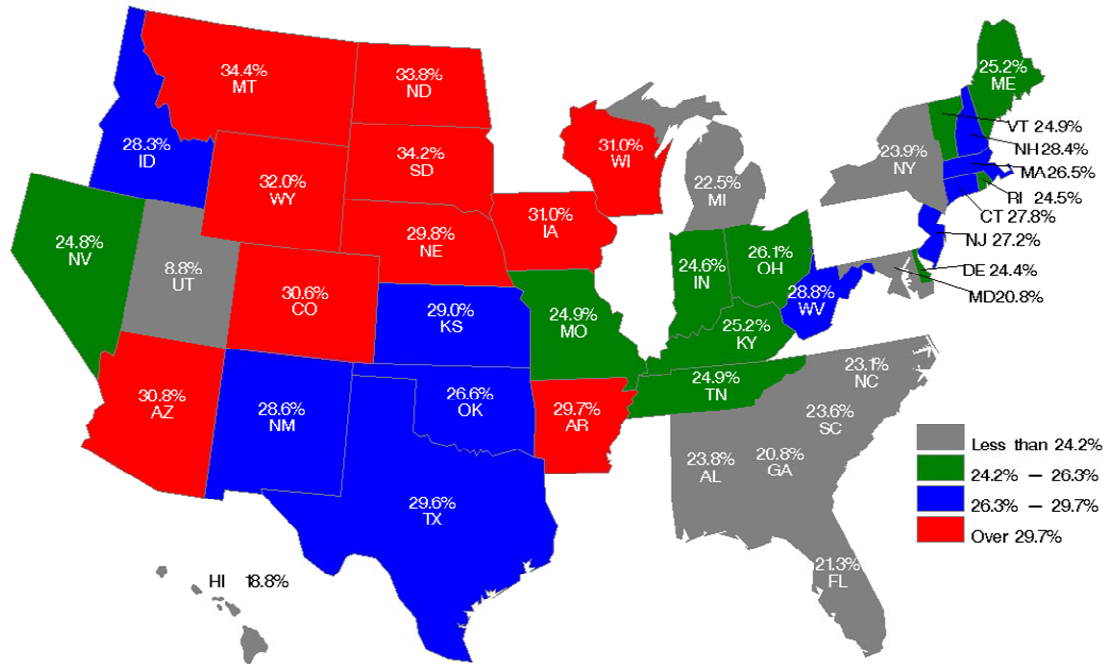
By almost any measure, Montanans consume alcohol at a rate that is above the national average. For certain types of drinking behaviors, Montana ranks among the highest in the nation.

Overall consumption of alcohol per person of drinking age in Montana has historically been 15 to 20 percent higher than the national average, as shown in Figure 1.1. When beer, wine and spirits consumption are converted to their ethanol alcohol equivalents, the data show that Montanans consumed just over 3 gallons of ethanol per person 21 years and older in 2005, almost 18% more than the comparative national figure.

Montana also enjoys a dubious status as a state with relatively high incidence of under-aged drinking. According to the Center for Disease Control’s Youth Risk Behavior Surveillance Survey (YRBS), in 2005 more than a third of high school students in Montana experienced a binge drinking episode – consuming five or more drinks within a couple of hours – within the last 30 days. As can be seen from Figure 1.2, this was a higher percentage than any other state in the country.

The data for individual counties and communities are even more disturbing. In 2006, some individual counties in Montana reported that more than half of high school seniors had experienced a binge drinking episode in the last two weeks. And there were 13 counties in Montana where the incidence of binge drinking among 8th grade students was above 20%.

Figure 1.2
Youth Binge Drinking Percentage by State, 2005



These kinds of rankings provide additional motivation for this study. Since Montana's use of alcohol is high, it stands to reason that the cost imposed on our economic welfare is high as well. We now turn to a discussion of how to measure that cost.

Assessment of Economic Costs

This study presents a conventional view of economic costs. In this study we:

- Consider only the undesirable side effects of the behavior.

Like any other good or service, the cost paid by consumers to acquire alcohol is presumably offset by the benefits they get from consuming it. It is the cost of treating the unwanted side effects – the illness, the injuries, and the loss in productivity – that is measured here.

- Take the point of view of the entire economy.

Some costs are borne by the drinker, others by those directly affected by their behavior, and still others by the general taxpayer. Taking care to avoid double counting, we sum all of these costs, regardless of who bears them.

- Tally both actual dollar outlays and imputed costs.

Dollars expended for such things as alcohol treatment programs, law enforcement, and medical costs are added together with costs that must be imputed, such as lost economic output due to premature death or disability.

- Assume no offsetting behavior.

The implicit assumption of this study is that a reduction in alcohol abuse will result in a decline in its associated costs. This, in turn, assumes that other risk behaviors (e.g., drug use) are not substituted for alcohol if the use of the latter were to decline.

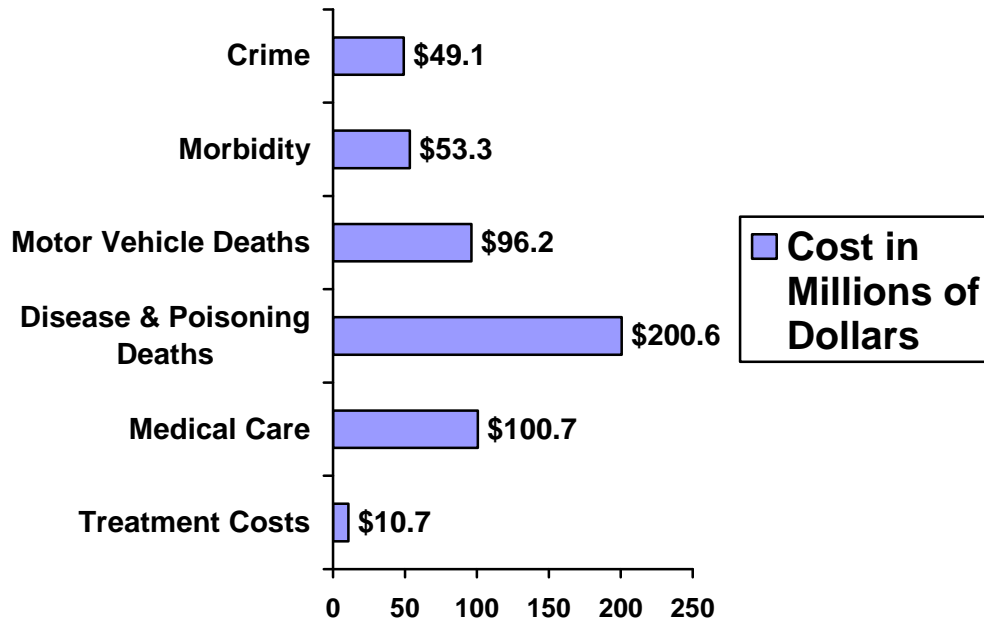
This is a static analysis. It does not consider how different factors in the economy might react to changes in alcohol consumption, and how, in turn, those reactions would affect the size of the economic pie. For instance, if higher alcohol-related fatalities make Montana a less desirable place to live or visit, or its higher alcohol-induced illnesses and tardiness makes the state a less desirable place to invest and do business, then it stands to reason that reductions in alcohol abuse might spur more in-migration or business investment. We have made no attempt to capture these kinds of effects in this report.

We also have made no attempt to estimate the fiscal impacts of alcohol abuse on state and local governments, although such a sub-study would doubtless be illuminating. We tally up the total costs to all actors in the economy, public and private.

Summary

Our aim has been two-fold. First, we have sought to quantify the negative impacts of alcohol consumption to bring the scope of the problem into clearer focus when compared to other demands on scarce public funds. Second, we wanted to identify the wide diversity of mechanisms set into place by the simple act of consuming alcohol that produce outcomes that make us collectively poorer.

Figure 1.3
The Economic Cost of Alcohol Abuse in Montana



Source: Bureau of Business and Economic Research, The University of Montana

This research clearly indicates that alcohol imposes a significant cost on all of us in the State of Montana. As shown in Figure 1.3, we collectively spend \$510.6 million, or about 1.7% of the total state economy as measured by GDP, dealing with the consequences of alcohol consumption. Those costs come about through a wide variety of ways:

Alcohol treatment centers. We spend \$10.7 million a year treating men and women of all ages for the symptoms of alcohol abuse at the 46 state-license facilities located around the state.

Medical costs. Alcohol use is causally linked to a broad spectrum of medical conditions that require treatment and care. Moreover, for patients who are alcohol abusers caring for their non-alcohol-related conditions, it is more complex and thus more expensive. Because of this, we spend \$100.7 million on medical care that would not otherwise be incurred in a world with no alcohol abuse.

Excess mortality. Alcohol causes premature death, and with loss of life comes a loss of earnings and productivity that would otherwise have taken place. That is a huge cost to the economy – we estimate that the value of lost earnings due to early death in 2005 was \$296.8 million. Of this total, \$200.6 million was due to death caused by alcohol-induced medical ailments, and \$96.2 million was due to deaths caused by alcohol-caused motor vehicle crashes.

Morbidity. Alcohol causes impairment, which translates into reduced ability to function in the workplace. The loss in economic output due to lost productivity is sizable – we estimate that \$53.3 million more could be produced throughout the state economy if the debilitating impact of alcohol could be avoided.

Crime. Alcohol affects judgment, and is a precipitating factor in the commission of many types of crime, including assault, rape, and homicide. The costs incurred in law enforcement, administration of courts and incarceration of criminals convicted of crimes that occur because of alcohol abuse amounts to \$49.1 million.

Of course, the tragedies that can result from alcohol abuse, such as those listed above, produce a toll on families and individuals that goes beyond dollars and cents. But the quantification we attempt to carry out in this study can at least bring to light the economic side of the story.

Moreover, there are a number of costs inflicted by alcohol that the available data did not allow us to estimate and include in the total reported above. These include:

Fire. Each year fires are started by those who have been drinking, causing property losses, injuries and possibly loss of life. They also are reflected in higher insurance premiums paid by drinkers and non-drinkers alike.

Loss of function from alcohol-related injuries. We were unable to obtain good estimates on the degree to which the productive abilities of those who have been injured because of alcohol-related accidents – either on the highways or elsewhere – have been affected as a result.

Victim costs resulting from crimes. The losses to those affected by alcohol-induced criminal activity – the crime victims as well as often the families and children of the criminals – are not reflected in this report.

The exclusion of these items makes it likely that the true cost of alcohol abuse is higher than the \$510.6 million reported above. One final point should be made. The cost of alcohol abuse to the state economy goes on year after year. With no intervention to bring these costs under control, we can expect to pay a tax – in the form of a smaller economic pie than we would otherwise enjoy – of a half a billion dollars each year because our collective drinking behaviors produce outcomes like those reported in this study.

Economic Impact of Problem Drinkers in Montana

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Montana SPF-SIG Project

Economic Impact of Problem Drinkers in Montana

In 2008, the Bureau of Business and Economic Research produced a report estimating the Economic Impact of Alcohol Abuse in Montana. The prior paper in this report, the Economic Impact of Alcohol Abuse by Dr. Barkey, is a condensed version of that 2008 report which can be found at: <http://www.bber.umt.edu>

The cost of alcohol-related crashes with injuries is another major economic impact that was added to the \$511 million dollars discussed in the 2008 Barkey report. Montana's 1,623 alcohol crashes with injuries in 2005 represented an additional \$131 million dollars bringing the total economic cost of alcohol abuse to \$642 million in the state.

Thus with these additional costs, we can drill down to look at not only what the economic cost of alcohol abuse is from fatalities but also what the cost is to Montanans from the average problem drinker. The estimates are based on the annual total economic cost of alcohol abuse in Montana of \$642 million, the \$511 million as reported in the 2008 paper plus the additional \$131 million cost of alcohol crashes with injuries. Thirty-two thousand Montanans are Alcohol Dependent*, which is the definition used to identify these teenager and adult problem drinkers. Thus the cost per problem drinker is estimated to be \$20,000. These costs are borne by all Montanans from all socio-economic levels and no matter if they live in rural or urban areas. They are borne by local and county governments, as well as in the dollars lost to the state economy because of the consequences of alcohol abuse. These costs represent only the financial ones and do not include the toll on families and communities in psychological and human suffering.

The \$20,000 cost per problem drinker can be broken down in the following way:

- a) \$11,600 from loss of life resulting in removing productive workers from the economy, often at a young age in the prime of their working lives;
- b) \$2,000 paid by businesses and employers resulting from impairing impacts of alcohol and alcoholism on worker productivity. These impacts include above average rates of tardiness and absenteeism, lower productivity on the job, more sick days, and, for those who have health insurance on their job, higher health insurance costs;
- c) \$4,000 spent on medical care in hospitals and clinics treating conditions either due to alcohol abuse or complicated by alcohol abuse;
- d) \$2,000 from costs due to crime and criminal behavior, such as impact on policy, judges, prisons/jails, and law enforcement/justice system resources; and
- e) \$400 on alcohol treatment centers around Montana, which are costs borne by taxpayers.

By determining total prevention dollars spent (for a typical year) and dividing that by 32,000 problem drinkers we can estimate the dollars spent per problem drinker. This

average dollar amount spent per problem drinker can be compared with the \$642 million cost and could make a case for increasing prevention dollars.

More important for the Montana SPF SIG communities is the following breakdown of the Economic Cost of Alcohol Abuse for all counties, particularly for those counties that are actively working on MTCCP's environmental prevention strategies. (See Page 76/Table 8 in this report for the list of communities funded by this project.)

TABLE 7: County Shares of Montana's \$642 Million Economic Costs of Alcohol Abuse: 2005

MTCCP COUNTIES

Beaverhead	\$6,902,195
Blaine	\$3,738,689
Dawson	\$5,272,510
Deer Lodge	\$3,546,961
Glacier	\$10,353,293
Hill	\$11,407,795
Jefferson	\$9,011,199
Lake	\$27,704,644
Lincoln	\$11,311,931
Madison	\$7,573,242
Mineral	\$5,080,782
Phillips	\$2,684,187
Powell	\$3,259,370
Richland	\$8,148,425
Roosevelt	\$8,819,471
Sanders	\$9,682,246
Sheridan	\$2,780,051
Silver Bow	\$13,900,254
Wibaux	\$1,150,366
<i>Sub-Total</i>	\$152,327,609
<i>Share of Total Cost</i>	24%
<i>Share of State Population</i>	22%

ALL OTHER COUNTIES

Big Horn	\$8,915,335
Broadwater	\$3,930,417
Carbon	\$10,640,884
Carter	\$191,728
Cascade	\$51,287,143
Chouteau	\$1,821,413
Custer	\$6,710,467
Daniels	\$575,183
Fallon	\$862,774
Fergus	\$5,751,829
Flathead	\$69,309,542

Gallatin	\$48,698,820
Garfield	\$575,183
Golden Valley	\$1,246,230
Granite	\$2,300,732
Judith Basin	\$1,342,093
Lewis & Clark	\$34,894,430
Liberty	\$383,455
McCone	\$862,774
Meagher	\$1,150,366
Missoula	\$72,952,367
Musselshell	\$2,684,187
Park	\$11,311,931
Petroleum	\$287,591
Pondera	\$3,451,098
Powder River	\$1,246,230
Prairie	\$1,246,230
Ravalli	\$17,926,534
Rosebud	\$3,546,961
Stillwater	\$5,655,965
Sweet Grass	\$3,355,234
Teton	\$2,971,778
Toole	\$3,355,234
Treasure	\$766,911
Valley	\$4,409,736
Wheatland	\$2,013,140
Yellowstone	\$101,040,466

Sub-Total \$489,672,391

TOTAL ALL COUNTIES	\$642,000,000
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These estimates for all Montana counties are based on their share of Montana alcohol-related crashes including traffic fatalities over 2005–2007 and using the annual cost of alcohol abuse of \$642 million. The counties impacted by the SPF SIG or Montana Community Change Project funding are listed at the beginning of the table, with all other non-funded counties following. The funded counties have an estimated impact from problem drinkers of \$152,327,609 which represents a fourth of all the costs to the state. However, these funded counties represent only 22% of the state’s population.

* Alcohol Dependence, as described in the DSM-IV, is a psychiatric diagnosis describing an entity in which an individual uses alcohol despite significant areas of dysfunction, evidence of physical dependence, and/or related hardship. For a person to meet criteria for Alcohol Dependence (303.90) within the criteria listed in the DSM-IV, they must meet 3 of a total 7 possible criteria within a 12 month period. (Alcohol Dependence is a condition characterized by the harmful consequences of repeated alcohol use, a pattern of compulsive alcohol use, and (sometimes) physiological dependence on alcohol (i.e., tolerance and/or symptoms of withdrawal). This disorder is only diagnosed when these behaviors become persistent and very disabling or distressing.

IMPLEMENTATION AT THE COMMUNITY LEVEL

Montana Community Change Project (MTCCP)

Background

Montana Community Change Project (MTCCP) counties were awarded contracts from the Montana Strategic Prevention Framework-State Incentive Grant (SPF SIG) based on their extremely high rates of high risk drinking (binge drinking) and alcohol-related vehicle fatalities and crashes with injuries. Following is an explanation of the communities, the framework for implementing community change, the environmental prevention model, and community readiness assessments.

Communities and Regions

There are 24 communities participating in the MTCCP SPF SIG. These communities are within six regions of the state. The communities/counties and their corresponding regions are listed in the table below.

Table 8: MTCCP Funded Communities and their Corresponding Regions

County/Reservation	Region
Blackfeet Reservation, Cut Bank and Heart Butte	Blackfeet Housing (Pikanni Action Team)
Silver Bow, Madison, Beaverhead, Deer Lodge and Powell Counties	Butte-Silver Bow County Health Department (Southwest Montana)
Sheridan, Roosevelt, Richland, Dawson, and Wibaux Counties, and Fort Peck Reservation	District II Alcohol & Drug Services (Eastern Montana)
Flathead Reservation, Lake, Mineral, Sanders, and Lincoln Counties	Flathead Reservation & Lake County Coalition for Kids, Inc. (Northwest Montana)
Hill, Blaine, and Phillips Counties	Havre HELP Committee
Jefferson County, Whitehall and Boulder	Jefferson County Sheriff's Department

SPF SIG Framework for Community Work

MTCCP communities used the SPF SIG Framework to implement their work; this framework is illustrated in Figure 1 on Page 7 of this report.

Timeline of Community Work

The MTCCP communities spent most of 2008 on the assessment, capacity building and planning phases of the SPF SIG Framework. Prior to Step 1, communities hired, trained and established local staff. A brief timeline of major SPF SIG Framework activities follows:

1. **Assess** problems and set priorities
 - Complete Workbooks (June 2008)
2. Evaluate and mobilize **capacity** to address priority problems
 - Build local relationships (July 2008 on-going)
 - Build local strategy teams (October 2008 on-going)
3. Inform prevention **planning** and funding decisions
 - Attend training on environmental strategies (July 2008)
 - Complete Workplans (October 2008)
 - Complete Community Readiness Assessments (November 2008)
4. Guide the selection of appropriate and effective strategies for **implementation**
 - Identify environmental prevention initiatives (November 2008)
 - Refine environmental prevention initiatives (August 2009)
 - Implement environmental prevention initiatives (earliest February 2009 throughout 2009)
5. **Evaluate** initiatives, and adjust prevention efforts as needed.
 - Provide information for first year process evaluation (June 2009)

Environmental Prevention Model

The MTCCP is different from typical prevention efforts. Most prevention efforts are individual based. Common individual-based strategies include education, therapy, treatment, support groups, etc. Individual prevention efforts can be very effective, but they are extremely costly and limited resources can be dedicated to prevention to significantly influence every individual or even every child. Instead of educating individuals about the dangers of binge drinking and drinking and driving, the MTCCP focuses on the community environment or context in which binge drinking and drinking and driving occurs, and targeting the underlying factors that support these behaviors or block solutions. The goal of environmental prevention is to change community norms by setting new standards for behavior. Evidence shows that Environmental Prevention is no quick fix. Often it will take five to 10 years to see significant results, but those results are permanent. However, it is well documented that the environmental prevention model is an effective way to prevent and reduce substance abuse.

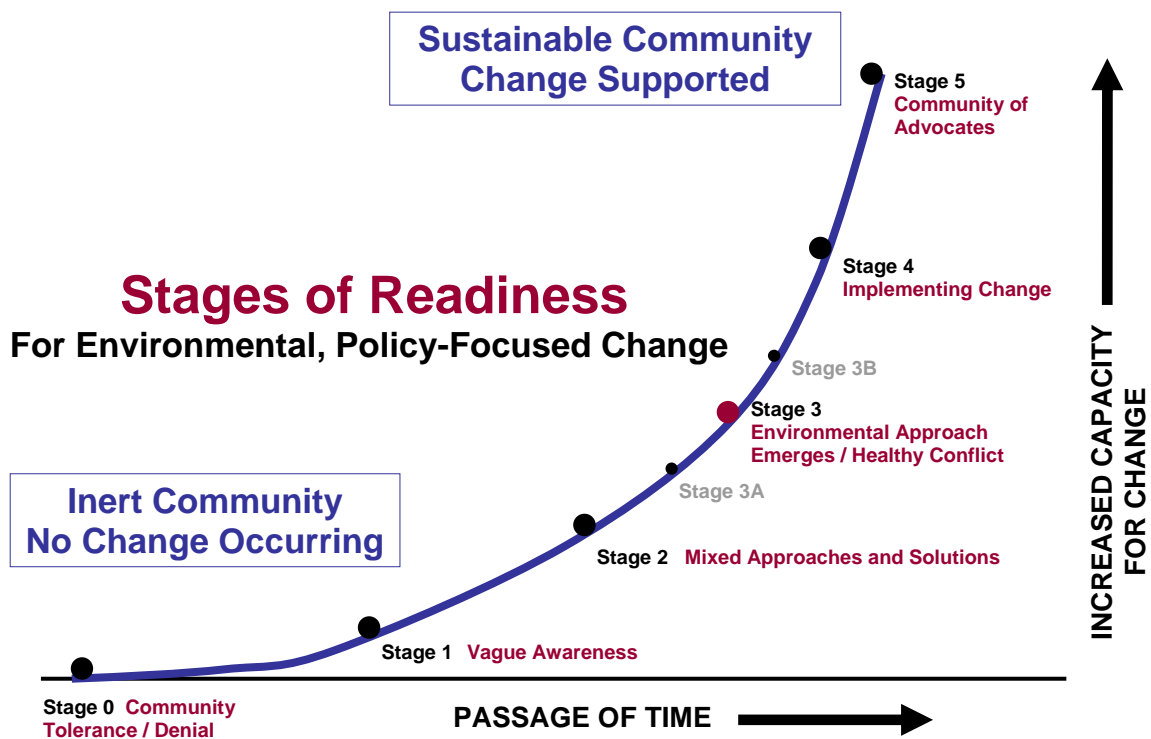
The Institute for Public Strategies' (IPS) Environmental Prevention Implementation Model (www.publicstrategies.org) was used to advance environmental initiatives in each funded community. This model is made up of five interdependent strategies that have been used

effectively to create a shift in community norms and standards. The strategies that make up the IPS Environmental Prevention Model include media advocacy, intentional community organizing, applied data and research, and policy development and enforcement. These strategies are being used collectively to advance the environmental initiatives identified as part of the solution to binge and underage drinking in each funded community.

Community Readiness Assessments

In November 2008, one community from each of the six funded regions was assessed to determine its degree of readiness to engage in policy-focused environmental prevention. A baseline readiness assessment, conducted prior to beginning the environmental prevention approach, provides the local strategy teams with valuable considerations as they develop a project strategic plan which recognizes and is based on the unique starting point of a community. The Community Readiness Assessment (CRA) scale is seen in Figure 4.

Figure 4: Community Readiness Scale



Source: Institute for Public Strategies, 2008

As a result of the community readiness assessments, the table below shows where the SPF SIG funded regions rate on the above scale. This table shows all assessed communities have very low readiness scores.

Table 9

SPF SIG Funded Region	Readiness Score Nov 2008	Position on CRA scale
Eastern Montana	0.82	Between Stage 0 (Community Tolerance/Denial) and Stage 1 (Vague Awareness)
Jefferson County	0.2	"
HELP	0.96	"
Pikanni Action Team	0.38	"
Northwest Montana	0.76	"
Southwest Montana	0.88	"

Initiatives

The environmental strategies in the IPS model are called initiatives and each community was led through a process to identify initiatives that would affect the most pressing needs in their communities as identified from their own data. The initiatives were chosen from a list of evidence-based policy solutions produced by the Pacific Institute of Research and Evaluation for the SPF SIG grant. This process resulted in the 2008 MTCCP list of initiatives which was recently updated. See Appendix E for the most current list of initiatives.

Evaluation Framework

A comprehensive evaluation framework was begun in 2008 to track short, intermediate and long-term indicators for both process and outcome measures for the MTCCP. Levels of Evaluation:

Outcome Evaluation

Consequences and consumption measures used by Montana SEW are used at both the state and community levels to track change. Reductions in priority consequences are major long-term outcomes along with shifts in cultural norms and sustainability of the MTCCP. Short and medium benchmarks are measured by changes directly attributable to the initiatives being implemented.

Process Evaluation

Process Evaluation Matrices were developed to track the effectiveness with which the communities are implementing their initiatives. The matrices had their inception in the Theory of Change and Logic Models developed for the MTCCP and includes indicators for all SPF SIG steps.

APPENDIX A

MONTANA STATE EPIDEMIOLOGICAL WORKGROUP MEMBERS

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APPENDIX B LIST OF DATA SOURCES

Data Source	Substance Covered	ATOD-related behaviors, etc.	Age Cohorts	Sample Breakdown	Prevalence Measure	Frequency (Initial Survey)	Sample Size/Number of 'Events'	Geographic Breakdown
Behavioral Risk Factors Surveillance System	cigarettes, alcohol	CV disease, HIV/AIDS, indoor air quality, cancer, injury, violence, etc.	18+	Age, sex, race, education, income, disability, residence w/i 5 health planning regions	Weighted percentages, weighted population estimates	Annually (1984)	5,960 in 2007	5 health planning regions; MMSA for Billings, Great Falls & Missoula and corresponding counties
Fatality Analysis Reporting System	alcohol	Alcohol-related motor vehicle deaths and injuries	All ages		Percentages, number	Annually (1994)	All events (78 and 1,652 in 2007)	County
Monitoring the Future System	alcohol, tobacco and other drugs	Usage, perceived risk, disapproval, perceived availability	Grades 8, 10 and 12; Ages 19-45	Grades 8, 10 and 12	Rates	Biennially (1975)	44,800 in grades 8, 10 & 12 in 2008	Nation
National Survey on Drug Use and Health	alcohol, tobacco and other drugs	Prevalence, amount, distress, perceived risk	12-17, 18-25, 26+		Percentages, 95% confidence intervals	Annually (1998)	900 in 2004	5 planning regions
National Clandestine Lab Seizure System	federal drug seizures		All ages		kgs of drugs seized	Annually (1986)	N/A	State
Montana Vital Statistics System	alcohol, tobacco	Cancer, fetal birth weight and mortality	All ages	Sex, age, race, marital status	Rates per 1,000	Annually (1989)	State population	County
National Youth Tobacco Survey	tobacco		Grades 6-12	race, middle/high school, gender		Biennially (2000)	27,000 in 2006	Nation
State Adult Tobacco Survey	tobacco	Prevalence, initiation, cessation, policies	18+	High pop. density, low pop. density, high American Indian pop. density	Percentages	Annually (2004)	2,400 in 2006	3 areas consistent w/sample breakdown requirements
Treatment Episode Data System	alcohol, tobacco and other drugs	Treatment admissions	All ages	Sex, age, race, type of drug	Percentages	Annually (1992)	Total admissions (9,206 in 2007)	Region, county of residence
Uniform Criminal Records	alcohol, drugs	Violent, property, and drug crimes	All ages	Sex, age	Rate per 100,000	Annually (1992)	State population	County
Prevention Needs Assessment	alcohol, tobacco and other drugs	Academics, violence, CTC factors	Grades 8, 10 and 12	Race, HS senior	Percentages	Biennially (1998)	16,900 in 2008	County, school district, judicial- and health planning region
Youth Risk Behavior Survey	alcohol, tobacco and other drugs	Violence, injury, sexual behavior	Grades 7-12	Race, reservation/urban Am. Indian, alternative schools, disabled students	Percentages, 95% CI, numbers	Biennially (1991)	4,000 in 2007	Superintendent regions

APPENDIX C

SUBSTANCE ABUSE CONSEQUENCE AND CONSUMPTION INDICATORS

Consequences of Substance Abuse	Annual Number of Persons in Montana	National Annual Rate	Montana Annual Rate	Ratio of Montana Rate to National Rate (if > 1, MT is above national)	Montana Trend	Demographic and Geographic Availability (A=age; G=gender; R=race; C=county; HR=health planning region)
Alcohol-Related Death						
Alcohol-Induced Death (<i>MT OVS 2003-07</i>)*						
All Races	123	7.2	13.0	1.8	Up	A, G, R, C
American Indian	31	N/A	52.0	N/A	Up	A, G, R, C
Alcoholic Liver Disease (<i>MT OVS 2003-07</i>)*						
All Races	73	4.3	8.0	1.9	Up	A, G, R, C
American Indian	21	N/A	35.0	N/A	Flat	A, G, R, C
Chronic Liver Disease & Cirrhosis (<i>MT OVS 2003-07</i>)*						
All Races	115	9.1	12.0	1.3	Flat	A, G, R, C
Alcohol-Related Motor Vehicle Fatalities (<i>MDT 2003-07</i>)						
All Races, per 100,000 people	126	5.3	13.4	2.5	Flat	A, G, R, C
All Races, per 100,000,000 miles	126	0.5	1.1	2.2	Up	A, G, R, C
American Indian (2007), per 100,000 people	28	N/A	47.1	N/A	Down	A, G, R, C
Alcohol-Related Motor Vehicle Injuries (<i>MDT 2003-07</i>)*						
All Races	1,724	N/A	184.0	N/A	Up	A, G, R, C
Alcohol Dependence						
Alcohol Dependence in Last Year (<i>NSDUH 2004-05/2005-06</i>)						
Youth ages 12-17	2,706	5.4%	3.3%	0.6	Up	A, G
Young Adults ages 18-25	10,039	16.8%	9.3%	0.6	Flat	A, G
Adults ages 26 and over	20,976	6.2%	3.4%	0.6	Up	A, G
Tobacco-Related Death						
Tobacco Contributing to Death (<i>MT OVS 2003-07</i>)*						
All Races	1,323	149.7	141.0	0.9	Up	G, R, C
American Indian	57	N/A	96.0	N/A	Down	G, R, C
Tobacco Contributing to Cancer (<i>MT OVS 2003-07</i>)*						
All Races	463	55.5	49.0	0.9	Down	A, G, R, C
American Indian	19	N/A	31.0	N/A	Down	A, G, R, C

Fetal Deaths where mother smoked during pregnancy (MT OVS 2003-07)						
All Races	9	N/A	20.0%	N/A	Down	R, C
American Indian	3	N/A	30.5%	N/A	Down	R, C
Drug Dependence						
Drug Dependence--Any Drug (NSDUH 2004-05/2005-06)						
Youth ages 12-17	2,470	4.3%	3.0%	0.7	Flat	A, G
Young Adults ages 18-25	6,740	7.9%	6.2%	0.8	Up	A, G
Adults ages 26 and over	6,820	1.7%	1.1%	0.7	Up	A, G
Adult Drug Dependence (ages 18 and over) (MT Native American Substance Abuse Treatment Needs Survey)						
Montana Reservations	1,320	1.4%	6.0%	4.2	N/A	R
All Races, All Montana Households	7,080	1.4%	1.0%	0.7	N/A	R

* Rate per 100,000

Consequences of Substance Abuse	Annual number of persons in Montana	National Annual Rate	Montana Annual Rate	Ratio of Montana Rate to National Rate (if > 1, MT is above national)	Montana Trend	Demographic and Geographic Availability (A=age; G=gender; R=race; C=county; HR=health planning region)
Drug-Related Death						
Drug-Induced Deaths (MT OVS 2003-07)*						
All Races	118	11.6	13.0	1.1	Up	C, R
American Indian	12	N/A	21.0	N/A	Up	C, R
Drug-Induced Deaths w/o Accidental Poisoning (drugs, medicants, biologicals) (MT OVS 2003-07)*						
All Races	95	N/A	10.0	N/A	Up	C, R
American Indian	10	N/A	18.0	N/A	Up	C, R
Suicide						
Intentional Self-Poisoning w/ Drugs (suicide) (MT OVS 2003-07)*						
All Races	1	N/A	N/A	N/A	Down	C, R
American Indian	-	N/A	N/A	N/A	Down	C, R
All Suicides (MT OVS 2003-2007)*						
All Races	188	10.7	20.0	1.9	Flat	C, R
Crime						
Violent Crime Index (Board of Crime Control, 2003-2007)*	2,917	446	311	0.7	Down	C
Drug Offenses (Board of Crime Control, 2003-2007)	3,306	N/A	N/A	N/A	Down	none
DUI Convictions (Montana Dept. of Justice, 2003-2005)*	6,771	N/A	883.2	N/A	Up	C

Treatment						
Treatment Center Admissions by Primary Substance of Abuse (ages 12 and over) (SAMHSA, 2003-2007)*						
Admissions, Total	8,124	753	1,017	1.4	Up	A, G, R, C
Admissions for Alcohol	2,252	165	282	1.7	Down	A, G, R, C
Admissions for Alcohol w/Secondary Drug	2,435	136	305	2.2	Up	A, G, R, C
Admissions for Marijuana	1,516	119	190	1.6	Up	A, G, R, C
Admissions for Other Opiates ¹	450	32	56	1.8	Up	A, G, R, C
Admissions for Amphetamines ²	1,163	63	146	2.3	Up	A, G, R, C
School-Based Problems						
Suspensions, Past Year (8/10/12 gr) (PNA 2004/06/08)						
All Races	4,777	N/A	10.0%	N/A	Flat	A, G, R, C
American Indian	1,105	N/A	23.0%	N/A	Flat	A, G, R, C
Drunk/High at School, Past Year (8/10/12 gr) (PNA 2004/06/08)						
All Races	9,411	N/A	19.7%	N/A	Flat	A, G, R, C
American Indian	1,633	N/A	34.0%	N/A	Flat	A, G, R, C

* Rate per 100,000

¹ Includes non-prescription use of methadone, codein, morphine, oxycodone, hydromorphone, meperidine, opim and other drugs with morphine-like effects

² Includes methamphetamines, Benzedrine, Dexedrine, Precludine, Ritalin and any other amines and related drugs

Substance Consumption	Annual number of persons in Montana	National Annual Rate	Montana Annual Rate	Ratio of Montana Rate to National Rate (if > 1, MT is above national)	Montana Trend	Demographic and Geographic Availability (A=age; G=gender; R=race; C=county; HR=health planning region)
Consumption: Alcohol						
Youth Binge Drinking (gr 9-12) (YRBS 2003/05/07)						
All Races	1,661	26.6%	34.8%	1.3	Up	A, G, R
American Indian	1,955	N/A	40.7%	N/A	Up	A, G, R
Youth Binge Drinking (8/10/12 gr) (PNA 2004/06/08)						
All Races, High School	12,612	19.4%	26.4%	1.4	Up	A, G, R, C
American Indian, High School	1,671	N/A	34.8%	N/A	Up	A, G, R, C
All Races, High School Seniors	4,405	25.9%	39.7%	1.5	Up	A, G, R, C
American Indian, High School Seniors	428	N/A	45.3%	N/A	Up	A, G, R, C
Youth Binge Drinking (ages 12-17) (NSDUH 2004-05/2005-06)						
All Races	12,531	9.7%	15.4%	1.6	Down	A, G
Adult Binge Drinking (BRFSS 2005-07)						
All Races	119,893	15.8%	16.6%	1.1	Down	A, G, R, HR, and some C

Adult Binge Drinking (Past 30 Days) (NSDUH 2004-05/2005-06)						
Young Adults, ages 18-25	58,742	41.8%	54.3%	1.3	Flat	A, G
Adults, ages 26 and over	155,876	21.9%	25.6%	1.2	Flat	A, G
Adult Chronic Heavy Drinking ⁵ (BRFSS 2005-07)						
All Races	40,446	5.2%	5.6%	1.1	Flat	A, G, R, HR, and some C
Adult Alcohol Use, Past 30 Days (ages 18 and over) (MT Native American Substance Abuse Treatment Needs Survey, 2001)						
Montana Reservations	8,844	51.0%	40.0%	0.8	NA	R
All Races, All Montana Households	413,472	51.0%	58.0%	1.1	NA	R
Youth Drinking, Lifetime (gr 9-12) (YRBS 2003/05/07)						
All Races	37,693	74.7%	78.9%	1.1	Flat	A, G, R
Youth Drinking, Lifetime (8/10/12 gr) (PNA 2004/06/08)						
All Races	32,438	57.4%	67.9%	1.2	Flat	A, G, R, C
American Indian	3,549	N/A	73.9%	N/A		A, G, R, C
Youth Drinking, Past 30 Days (8/10/12 gr) (PNA 2004/06/08)						
All Races	18,870	30.9%	39.5%	1.3	Flat	A, G, R, C
American Indian	2,152	N/A	44.8%	N/A	Up	A, G, R, C
Youth Drinking & Driving, Past 30 Days (gr 9-12) (YRBS 2003/05/07)						
Rode in car w/someone who had been drinking						
All Races	16,577	29.3%	34.7%	1.2	Down	A, G, R
Urban American Indian	1,107	30.0%	37.8%	1.3	Flat	A, G, R
Reservation American Indian	854	30.0%	45.6%	1.5	Flat	A, G, R
Drove car when drinking						
All Races	8,742	10.8%	18.3%	1.7	Flat	A, G, R
Urban American Indian	568	N/A	19.4%	N/A	Flat	A, G, R
Reservation American Indian	433	N/A	23.1%	N/A	Flat	A, G, R
Youth Drinking & Driving, Past 30 Days (gr 8, 10 & 12) (PNA 2008)						
Rode in car w/someone who had been drinking						
All Races	15,670	N/A	32.8%	N/A	N/A	A, G, R, C
American Indian	2,200	N/A	45.8%	N/A	N/A	A, G, R, C
Drove car when drinking						
All Races	6,306	N/A	13.2%	N/A	N/A	A, G, R, C
American Indian	807	N/A	16.8%	N/A	N/A	A, G, R, C
Had at least one drink of alcohol on school property, Past 30 Days (gr 9-12) (YRBS 2003/05/07)						
All Races	3,010	4.5%	6.3%	1.4	Flat	A, G, R

⁵ >2 drinks for men; >1 drink for women

APPENDIX D SUBSTANCE SPECIFIC CONSUMPTION PROBLEMS

Substance-Specific Consumption Problems	Data Year	Annual Number of Persons in Montana	National Annual Rate (%)	Montana Annual Rate (%)	Ratio of Montana Rate to National Rate (if > 1, MT is above national)
Underage Drinking and Driving					
High school students who drove a car when drinking, once or more during past 30 days (YRBS)					
All Races	2003	9,714	12.1	20.4	1.7
	2005	8,809	9.9	18.5	1.9
	2007	7,597	10.5	16.0	1.5
American Indian	2003	995	N/A	21.3	N/A
	2005	1,192	N/A	25.5	N/A
	2007	1,098	N/A	22.6	N/A
High school students riding in car with someone who has been drinking (YRBS)					
All Races	2003	17,571	30.2	36.9	1.2
	2005	16,381	28.5	34.4	1.2
	2007	15,621	29.1	32.9	1.1
American Indian	2003	2,037	N/A	43.6	N/A
	2005	2,210	N/A	47.3	N/A
	2007	2,225	N/A	45.8	N/A
Underage Binge Drinking					
High school seniors who have been binge drinking during past 2 weeks (PNA)					
All Races	2004	5,333	29.2	44.4	1.5
	2006	4,120	25.4	37.9	1.5
	2008	4,011	25.9	36.9	1.4
American Indian	2004	445	N/A	47.6	N/A
	2006	418	N/A	44.8	N/A
	2008	407	N/A	43.6	N/A
High school students who have been binge drinking during past 30 days (YRBS)					
All Races	2003	17,710	28.3	37.3	1.3
	2005	16,333	25.5	34.4	1.3
	2007	15,526	26.0	32.7	1.3
American Indian	2003	2,074	N/A	42.7	N/A
	2005	2,181	N/A	44.9	N/A
	2007	2,220	N/A	45.7	N/A

Students grades 8, 10 & 12 binge drinking in past 30 days (<i>PNA</i>)					
All Races	2004	14,754	20.9	30.6	1.5
	2006	11,895	19.4	24.9	1.3
	2008	11,158	19.3	23.5	1.2
American Indian	2004	1,764	N/A	37.3	N/A
	2006	1,710	N/A	35.6	N/A
	2008	1,535	N/A	31.6	N/A
Youth, 12-17 yrs, binge drinking in past 30 days (<i>NSDUH</i>)					
All Races	2003-04	14,733	11.6	17.1	1.5
	2004-05	13,398	10.4	15.6	1.5
	2005-06	12,450	10.7	15.3	1.4

Substance-Specific Consumption Problems					Ratio of Montana Rate to National Rate (if > 1, MT is above national)
	Data Year	Annual Number of Persons in Montana	National Annual Rate (%)	Montana Annual Rate (%)	
Adult Binge Drinking					
Adults (18+) having more than 5 drinks in a row, past 30 days (<i>BRFSS</i>)					
All Races	2006	1,235	15.4%	17.1%	1.1
	2007	1,156	15.8%	16.0%	1.0
Alcohol Dependency					
Alcohol dependency, past year (<i>NSDUH</i>)					
Youth ages 12-17 yrs	2003-04	3,016	2.1%	3.5%	1.7
	2004-05	2,611	2.1%	3.0%	1.4
	2005-06	2,929	2.0%	3.6%	1.8
Young adults ages 18-25 yrs	2003-04	8,317	7.0%	9.0%	1.3
	2004-05	8,758	7.2%	9.5%	1.3
	2005-06	9,736	7.2%	9.0%	1.2
Treatment center admissions; alcohol only (12+) (<i>SAMHSA</i>)					
All Races	2003	2,394	170.3	299.8	1.8
	2005	2,405	161.5	301.2	1.9
	2007	2,036	164.6	255.0	1.5

Motor Vehicle Crashes					
Injuries from alcohol-related motor vehicle crashes, all ages (<i>MARS, MDT</i>)					
All Races	2004	1,767	N/A	194.0	N/A
	2006	1,816	N/A	199.4	N/A
	2007	1,777	N/A	189.7	N/A
Fatalities from alcohol-related motor vehicle crashes, all ages (<i>FARS, MDT</i>)					
All Races	2004	107	5.68	11.7	2.1
	2006	108	5.88	11.9	2.0
	2007	130	4.31	13.9	3.2
American Indian	2004	32	N/A	58.1	N/A
	2006	30	N/A	54.5	N/A
	2007	28	N/A	47.1	N/A
Alcohol-Induced Deaths					
Alcohol-induced death (<i>MT Office of Vital Statistics</i>)					
All Races	2003	106	7.1	11.6	1.6
	2005	124	7.3	13.6	1.9
	2007	143	N/A	15.3	N/A
American Indian	2003	21	N/A	38.1	N/A
	2005	36	N/A	65.4	N/A
	2007	29	N/A	48.7	N/A
Suicides					
All suicides (<i>MT Office of Vital Statistics</i>)					
All Races	2003	179	10.8	19.7	1.8
	2005	205	11.0	22.5	2.0
	2007	192	N/A	20.0	N/A

APPENDIX E 2008 MTCCP LIST OF INITIATIVES

MONTANA COMMUNITY CHANGE PROJECT SITES/INITIATIVES	Court Watch	Deterrence Theory		Mandatory RASS Coupled with Compliance Checks	Restrictions on Alcohol at Special Events	Social Host Laws	Student Behavior Contracts	Cross Jurisdictional LE
		Strengthen MIP System	Strengthen DUI System					
Beaverhead County		X	X	X				
Blackfeet Reservation / Browning				X		X		X
Blackfeet Reservation / Heart Butte				X		X		X
Blackfeet Reservation / Seville				X		X		X
Blaine County				XX	X	X		
Dawson County		X	X	XX		X		
Deer Lodge County		X					X	
Flathead Reservation				XX				
Hill County				XX		X		
Jefferson County / Boulder		X	X	XX		X		
Jefferson County / Whitehall		X		XX	X	X	X	
Lake County				XX		X		
Lincoln County		X	X	X	X			
Madison County	X	X	X					
Mineral County				XX		X		
Phillips County		X	X	XX	X			
Powell County				XX			X	
Richland County		X	X	XX	X			
Roosevelt County / Poplar				X		X		
Roosevelt County / Wolf Point		X	X	XX	X	X		
Sanders County				XX		X		
Sheridan County		X	X	XX				
Silver Bow County		X			X		X	
Wibaux County		X	X	X		X		