The Economic Costs of Alcohol and Other Drug Abuse in Alaska, 2012 Update

Prepared for:

Alaska Mental Health Board & Advisory Board on Alcoholism and Drug Abuse

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McDowell GROUP

Research-Based Consulting

Juneau
Anchorage

August 2012

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The report is dedicated to the memory of Eric McDowell, founder of McDowell Group, and tireless counselor and advocate for Alaskans who have struggled with addiction

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Executive Summary

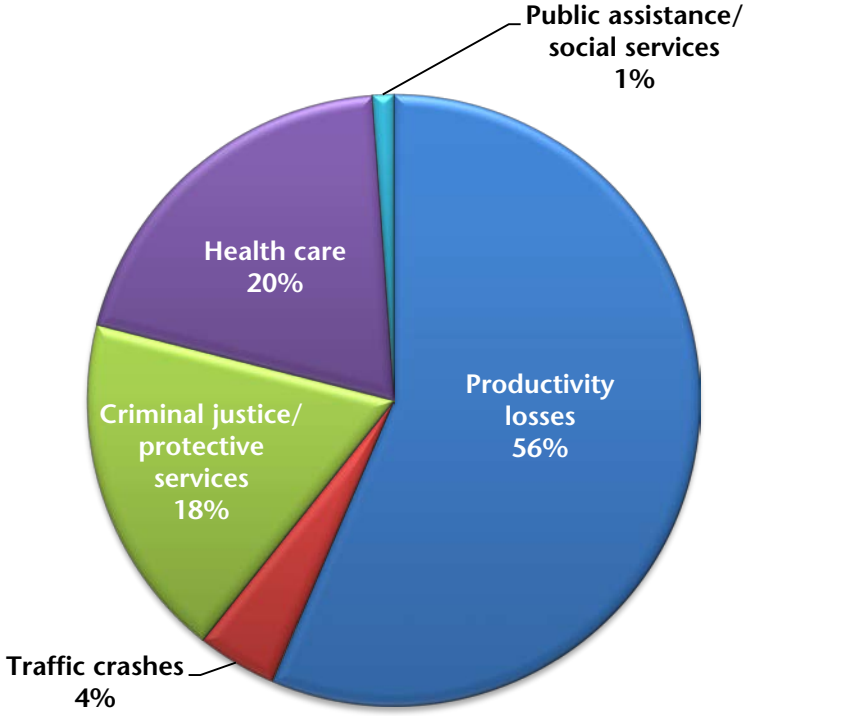
The Advisory Board on Alcoholism and Drug Abuse, through the Alaska Department of Health and Social Services, contracted with McDowell Group to update prior studies on the economic costs of alcohol and drug abuse in Alaska.

Alcohol and drug abuse impacts Alaska's economy in a variety of ways. It can lead to greater health risks and death, impaired physical and mental abilities, crime, greater reliance on public assistance, and a number of other adverse effects. This study addresses tangible economic costs such as lost earnings or costs of government programs. However, there are mental and emotional costs that result from alcohol and drug abuse that are extremely difficult to measure and are not included in this report.

In 2009, the National Survey on Drug Abuse and Health estimated that 9.5 percent of Alaska's population age 12 and older (55,700 residents) were dependent on or abusing alcohol or drugs. Costs to the economy in 2010 totaled $1.2 billion. Costs by category include:

- $673.2 million in productivity losses,
- $50.5 million in traffic crash costs,
- $217.7 million in criminal justice and protective services,
- $237.3 million in health care, and
- $13.2 million in public assistance and social services.

Economic Costs of Alcohol and Drug Abuse, by Category, 2010



Productivity Losses

Alcohol and drug abuse results in lost productivity when individuals do not contribute to the economy through employment earnings and household services such as child care. Lost productivity occurs as a result of premature death, reduced efficiency through physical and/or mental impairment, incarceration for criminal offenses, and residential and inpatient treatment or hospitalization.

In 2010, alcohol and drug abuse resulted in $673.2 million in lost productivity in Alaska. Productivity losses by category are as follows:

- Premature death as a result of alcohol and drug abuse led to $424.1 million in lost productivity, the single largest economic cost addressed in this report. Two-thirds of deaths were males and seven out of ten deaths were alcohol-related.
- Diminished productivity as a result of mental or physical impairment from alcohol and drug abuse totaled $174 million.
- Productivity loss due to incarcerations resulting from alcohol and/or drug use totaled $63.7 million. Alcohol and drugs were a factor in 1,530 incarcerations in 2010.
- In 2010, there were 93,760 recorded bed-days for inpatient treatment and hospitalization as a result of alcohol and drug abuse in Alaska, resulting in $11.4 million in lost productivity.

Traffic Crashes

Alcohol and drug abuse play a major role in traffic crashes in Alaska. In 2010, there were 779 crashes attributed to alcohol and drug abuse. Of these, 26 were fatal, 75 resulted in major injuries, 288 resulted in minor injuries, and 390 had property damage only. Total costs of traffic crashes were $50.5 million. Costs include:

- $10.2 million in insurance administration costs,
- $1.1 million in workplace costs,
- $20.8 million in household productivity costs,
- $14.0 million in legal costs, and
- $4.3 million in property damage.

Criminal Justice and Protective Services

A significant number of crimes can be attributed to alcohol and drug abuse. Crime carries with it a wide variety of costs including law enforcement costs, legal costs, costs of incarceration, and costs to victims of crimes. In 2010, there were 18,296 arrests in Alaska attributed to alcohol and drug abuse and 1,529 incarcerations. During the same year there were approximately 7,996 victims of crimes attributed to alcohol and drug abuse. Criminal justice costs include:

- $52.3 million in law enforcement costs,
- $14.2 million in legal and adjudication costs,
- $56.7 million in incarceration costs, and
- $24.4 million in costs to victims.

Additionally, a large number of protective service costs are alcohol and drug abuse-related. Estimates for adult protective services are not available at this time. Child protective services attributed to alcohol and drug abuse in Alaska totaled $70.1 million in 2010, including $33.1 million for social workers and $18.9 million in adoption and guardianship costs.

Health Care

A wide variety of health care costs are associated with alcohol and drug abuse, including hospital costs from injuries or illness, residential and outpatient treatment costs, pharmaceutical costs, nursing home and long-term care facility costs, and the costs of treating fetal alcohol syndrome, HIV/AIDS, and hepatitis B and C. Health care costs attributed to alcohol and drug abuse in Alaska totaled $237.3 million in 2010.

- There were 45,500 days of hospital care attributed to alcohol or drug related injuries or illnesses, costing $146.5 million. Alcohol-related incidents accounted for 41,500 days of care while drug related incidents accounted for 4,000 days of care.

- The Alaska Department of Health and Social Services, Division of Behavioral Health appropriated $29.9 million to alcohol and drug residential and outpatient treatment, while $5.4 million of Medicaid expenditures went to this cause in 2010.

- Medical outpatient treatment costs amounted to $38.3 million in 2010 with 72,100 days of care.

- Prescription drug costs for the treatment of alcohol or drug dependence cost Alaska an estimated $1.1 million in 2010.

- There were 2,239 nursing home and long-term care days that can be attributed to alcohol and drug abuse in 2010, costing $1.1 million.

- In 2010, there were an estimated 15 fetal alcohol syndrome (FAS) births and 128 fetal alcohol spectrum disorder (FASD) births. Annual costs of treating these 15 new FAS patients added approximately $286,500 to the existing costs of treating those previously born with FAS and FASD.

- There were 118 known cases of HIV or AIDS in Alaska in 2010 attributed to intravenous drug use; 57 HIV positive and 61 with HIV and AIDS. Annual costs of treatment are $7.5 million.

- Of hepatitis B and C cases in Alaska in 2010, 437 can be attributed to intravenous drug use, with an annual cost of treatment of $7.3 million.

Public Assistance and Social Services

Alcohol and drug abuse contribute to a portion of the population's need for public assistance and social services, as a result of reduced income from mental and physical impairment or inability to hold a job. Costs attributed to alcohol and drug abuse totaled $13.2 million in 2010.

Co-Occurring Disorders

Co-occurrence of mental illness and substance abuse is an increasing concern in the state and throughout the U.S. The 2010 National Survey on Drug Use and Health found that 24 percent of those dependent on or abusing both alcohol and illicit drugs have a co-occurrence of serious mental illness (SMI). Of those with any mental illness in conjunction with a substance use disorder, just 14 percent receive any kind of treatment. Nearly half (45 percent) of those with SMI and a substance use disorder are only receiving mental health treatment.

Cost of Underage Drinking in Alaska

Though not included in total economic costs as figures have been factored in elsewhere, the Pacific Institute for Research and Evaluation (PIRE) estimates the total cost of underage drinking in Alaska in 2010 was $321.4 million. PIRE cost estimates account for health care costs such as those attributed to alcohol treatment or alcohol related poisonings and societal costs such as youth violence and crime. Another major cost taken into consideration is that of pain and suffering, or the mental distress associated with physical and emotional injury as a result of youth alcohol consumption.

Employment Impacts of Alcohol Sales

The primary focus of this study is the cost of alcohol and drug abuse in Alaska. However, it should be noted that alcohol sales contribute to the economy through employment and associated earnings and through tax revenue. In 2010, 3,023 jobs could be attributed to alcohol sales and $73.8 million in annual earnings. Tax revenue from the sale of alcohol totaled $38.8 million.

Actual Costs

It is important to remember this report presents *estimated* alcohol and drug-related costs. Actual costs could be higher or lower, however, there is simply a lack of data available to determine actual costs associated with alcohol and drug abuse in Alaska.

As with previous generations of this study, many of the costs presented in this report were derived from a 1998 study by the National Institute of Drug Abuse and the National Institute of Alcohol Abuse and Alcoholism. In the absence of more recent data, costs published in that study were adjusted for inflation to 2010 dollars and for Alaska's higher cost of living. Several more current studies at the state and national level also relied on these estimates.

Data on Alaska's alcohol and drug dependent and abusing population was drawn from the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Applied Studies *National Survey on Drug Use and Health, 2008-2009* which provides the most recent state-specific estimates.

In nearly all cases, Alaska specific data were not available on the amount of crime, health and medical costs, lost production, and public assistance that can be attributed to alcohol and other drug abuse. Estimates rely on national norms based on tested methodologies. Comprehensive development of Alaska specific data is recommended.

Organization of the Report

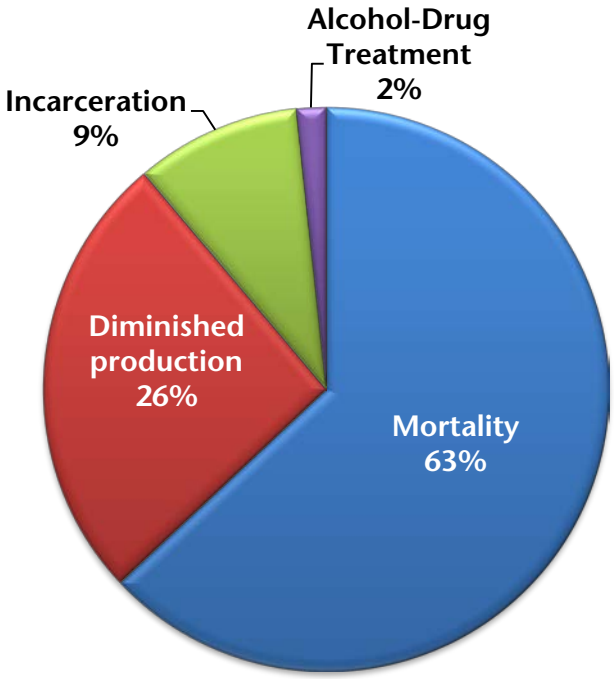
This report begins with an examination of productivity losses due to death, diminished productivity, incarcerations, and inpatient treatment or hospitalization as a result of alcohol and drug abuse. Chapter 2 measures the cost of alcohol or drug-related traffic crashes in Alaska. Chapter 3 follows with a look at criminal justice and protective services costs, including law enforcement, legal and adjudication, incarceration, and victimization costs. A variety of health care-related costs are described and calculated in Chapter 4. Chapter 5 provides estimates of the costs of public assistance and social services attributed to alcohol and drug abuse. Chapter 6 discusses the special case of co-occurring mental health and substance abuse disorders, while the costs of underage drinking are considered in Chapter 7. Finally, Chapter 8 briefly calculates employment and tax revenue from alcohol sales in Alaska.

Chapter 1: Productivity Losses

Summary

Alcohol and other drug abuse in Alaska resulted in productivity losses totaling $673.2 million in 2010. Lost productivity from alcohol and drug abuse can result from premature death, reduced efficiency of workers and homemakers through physical or mental impairment, incarceration for criminal offenses, and absence from society as a result of inpatient treatment or hospitalization. All of these result in reduced production of goods and services and, therefore, a cost to the economy. Figure 1 shows a breakdown of lost productivity in Alaska from alcohol and drug abuse.

FIGURE 1. Lost Productivity in Alaska from Alcohol and Drug Abuse, 2010



- Alcohol and drug abuse can be attributed to an average of 397 deaths per year from 2006 to 2010 and an estimated $424.1 million in lost production in 2010. Males accounted for two-thirds, or 263 of premature deaths and three-quarters, or $318.7 million in lost production. Females averaged 134 deaths and $105.5 million in lost production in 2010. Alcohol is attributed to seven out of ten alcohol and drug related deaths with the largest number of deaths caused by alcoholic liver disease, suicide, and alcohol dependency syndrome. The remaining three out of ten deaths were drug related.

- Alcohol and drug abuse contributes to diminished productivity in the workplace and household through physical and mental impairment. With approximately 58,716 Alaskan residents 18 and older abusing or dependent on alcohol or drugs, this resulted in an estimated $174 million in lost production. Males lost an average of $4,106 and females about $3,264 per year from their earnings

as a result of absenteeism, reduced efficiency, inability to hold a job, and other effects on productivity from substance abuse.

- Taking into account the loss of potential earnings, alcohol and drug-related incarcerations amounted to $63.7 million in lost productivity in 2010. Alcohol and drug abuse contributed to an estimated 1,530 incarcerations with liquor and drug crimes accounting for the large majority of these.
- Lost production from inpatient treatment or hospitalization totaled $11.4 million in 2010. The Alaska Department of Health and Social Services reported a total of 93,760 bed-days of inpatient care. These figures do not include those that sought treatment out of state.

Lost Production Due to Mortality

Premature death accounts for the largest economic cost to Alaska from alcohol and drug abuse. Various causes of death can be attributed to substance abuse, either directly or indirectly, such as death from alcohol poisoning, cirrhosis of the liver, motor vehicle crashes, diabetes, or homicide. In all such cases, premature death costs the economy potential production.

This analysis assumes each individual holds the potential to join the workforce and contribute to the economy. Premature death costs the economy in the form of employment and the possible production of goods and services as well as the circulation of earned wages back into the local economy. Additionally, household production is lost. While some individuals may not join the workforce, they hold the potential to provide household services such as raising children and cleaning and maintaining the household. While these tasks do not carry a specific monetary value, they do carry value that should not be overlooked.

Lost production as a result of death attributed to alcohol or drug abuse is the largest alcohol and drug-related cost to the Alaska economy.

Methodology

A 1998 study for the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism (NIDA/NIAAA), "The Economic Costs of Alcohol and Drug Abuse in the United States – 1992," provides the methodological basis used throughout this report. The NIDA/NIAAA study provided an estimate on the Present Value of Lifetime Earnings (PVLE), essentially the monetary worth of an individual's potential wages given their age and gender. The authors of the 1998 study updated their methodology and the estimated values of PVLE again in 2000. The updated estimates were used for purposes of this report and were adjusted to reflect the change in male and female income in Alaska between 2000 and 2010, 40 percent and 43 percent increases, respectively.

Estimations of PVLE were then applied to the total number of alcohol and drug-related deaths for one year. The Alaska Bureau of Vital Statistics provided a list of alcohol or drug-related deaths in Alaska by age and gender, from 2006 to 2010. The Center for Disease Control (CDC) maintains the Alcohol-Related Disease Impact (ARDI) database, which provided the causes of death and the corresponding International Classification of Disease (ICD) codes as well as the percent of those deaths that can be attributed to alcohol. This information is based on 2001 to 2005 data, which was the most updated information available. ICD

codes and attribution rates of drug-related deaths were obtained from a 2004 study, "The Economic Costs of Drug Abuse in the United States, 1992 – 2002. Again, this was the most updated information available. It is important to note that information from the CDC is based on Alaska-specific data, while the 2004 drug abuse study provided information based on national data.

In summary, the percentage rates of death that can be attributed to alcohol and drug abuse were applied to the data provided by the Bureau of Vital Statistics and an annual average was taken from the five years of data. Total deaths attributed to alcohol and drug abuse were then applied to the estimated value of a person's productivity by age and gender.

Results

From 2006 to 2010, there was an average of 397 deaths annually in Alaska as a result of alcohol and drug abuse. Alcohol and drugs were a factor in 11 percent of total deaths during that time, with an annual average of 3,531 deaths from all causes from 2006 to 2010.

Table 1 shows a breakdown of those deaths that can be attributed to alcohol or drugs by age and gender. Two-thirds, or 263, alcohol and drug-related deaths in Alaska were male. One-third, or 134 deaths, were female. The largest number of both male and female deaths occurred with those between the ages of 45 and 54, with 111 deaths or 28 percent. One-third of alcohol and drug-related deaths were among those between the ages of 25 and 44.

TABLE 1. Average Annual Deaths Attributed to Alcohol and Drug Abuse by Age and Gender, 2006-2010

Age	Male	Female
0-4	1	2
5-14	3	1
15-24	27	10
25-34	37	16
35-44	47	28
45-54	70	41
55-64	48	19
65-74	19	7
75-84	8	6
85+	2	3
Total	**263**	**134**

Columns may not add due to rounding.
Source: Bureau of Vital Statistics

Nearly three-quarters of deaths attributed to substance abuse were alcohol-related. Among alcohol-related deaths, the largest contributor was alcoholic liver disease with an average of 44 annual deaths. The second largest contributor was suicide with 35 deaths per year. Other major causes of death include alcohol dependence syndrome, alcohol poisoning, alcohol abuse, alcoholic psychosis, other poisonings, and motor-

vehicle crashes. Table 2 shows deaths attributed to alcohol by cause, broken down by direct primary cause, direct secondary cause, and injuries and adverse incidents.

TABLE 2. Average Annual Deaths Attributed to Alcohol Abuse by Cause, 2006-2010

	Average
Direct Primary Cause	
Alcoholic liver disease	44
Alcohol dependence syndrome	31
Alcohol poisoning	25
Alcohol abuse	15
Alcoholic psychosis	15
Alcohol cardiomyopathy	6
Direct Secondary Causes	
Liver cirrhosis, unspecified	12
Stroke, hemorrhagic	3
Liver cancer	2
Hypertension	2
Esophageal cancer	1
Breast cancer, females	1
Stroke, ischemic	1
Acute pancreatitis	1
Chronic pancreatitis	1
Injuries and Adverse Effects Indirectly Attributed to Alcohol	
Suicide	35
Poisoning (not alcohol)	24
Motor-vehicle traffic crashes	20
Homicide	18
Drowning injuries	9
Fall injuries	8
Hypothermia	6
Fire injuries	5
Motor-vehicle non-traffic crashes	3
Air-space transport	3
Water transport	1
Occupational and machine injuries	1
Total	**293**

Column may not add due to rounding.
Source: Death data from the Alaska Bureau of Vital Statistics. ICD-10 codes and attribution rates from the Center for Disease Control Alcohol-Related Disease Impact database.

Drug abuse resulted in an annual average of 104 deaths between 2006 and 2010. The largest contributors to causes of death were unspecified drugs, medicaments, and biological substances with a combined total of 49 deaths and narcotics and psycholdysleptics (hallucinogens) with 30 deaths on average per year. In total, HIV, Hepatitis B, and Hepatitis C resulted in an annual average of eight deaths. Table 3 shows a breakdown of drug-related deaths by cause.

TABLE 3. Average Annual Deaths Attributed to Drug Abuse by Cause, 2006-2010

	Average
Direct Primary Cause	
Multiple drug use and use of other psychoactive substances	3
Cocaine	1
Accidental Poisoning By and Exposure to Noxious Substances	
Other and unspecified drugs, medicaments and biological substances	49
Narcotics and psychodysleptics [hallucinogens], not elsewhere classified	30
Antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified	5
Nonopioid analgesics, antipyretics and antirheumatics	1
Organic solvents and halogenated hydrocarbons and their vapours	1
Other Causes	
Homicide or injury inflicted by another person with intent to injure or kill, by any means	6
Hepatitis C	4
HIV	3
Hepatitis B	1
Total	**104**

Column may not add due to rounding.
Source: Death data from the Alaska Bureau of Vital Statistics. ICD-10 codes and attribution rates from *The Economic Costs of Drug Abuse in the United States 1992-2002*.

Taking into account the number of deaths attributed to drugs and alcohol by age and gender, total productivity loss as a result of these deaths amounted to $424.1 million. Productivity losses for males total $318.7 million and $105.4 million for females. The largest losses were in the 35 to 44 age group among both males and females, followed by ages 45 to 54 and ages 25 to 34. Losses among those aged 25 to 54 total $311 million.

TABLE 4. Mortality Costs Attributed to Alcohol and Drug Abuse, 2010 ($)

Age	Male	Female	Total
00-04	$1,946,000	$2,253,000	$4,199,000
05-14	6,030,000	1,139,000	7,169,000
15-24	56,162,000	14,763,000	70,925,000
25-34	74,778,000	23,094,000	97,872,000
35-44	78,685,000	30,902,000	109,587,000
45-54	75,949,000	27,665,000	103,614,000
55-64	22,619,000	5,116,000	27,735,000
65-74	2,275,000	442,000	2,717,000
75-84	192,000	68,000	260,000
85+	9,000	3,000	12,000
Total	**$318.7 million**	**$105.4 million**	**$424.1 million**

Columns may not add due to rounding.
Source: Present Value of Lifetime Earnings in 2000 from Rice, adjusted for change in per capita income from 2000 to 2010 from DOLWD. Mortality data from Bureau of Vital Statistics.

Lost Production Due to Diminished Productivity

As a result of substance abuse, individuals can experience diminished productivity in their employment and non-employment activities. Diminished productivity can come in the form of high absenteeism, reduced efficiency as a result of diminished physical and mental abilities, or difficulty in maintaining a steady job. Non-employment activities that can be affected by alcohol or drug abuse include household and parenting services. For more extreme cases, substance abuse may result in hospitalization or institutionalization, essentially removing the individual from productive society altogether. Diminished productivity results in significant costs to Alaska.

Methodology

The loss of potential earnings was used as the basis for measuring the economic costs of diminished productivity from alcohol and drug abuse. The 1998 NIDA/NIAAA study published national estimates on lost earnings from alcohol and other drug dependence. As no updated estimates are available, the original 1998 figures were used for the male population. The NIDA/NIAA study found no impacts from lost earnings for females. However, University of California Professor, Dorothy Rice, published a study in 1990 that included a comprehensive estimate of lost productivity for females which was utilized in this report. These documents report that alcohol dependent males and females experience 9.4 percent and 6.9 percent loss of average earnings, respectively. Drug dependent males and females experience 7.7 percent and 5.4 percent loss of average earnings, respectively.

To estimate the total Alaskan population that experience drug or alcohol dependence or abuse, Alaska population and earnings by gender data for 2010 were obtained from the Alaska Department of Labor and Workforce Development (DOLWD). The Substance Abuse and Mental Health Services Administration (SAMHSA) conducts the annual National Survey on Drug Use and Health (NSDUH), which reports state-specific data on population substance dependence and abuse. The most recent Alaska dependence and abuse data available is from the 2008-2009 study which found that 8.5 percent of Alaska's population age 18 or older are dependent on or abuse alcohol, while 2.8 percent of the state's population are dependent on or abuse illicit drugs.

Dependency rates were applied to Alaska's total population 18 and older to find the number of individuals that abuse or are dependent on alcohol and drugs. The percentage of lost earnings was applied to 2010 average annual earnings for both males and females to find the amount of lost earnings per year per individual. Finally, this figure was applied to the total dependent population of Alaska to find total lost earnings for all alcohol and drug dependent individuals in Alaska for 2010.

Results

Lost earnings as a result of diminished productivity from alcohol and drug dependence or abuse total an estimated $174 million. Substance abuse or dependence afflicted approximately 58,716 individuals age 18 and older in Alaska. Alaska had 44,181 residents with alcohol dependence or abuse and 14,535 residents with drug dependence or abuse. On average, males lost $4,106 per year due to alcohol abuse and $3,264 due to

drug abuse. Females lost an average of $2,023 per year as a result of alcohol abuse and $1,583 per year from drug abuse. Table 5 shows a breakdown of diminished productivity from alcohol and drug abuse in 2010.

TABLE 5. Productivity Losses from Alcohol and Drug Abuse, 2010

	Alcohol Abuse		Drug Abuse	
	Male	Female	Male	Female
Alaska population 18 years and over	273,222	249,631	273,222	249,631
Percent of Alaska's population 18 years and over abusing or dependent[1]	8.5%	8.5%	2.8%	2.8%
Estimated number of Alaskans 18 years and over abusing or dependent	23,087	21,094	7,596	6,940
Annual average earnings for Alaska in 2010	$43,684	$29,323	$43,684	$29,323
Loss in productivity from alcohol and other drug dependence	9.4%	6.9%	7.7%	5.4%
Annual average lost earnings from alcohol and other drug abuse	$4,106	$2,023	$3,364	$1,583
Estimated productivity loss from alcohol and other drug abuse	**$94.8 million**	**$42.7 million**	**$25.5 million**	**$11.0 million**

[1]Alcohol and drug dependence and abuse based on 2008-2009 data from the SAMHSA *National Survey on Drug Use and Health*. These were the most recent state-specific figures available.
Source: Alaska 2010 demographic data from the DOLWD. Earnings by gender from the Alaska Department of Labor & Workforce Development, Research and Analysis Section, *Trends October 2011*. Lost productivity rates from 1998 NIDA/NIAAA study.

Lost Production Due to Incarceration

Alaska also faces lost productivity from incarcerated residents of the state. Incarcerated individuals may commit a crime directly related to alcohol or drug use, such as driving while intoxicated or selling narcotics, or they may commit a crime not directly related but while under the influence of a substance, such as manslaughter or robbery. As with mortality and diminished productivity, it is assumed that incarcerated adults could otherwise be productive members of the workforce or in households. Therefore, their absence from society due to incarceration is an economic loss for Alaska.

Methodology

The primary method for estimating lost productivity due to incarceration follows that of diminished productivity, by applying potential earnings to the number of members absent from the workforce due to alcohol or drug related incarcerations. The Alaska Department of Corrections (DOC) maintains annual records for statewide incarcerations by offense and gender. The percentage rates of crimes attributable to alcohol and drug use published in the 1998 NIDA/NIAAA study (shown in Table 6) were used as no new attribution rates have been published.

(see table next page)

TABLE 6. Attribution Rates for Alcohol and Drug-Related Incarcerations

	Alcohol	Other Drug
Homicide	30.0%	15.8%
Assault	30.0	5.1
Sexual assault	22.5	5.1
Robbery	3.4	27.2
Burglary	3.6	30.0
Larceny/theft	2.8	29.6
Auto theft	3.5	6.8
Drug laws	0.0	100.0
Driving under the influence	100.0	0.0
Liquor laws	100.0	0.0
Prostitution	0.0	12.8

Source: *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998).

These percentages were applied to the total number of incarcerated individuals by offense and gender published in DOC's *2010 Offender Profile* to obtain the number of incarcerations that can be attributed to alcohol and drug abuse. Finally, information on the average annual earnings for males and females in 2010 published by the DOLWD was used to find the total cost of lost productivity due to incarceration. Average annual earnings in 2010 were $43,684 for males and $29,323 for females.

Results

The total economic cost in 2010 of lost productivity as a result of incarcerations from alcohol and drug abuse in Alaska was $63.7 million. Alcohol abuse resulted in 887 incarcerations and drug abuse contributed to 643 imprisonments. The largest number of alcohol-attributed arrests resulted from breaking liquor laws, followed by assault, homicide, driving under the influence, and sexual assault. The vast majority of drug-attributed arrests were as a result of breaking drug laws, followed by homicide, larceny or theft, burglary, and robbery. With higher annual earnings and significantly higher incarcerations, lost productivity from Alaska males made up 90 percent, or $57.5 million, in lost productivity from incarceration. Lost productivity from Alaska females in 2010 for alcohol or drug related incarcerations totaled $6.2 million.

(see table next page)

TABLE 7. Alcohol and Drug-Related Incarcerations in Alaska by Offense and Gender, 2010

	Alcohol		Other Drug		
	Males	Females	Males	Females	Total
Homicide	129	11	68	6	214
Assault	174	12	30	2	218
Sexual Assault	114	1	12	0	127
Robbery	4	0	34	2	40
Burglary	5	0	45	2	52
Larceny-Theft	6	2	63	18	89
Auto Theft	2	0	4	0	6
Drug Laws	0	0	270	87	357
Driving Under the Influence	119	20	0	0	139
Liquor Laws	238	49	0	0	287
Prostitution	0	0	0	0	0
Total	**791**	**95**	**526**	**117**	**1,529**
Potential loss of earnings	**$34.6 million**	**$2.8 million**	**$23.0 million**	**$3.4 million**	**$63.7 million**

Note: Totals may not add due to rounding.
Source: McDowell Group based on DOC 2010 Offender Profile data and attribution rates by offense from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998).

Lost Production Due to Alcohol/Drug Treatment

The last factor to be considered in lost production is admissions to alcohol or drug treatment facilities. When an otherwise productive member of society is absent, the result is an economic loss in the form of reduced employment and household production and services. Treatment can include long-term residential treatment, short-term hospitalization, and detoxification. Lost production as a result of treatment is measured in lost potential earnings.

Methodology

The Alaska Department of Health and Social Services (DHSS), Division of Behavioral Health (DBH) maintains records on the total bed days in treatment facilities across the state. Total bed days were converted into years and then applied to average annual per capita income. According to the DOLWD, average annual income in 2010 was $44,205.

Results

DHSS reported a total of 93,760 bed days in 2010 at 15 treatment facilities across the state, four of which provide detoxification treatment. This number of bed days is the equivalent to 257 years. With an average annual income of $44,205, that amounted to a total loss in production of $11.4 million. However, it should be noted that many Alaskans seek treatment outside the state. Data on the total number of bed days for out

of state treatment is unavailable, those figures are not accounted for here. As a result, this estimation is extremely conservative.[1] Table 8 shows the total lost production from inpatient treatment in Alaska for 2010.

TABLE 8. Lost Production Due to Alcohol and Drug Treatment, 2010

	Total
Total residential and detox bed days	93,760
Years equivalent	256.9
Avg. annual income	$44,205
Potential lost income	**$11.4 million**

Source: 2010 bed days from DHSS and 2010 average income from DOLWD.

[1] Source: *Finding the Answers to Tough Questions About Substance Abuse in Alaska, 1999 Annual Report*, State of Alaska Advisory Board on Alcoholism and Drug Abuse.

Chapter 2: Traffic Crashes

Alcohol use is one of the major contributors to traffic crashes in Alaska. In 2010, 779 traffic crashes were attributed to alcohol use, costing approximately $50.5 million. Of total traffic crashes, half were property damage only, 288 were only minor injuries, 75 were major injuries, and 26 were fatal. The Alaska Department of Transportation and Public Facilities (DOTPF) defines alcohol-related crashes according to the following conditions:

- If the blood alcohol test given to the driver, pedestrian, pedal cyclists, or recreational vehicle operator was positive.
- If a police investigation indicated that alcohol consumption was a contributing factor.
- If a citation was issued for driving while under the influence of alcohol, driving with an open container of alcohol, or public drunkenness.

This section examines the costs incurred from traffic accidents in five categories: insurance administration, workplace costs, household productivity, legal costs, and property damage. Insurance administration, legal costs, and property damage costs are direct costs associated with assessing and covering the damage from the accident itself. Workplace and household costs are due to physical or mental impairment resulting in the inability to perform duties. Household costs are particularly high because they take into consideration that in some cases one member of the household may need to be absent from the workplace to act as caregiver to another injured party, resulting in additional lost income.

Methodology

In 2000, the National Highway Traffic Safety Administration (NHSTA) published estimates of the costs per accident including the costs of insurance administration, workplace costs due to absence and lost productivity, household loss of productivity, legal costs, and property damage. As these figures have not been updated, they were adjusted for inflation to 2010 dollars and for the Alaska cost-of-living differential, approximately 27.6 percent above the national average. NHSTA figures were grouped into costs by injury severity including fatal, major injury, minor injury, and property damage only (no physical injury).

Workplace costs and household productivity costs take into account a loss of productivity due to impairment or inability to perform duties. For this reason, costs for fatal crashes will not be included in this section as they were already taken into account in the section on lost productivity due to mortality. However, lost productivity as a result of injuries sustained in traffic crashes were not accounted for in that section and so will be included here. Health care costs as a result of injury are included in a later chapter. Table 9 is a breakdown of costs per accident by injury severity and cost category.

(see table next page)

TABLE 9. Unit Costs of Traffic Crashes in the U.S., 2010 ($)

Type of Cost	Fatal	Major Injury (MAIS 5)	Minor Injury (MAIS 1)	Property Damage Only
Insurance administration	$59,978	$110,192	$1,197	$187
Workplace cost	*	13,235	407	82
Household productivity	*	273,106	924	76
Legal cost	165,034	129,031	242	0
Property damage	16,599	15,263	6,211	2,398
Total	**$241,611**	**$540,827**	**$8,982**	**$2,744**

*These figures were included in the section on lost productivity due to mortality.
Source: *The Economic Cost of Motor Vehicle Crashes, 2000*, NHSTA. Figures adjusted for inflation to 2010 dollars using BLS data and then adjusted for ACCRA's Anchorage cost-of-living differential for 2010 Q2.

The DOTPF maintains records of traffic crashes in Alaska by injury severity and presents them in an annual Crash Data report. The *2008 Crash Data* report, which has the most recently available crash data by injury severity, was used in this study. NHSTA reports crashes in terms of Maximum Abbreviated Injury Scale (MAIS) levels, where Level 1 was matched to the DOTPF "minor injury" category and MAIS Level 5 was matched to the ADOTPF "major injury" category. Both sources report "fatal" and "property damage only" incidences and so no extrapolation was necessary. Additionally, DOTPF includes in its crash data report those that were alcohol related.

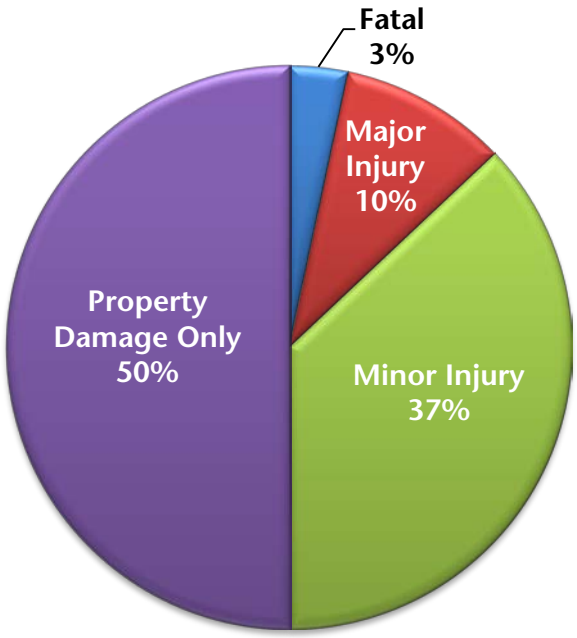
It is important to note that DOTPF does not keep records of traffic accidents where drugs are suspected or involved, therefore, those figures are not included in this report. Additionally, while DOTPF maintains records of off-road vehicle crashes such as ATVs and snowmachines that occur on roadways, no record is kept of those incidences that occur off road. However, ATV and snowmachine incidences that result in lost productivity due to mortality and health care costs are included in those sections of this report.

Results

In 2008, there were 779 alcohol-related traffic crashes reported in Alaska, accounting for seven percent of the 11,630 total traffic crashes in the state that year. Half (339) of alcohol-related incidences incurred property damage only, over one-third resulted in minor injuries, one out of ten resulted in major injuries, and 3 percent had fatal results. Figure 2 shows the percentage of alcohol-related traffic crashes by injury severity.

(see figure next page)

FIGURE 2. Percent of Alcohol-Related Traffic Crashes by Type in Alaska, 2008



Applying the most recent crash data (discussed above) to the unit costs per crash in 2010 dollars, total alcohol-related crashes in Alaska cost society $50.5 million in insurance administration costs, workplace costs, household productivity, legal costs, and property damage. The highest costs came from major injury crashes, which totaled $40.6 million. For all crashes, household productivity costs were the largest expense at $20.7 million, followed by legal costs at $14 million. Table 10 shows costs for each category by injury severity for 2010.

TABLE 10. Number of Traffic Crashes and Total Cost of Alcohol-Related Crashes in Alaska, 2010
(in thousands of $)

Number of Traffic Crashes and Cost Type	Fatal	Major Injury	Minor Injury	Property Damage Only	Total
Number of traffic crashes	26	75	288	390	779
Insurance administration cost	$1,559	$8,264	$345	$73	$10,242
Workplace cost	*	993	117	32	1,142
Household productivity	*	20,483	266	30	20,779
Legal cost	4,291	9,677	70	0	14,038
Property damage cost	432	1,145	1,789	935	4,300
Total Costs *(in thousands)*	**$6,282**	**$40,562**	**$2,477**	**$1,071**	**$50,502**

* These figures were included in the section on lost productivity due to mortality.
Source: McDowell Group. Note: Number of accidents is based on 2008 data from Alaska Department of Transportation and Public Facilities report, *2008 Crash Data*; and *The Economic Cost of Motor Vehicle Crashes, 2000*, NHTSA, adjusted for inflation and cost-of-living in Alaska.

Chapter 3: Criminal Justice and Protective Services

Criminal justice and protective services are a major factor in the economic costs resulting from alcohol and drug abuse. These costs totaled $217.7 million in 2010. Costs for law enforcement, legal and adjudication services, incarceration services, and costs to victims amounted to $147.6 million. Child protective services were an estimated $70.1 million in 2010. Child protective services include foster care, adoption care, residential care, and social worker services. Adult protective service estimates were not included in this study.

Criminal Justice

With a number of Alaska residents dependent on or abusing alcohol and drugs, it is not surprising that alcohol and drugs play a role in criminal activity. Substance abuse can be directly attributed to crimes such as driving under the influence or the sale of illegal substances, but it can also play a role in other violent and non-violent crimes such as homicide or burglary. Many costs come along with these crimes including the costs of law enforcement, costs of legal and adjudication fees, incarceration costs, and the costs to victims involved in the crimes.

Total criminal justice costs to Alaska in 2010 were an estimated $147.6 million. Figure 3 shows the distribution of criminal justice costs.

- In 2010, 18,296 arrests were attributed to alcohol or drug abuse, resulting in an estimated $52.3 million in law enforcement costs and $14.2 million in legal and adjudication costs.
- There were 1,529 incarcerations attributed to alcohol or drug-related crimes, with total incarceration costs of $56.7 million.
- Alaska had 7,996 victims of alcohol or drug-related crimes. Total costs of victim services and losses in 2010 were $24.4 million.

FIGURE 3. Criminal Justice Costs, 2010

Methodology

The primary method used to estimate the economic costs of alcohol and drug-related crime followed that of the 1998 NIDA/NIAAA study, which provided the basis of many sections in this report. Four groups of cost measures were used: law enforcement, legal and adjudication fees, costs incurred by victims of crimes, and incarceration costs of offenders. Rates of arrests and incarcerations attributed to substance abuse were taken from the 1998 NIDA/NIAAA study as no updates to these figures have been published.

Law Enforcement and Legal and Adjudication Costs

To estimate the costs of law enforcement and legal and adjudication processes, criminal arrests and offense data was taken from the Alaska Department of Public Safety (DPS) document, *Crime Reported in Alaska 2010*. As part of the nationwide Unified Crime Reporting system, DPS annually reports all known offenses as well as pure arrest data, or the number of incidences that resulted in an arrest. In 2010, law enforcement agencies reporting to DPS had jurisdiction over 99.3 percent of Alaska's population. The data presented here shows all known offenses to law enforcement in the offense categories of homicide (including murder and manslaughter), aggravated assault, sexual assault, robbery, burglary, larceny/theft, and auto theft. These are all known offenses regardless of whether an arrest was made. The remaining categories of driving while intoxicated, liquor laws, stolen property, prostitution, and violation of drug laws represent pure arrest data as information on all known offenses was not available.

As noted in the *Economic Costs of Alcohol and Other Drug Abuse in Alaska, 2005 Update*, Alaska participated in the Arrestee Drug Abuse Monitoring (ADAM) Project which sought to provide information on the linkage between inmates and alcohol and drug use among inmates in Anchorage. In 1999, the survey found that 54 percent of incarcerated males and 56 percent of females tested positive for one or more controlled substances. It also stated that alcohol use among male arrestees that entered the system was extremely high. Unfortunately, data from ADAM has not been updated and, further, does not provide specific enough alcohol and drug use rates for the purpose of this report.

Attribution rates from the 1998 NIDA/NIAAA report were used to determine the number of arrests that can be attributed to alcohol and drug abuse. As no update to the estimated costs of law enforcement and legal and adjudication fees per arrest has been made, figures from the NIDA/NIAAA study were used and adjusted for inflation and Alaska's cost-of-living differential. Table 11 shows total offenses known and arrest data in 2010 and those that are alcohol or drug-related.

TABLE 11. Arrests Attributed to Alcohol and Drug Abuse in Alaska, 2010

Type of Offense	Total Number of Arrests	Percent Attributed to Alcohol Abuse	Percent Attributed to Drug Abuse	Arrests Attributed to Alcohol Abuse	Arrests Attributed to Drug Abuse	Total Substance Related Arrests
Homicide	37	30.0%	15.8%	11	6	17
Aggravated assault	3,370	30.0	5.1	1,011	172	1,183
Sexual assault	528	22.5	2.4	119	13	131
Robbery	592	3.4	27.2	20	161	181
Burglary	3,083	3.6	30.0	111	925	1,036
Larceny/theft	15,412	2.8	29.6	432	4,562	4,993
Auto theft	1,607	3.5	6.8	56	109	166
Driving while intoxicated*	4,996	100.0	0.0	4,996	0	4,996
Liquor laws*	3,076	100.0	0.0	3,076	0	3,076
Stolen property*	34	0.0	15.1	0	5	5
Prostitution*	160	0.0	12.8	0	20	20
Drug laws*	2,491	0.0	100.0	0	2,491	2,491
Total	**35,386**			**9,832**	**8,464**	**18,296**

Source: McDowell Group, based on attribution rates from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998); and *Crime Reported in Alaska, 2010* from DPS.

Note: Columns and rows may not add due to rounding.

*Categories marked with an asterisk (*) represent pure arrest data. Other categories are offenses known to law enforcement, which include arrests as well as offenses for which no arrest was made.

INCARCERATION COSTS

To determine the costs of incarcerations in 2010, total incarceration figures were used as published by the Alaska Department of Corrections (DOC) in the *2010 Offender Profile*. DOC provides an annual report that examines the total inmate population by offense category as of December 31. Attribution rates for alcohol and drug-related offenses, as well as estimated costs per incarceration, were taken from the 1998 NIDA/NIAAA study. Costs were adjusted for inflation and Alaska's cost-of-living differential. Table 12 shows total incarcerations by offense and those attributed to alcohol and drug abuse.

TABLE 12. Incarcerations Attributed to Alcohol and Drug Abuse in Alaska, 2010

Type of Offense	Alaska Inmates in 2010 by Category	Percent Alcohol Related	Percent Other Drug Related	Incarcerations Attributed to Alcohol Abuse	Incarcerations Attributed to Other Drug Abuse	Total Incarcerations Related Alcohol and Other Drug Abuse
Homicide	465	30.0%	15.8%	140	73	213
Aggravated assault	619	30.0	5.1	186	32	217
Sexual assault	513	22.5	2.4	115	12	128
Robbery	133	3.4	27.2	5	36	41
Burglary	155	3.6	30.0	6	47	52
Larceny/theft	272	2.8	29.6	8	81	88
Auto theft	61	3.5	6.8	2	4	6
Driving while intoxicated	139	100.0	0.0	139	0	139
Liquor laws	287	100.0	0.0	287	0	287
Prostitution	3	0.0	12.8	0	0	0
Drug laws	357	0.0	100.0	0	357	357
Total	**3,004**			**886**	**642**	**1,529**

Source: McDowell Group, based on attribution rates from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998); and incarceration data from DOC *2010 Offender Profile*. Counts do not include entire inmate population; only those offenders in the specified categories are counted. Inmates whose offense was an "attempt" at any of the specified categories are included in the counts. For example, inmates imprisoned for "attempted theft" would be grouped in the "larceny/theft" category.

Notes: Columns and rows may not add due to rounding.

VICTIMIZATION COSTS

The Bureau of Justice Statistics publishes national data on victimizations per 1,000 people age 12 and older. BJS victimization rates are published in the Criminal Victimization 2010 report. These figures were applied to 2010 population data from DOLWD to find 2010 total victimizations. Attribution rates of alcohol and drug-related crimes were then applied to total victimizations to find victimizations attributed to alcohol and drug-related crimes in Alaska. Cost estimates per victim were taken from a 1996 report by the *National Institute of Justice, Victim Costs and Consequences: A New Look*. These estimates factor in several sources of costs including productivity, medical care/ambulance, mental health care, police/fire services, social/victim services, and property loss/damage. Medical care, mental health care, and victim productivity losses are included as those

are not accounted for in other sections of this report. Table 13 shows total victimization by offense and those that can be attributed to alcohol and drug-related crimes.

TABLE 13. Victimizations Attributed to Alcohol and Drug Abuse in Alaska, 2010

Type of Crime	Victimizations per 1,000 persons age 12 or older or per 1,000 households	Total Number of Victims	Percent Alcohol Related	Percent Other Drug Related	Number of Victims Attributed to Alcohol Abuse	Number of Victims Attributed to Other Drug Abuse	Total Number of Victims Attributed to Substance Abuse
Robbery	1.9	1,092	3.4%	27.2%	37	297	334
Assault	12.3	7,071	30.0	5.1	2,121	361	2,482
Personal larceny	0.5	287	2.8	29.6	8	85	93
Burglary	23.8	13,683	3.6	30.0	493	4,105	4,597
Motor vehicle theft	4.9	2,817	3.5	6.8	183	192	375
Sexual assault	0.7	402	22.5	2.4	91	10	100
Murder	-	32	30.0	16.0	10	5	15
Total		**25,385**			**2,942**	**5,054**	***7,996***

Source: McDowell Group, based on attribution rates from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998); population data from DOLWD, and victimization rates from BJS *Criminal Victimization 2010*.

Total cost per victim by type of crime is presented in Table 14. Homicide incurs the most victim costs at $61,494 per victim, while larceny costs per victim average $729.

TABLE 14. Costs per Victim, 2010 ($)

Type of Crime	Productivity Loss	Medical Care/ Ambulance	Mental Health Care	Police/ Fire Services	Social/ Victim Services	Property Loss/ Damage	Total
Robbery	$1,884	$1,029	$184	$258	$50	$1,487	$4,891
Assault	1,884	1,182	211	119	32	52	3,480
Rape	436	1,390	612	73	54	198	2,764
Homicide*	**	45,330	13,349	2,578	0	238	61,494
Larceny	16	0	17	159	2	535	729
Burglary	24	0	14	258	10	1,924	2,229
Auto theft	89	0	14	278	0	6,544	6,925

Source: McDowell Group estimates based on U.S. Department of Justice, National Institute of Justice report. Figures adjusted to 2010 dollars and for Alaska cost-of-living differential.
*Homicide dollar estimates from those of "Fatal crimes: Rape, Assault, etc…" assumed to be those resulting in homicide conviction.
**Homicide productivity losses are not included as they were already accounted for in the section on productivity losses due to mortality.

Results

In 2010, criminal justice costs, including law enforcement costs, legal and adjudication costs, incarceration costs, and cost to victims totaled $147.6 million.

Law Enforcement Costs

In 2010, there were 18,296 offenses or arrests that can be attributed to alcohol or drug abuse, 43 percent of the 42,147 arrests that year. Just over half, or 9,832 arrests, were alcohol-related, with the remaining 8,464 being drug-related. The largest categories of arrests were DWIs, with 4,996 arrests, and larceny or theft with 4,993 arrests (33 percent of total larceny/theft offenses were attributed to alcohol or drugs).

Total cost of law enforcement for 2010 was $52.3 million, with $9.5 million for alcohol-related offenses and $42.8 million for drug-related offences. Larceny/theft offenses incurred the largest cost at a total of $25.2 million, followed by drug laws at $12.6 million. Table 15 shows total law enforcement costs by offense broken down by cost from alcohol and drug-related offenses.

TABLE 15. Law Enforcement Costs Attributed to Alcohol and Drug Abuse by Offense in Alaska, 2010 ($)

Type of Offense	Alcohol	Drug	Total
Homicide*	$55,000	$29,000	$84,000
Aggravated assault*	5,113,000	870,000	5,983,000
Sexual assault*	589,000	54,000	643,000
Robbery*	102,000	813,000	915,000
Burglary*	562,000	4,676,000	5,238,000
Larceny-theft*	2,174,000	23,066,000	25,240,000
Auto theft*	290,000	548,000	838,000
Driving while intoxicated	390,000	-	390,000
Liquor laws	236,000	-	236,000
Stolen property	-	26,000	26,000
Prostitution	-	102,000	102,000
Drug laws	-	12,596,000	12,596,000
Total	**$9.5 million**	**$42.8 million**	**$52.3 million**

Source: McDowell Group, based on attribution rates from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998); and offense data from Alaska Department of Public Safety, *Crime in Alaska, 2010*.
Columns may not add due to rounding.
*Categories marked with an asterisk (*) represent pure arrest data. Other categories are offenses known to law enforcement, which include arrests as well as offenses for which no arrest was made.

Legal and Adjudication Costs

Legal and adjudication costs in 2010, as a result of the 18,296 arrests, totaled an estimated $14.2 million. Drug-related arrests accounted for more than three-fourths, or $11.2 million, of these costs while alcohol-related offenses contributed to $3 million of legal and adjudication costs. Larceny/theft offenses were the biggest cost at $6.6 million, followed by drug law offenses at $3.3 million. Table 16 breaks down legal and adjudication costs for alcohol and drug-attributed crimes by offense.

TABLE 16. Legal and Adjudication Costs Attributed to Alcohol and Drug Abuse by Offense in Alaska, 2010 ($)

Type of Offense	Alcohol-Related	Drug-Related	Total
Homicide	$13,000	$7,000	$20,000
Aggravated assault	1,343,000	224,000	1,566,000
Sexual assault	256,000	27,000	283,000
Robbery	27,000	210,000	237,000
Burglary	148,000	1,211,000	1,359,000
Larceny/theft	569,000	6,015,000	6,584,000
Auto theft	63,000	145,000	208,000
Driving while intoxicated	390,000	-	390,000
Liquor laws	236,000	-	236,000
Stolen property	-	7,000	7,000
Prostitution	-	26,000	26,000
Drug laws	-	3,280,000	3,280,000
Total	**$3.0 million**	**$11.2 million**	**$14.2 million**

Columns and rows may not add due to rounding.

Source: McDowell Group, based on attribution rates from The Economic Costs of Alcohol and Drug Abuse in the United States – 1992 (NIDA/NIAAA, 1998); and offense data from DPS, *Crime Reported in Alaska*, 2010.

Incarceration Costs

In 2010, there were 1,529 inmates incarcerated for offenses that can be attributed to alcohol or drugs. Of those, 886 were alcohol-related and 643 were drug-related. Total incarceration costs for alcohol and drug-related crimes total $56.7 million. Incarcerations for drug laws account for one-third, or $19.1 million, of incarceration costs. Aggravated assaults and homicides attributed to alcohol or drug abuse each total over $9 million in incarceration costs. Table 17 shows total costs of incarceration for alcohol and drug-related crimes by offense.

(see table next page)

TABLE 17. Incarceration Costs Attributed to Alcohol and Drug Abuse by Offense in Alaska, 2010 ($)

Type of Offense	Alcohol-Related	Other Drug-Related	Total
Homicide	$5,956,000	$3,140,000	$9,096,000
Aggravated assault	7,938,000	1,342,000	9,280,000
Sexual assault	4,877,000	525,000	5,402,000
Robbery	204,000	1,633,000	1,837,000
Burglary	235,000	1,962,000	2,197,000
Larceny/theft	329,000	3,439,000	3,768,000
Auto theft	89,000	178,000	267,000
Driving while intoxicated	5,845,000	-	5,845,000
Liquor laws	-	-	-
Prostitution	-	-	-
Drug laws	-	19,052,000	19,052,000
Total	**$25.5 million**	**$31.3 million**	**$56.7 million**

Columns may not add due to rounding.
Source: McDowell Group, based on attribution rates from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998); and incarceration data from Alaska Department of Corrections.

It should be noted that incarceration data does not include Alaska Statute Title 47 Protective Holds in Department of Corrections' facilities. Department personnel estimated that up to 99 percent of protective holds in 2010 were alcohol-related. In 2010, there were a total of 4,460 protective holds. DOC was not able to estimate the cost per hold, therefore, these figures were not included in final costs.

VICTIM COSTS

According to Bureau of Justice Statistics' most recent victimization rates, in 2010 there were approximately 25,385 victims of robbery, assault, rape, homicide, larceny, burglary, and auto theft in Alaska. Of those, 7,996 victims were of alcohol or drug-related crimes.

Total costs for victims including productivity losses, medical care/ambulance services, mental health care, police/fire services, social/ victim services, and property loss/damage for 2010 are an estimated $24.4 million, with property loss or damage accounting for nearly half, or $9.6 million. Medical care and ambulance costs for victims totaled $4.1 million. Table 18 shows victim costs by category of costs and offense.

(see table next page)

TABLE 18. Total Victim Costs, 2010 ($)

Type of Crime	Productivity Loss	Medical Care/ Ambulance	Mental Health Care	Police/ Fire Services	Social/ Victim Services	Property Loss/ Damage	Total
Robbery	$629,727	$343,926	$61,349	$86,173	$16,572	$497,153	$1,634,898
Assault	4,676,158	2,933,519	524,582	295,336	78,756	127,979	8,636,331
Rape	43,719	139,333	61,307	7,353	5,366	19,872	276,950
Homicide*	**	667,254	196,492	37,950	-	3,503	905,199
Larceny	1,478	-	1,554	14,776	185	49,869	67,862
Burglary	109,408	-	63,925	1,185,258	45,587	8,843,849	10,248,028
Auto theft	33,436	-	5,210	104,023	-	2,451,969	2,594,638
Total	**$5.5 million**	**$4.1 million**	**$0.9 million**	**$1.6 million**	**$0.2 million**	**$9.6 million**	**$24.4 million**

Source: McDowell Group estimates based on U.S. Department of Justice, National Institute of Justice report. Figures adjusted to 2010 dollars and for Alaska cost-of-living differential.
*Homicide dollar estimates from those of "Fatal crimes: Rape, Assault, etc…" assumed to be those resulting in homicide conviction.
**Homicide productivity losses are not included as they were already accounted for in the section on productivity losses due to mortality.

Protective Services

Alcohol and drug abuse are significant contributing factors in child abuse and neglect cases throughout Alaska. A 1999 study by the National Center on Addiction and Substance Abuse at Columbia University found that substance-abusing parents were three times more likely to abuse their children and four times more likely to neglect their children. Additionally, they found that seven out of ten abused or neglected children were linked to parents who abuse alcohol or drugs. As cited in the McDowell Group's *Economic Costs of Alcohol and Drug Abuse in Alaska, 2005 Update*, the Alaska Department of Health and Social Services, Division of Alcohol and Drug Abuse (DADA) (now part of the Division of Behavioral Health) published a report that estimated 81 percent of all Division of Family and Youth Services (now the Office of Children's Services) child abuse cases involved alcohol or drug abuse.

Methodology

To estimate total expenditures on child protection as a result of alcohol or drug abusing guardians, the DADA estimate of 81 percent was applied to total expenditures on child protection cases. This estimate has not been updated and department personnel were unable to provide a new approximation without a more extensive investigation into the issue. DHSS provides children's services through the Office of Children's Services (OCS) and the Office of Public Advocacy (OPA). OCS services include foster care, adoption care, residential care, and social work care, while OPA provides advocacy within the legal system for children under state custody.

In the predecessor of this study, the *2005 Update*, adult protective services were included in cost estimates as adult mental and physical impairment can result from alcohol and drug abuse. Department personnel of the Division of Senior and Disability Services previously estimated that 20 percent of cases could be attributed to alcohol and drug abuse on the part of the patient while another 20 percent could be attributed to alcohol and drug abuse on the part of the caregiver. However, for the purpose of the *2012 Update*, the department

was unable to confirm new estimates, nor were they able to support past estimates. As a result, adult protective service costs are not included in this study.

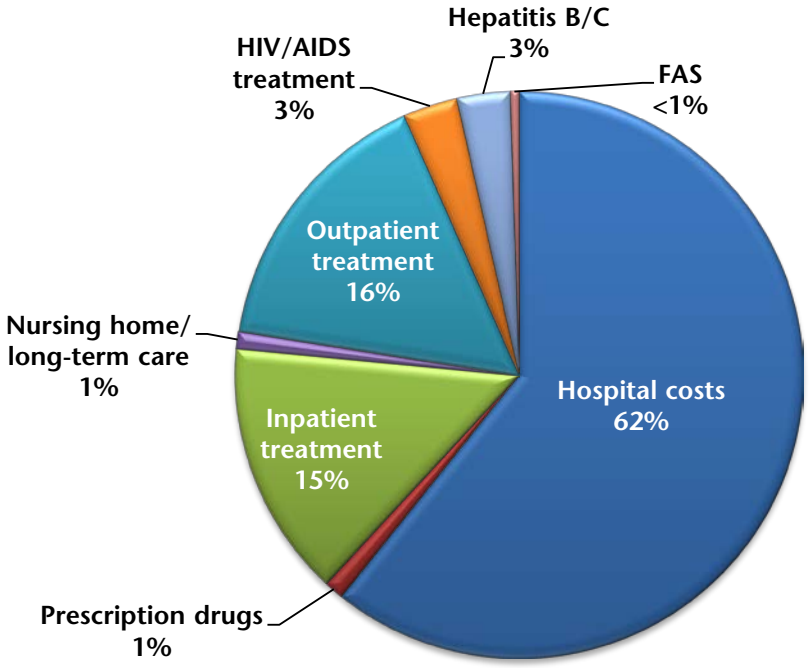
Results

Total costs for child protective services (provided by the Office of Children's Services and the Office of Public Advocacy) that can be attributed to alcohol and drug abuse were approximately $70.1 million in 2010. This includes expenditures on foster care, adoptions and guardianships, residential child care, social workers, and legal advocacy for children under state custody. The largest share of these costs was $33.2 million for social workers followed by $18.9 million in adoption and guardianship services.

Chapter 4: Health Care

Alcohol and drug abuse have a significant impact on health care costs in Alaska. In 2010, health care costs attributed to alcohol and drug abuse amounted to $237.3 million. Substance abuse leads to both acute and chronic injuries and disorders. Acute illnesses include incidences such as alcohol poisoning, while chronic illness could be cirrhosis of the liver. Further, long-term abuse of alcohol and drugs increases the risk of illnesses such as hypertension, diabetes, and stomach cancer. Health care costs as a result of alcohol and drug abuse are examined here in terms of hospital costs, inpatient and outpatient treatment costs, costs of prescription drugs, nursing home or long-term care costs, and the cost of treatment for fetal alcohol syndrome (FAS), HIV and AIDS, and Hepatitis B and C.

Figure 4. Distribution of Health Care Costs Related to Alcohol and Drug Abuse in Alaska, 2010



- Alaska alcohol and drug abuse-related injuries and illness resulted in costs totaling $146.5 million in 2010. Alcohol-related injuries and illnesses cost $133.5 million, while drug-related illness and injuries cost $13 million.
- Residential and outpatient treatment expenditures from the Alaska Department of Health and Social Services, Division of Behavioral Health and Medicaid expenditures totaled $29.9 million and $5.4 million, respectively.
- Medical outpatient treatment for alcohol and drug-related illnesses in Alaska totaled $38.3 million.
- Prescription drug costs for the treatment of alcohol or drug dependence cost Alaska an estimated $1.1 million in 2010.
- There were 2,239 nursing home and long-term care days that can be attributed to alcohol and drug abuse in 2010, costing $1.1 million.

- In 2010, Alaska had a total of 118 HIV and AIDS cases attributed to intravenous drug use, which resulted in annual medical expenses of $7.8 million.
- Intravenous drug use can also be attributed to 436 hepatitis C cases and 1 hepatitis B case, costing a total of $7.3 million in medical expenses in 2010.
- Medical expenses for the treatment of the approximately 15 new cases of Fetal Alcohol Syndrome in 2010 added $286,500 to the costs of treating those previously born with Fetal Alcohol Spectrum Disorders.

Hospital Costs

Hospital costs from injuries and illness related to alcohol and drug abuse play a large role in health care expenses. In 2010, hospital costs of alcohol and drug related injuries and illnesses totaled $146.5 million, nearly two-thirds of total health care costs. Alcohol and drug-related hospital costs are comprised of three primary sources:

- Illness or injuries directly related to alcohol and other drug abuse, such as alcohol cirrhosis or gastritis.
- Illness indirectly related to alcohol and other drug abuse, which could include cancer of the esophagus, burns, or poisoning.
- Treatment or injuries complicated by alcohol and other drug abuse resulting in lengthy hospital stays.

Methodology

In estimating hospital costs of alcohol and drug-related injuries and illnesses in Alaska, three sources were key: SAMHSA's National Survey on Drug Use and Health (NSDUH) , a 2011 study by the Alaska State Hospital & Nursing Home Association (ASHNHA), *Key Indicators Influencing Alaska's Cost of Care*, and the 1998 study for NIDA/NIAAA on *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992.*

According to the most recently available state-specific data from the NSDUH survey, 8.11 percent of Alaska's population age 12 and older are dependent on or abuse alcohol and 2.96 percent are dependent on or abuse illicit drugs as of 2009. Alaska's share of the national dependent or abusing population was 0.6 percent in 2010. The NIDA/NIAAA study provides estimates on both days of care for the national population and hospital costs per day. Days of care were adjusted for population growth from 1992 to 2010 and for Alaska's share of the total national population that are dependent on or abusing alcohol and drugs, as reported by the NSDUH study. This provided the estimate of total days of care in Alaska for 2010.

The ASHNHA study reported estimates on the average cost of inpatient care in Alaska in 2009. This estimate was adjusted for inflation to 2010 dollars. After adjustments, the estimated average cost per day for hospital care in 2010 was $2,545. In the absence of more updated estimates on the average cost for physician care, 1992 figures reported in the NIDA/NIAAA study were adjusted for inflation and Alaska cost-of-living. The daily cost for physician care averaged $545.

Total non-federal hospital costs in Alaska for 2010 were calculated by applying total days of care to average cost per day. Costs were divided into three categories for alcohol: alcohol-specific illness, alcohol-related illness, and additional costs from comorbid alcohol disorders. Drug-specific categories include drug-specific illness, drug-related illness, and additional days from comorbid drug disorders.

Data on days of care for federal or veteran hospitals was not available. In order to calculate these costs, the same method was used as in the 1998 NIDA/NIAAA study, which found that veterans' and federal hospital revenues accounted for 9.5 percent of total U.S. hospital revenues. The proportion was then applied to non-federal hospital costs for substance abuse in order to estimate cost for federal facilities. Similarly, ASHNHA found military and veteran hospitals accounted for 4 percent of hospital visits in 2009. This percentage was applied to Alaska non-federal hospital costs.

Results

In 2010, the approximate total number of hospital days of care was 45,500, resulting in $146.5 million in hospital costs for alcohol and drug-related injuries and illness. Alcohol abuse accounted for 91 percent (or 41,500 days) of substance abuse-related days of care, while the remaining 4,000 days of care were drug-related. Among alcohol abusers, 31,400 days were for alcohol-related illnesses, 6,900 were from comorbid alcohol disorders, and 3,200 were from alcohol-specific disorders. Days of care for drug abuse-specific disorders were just under ten and the remaining large majority were additional days from drug disorders. Drug abuse related illness days of care are not included here as those are accounted for in the specific sections on HIV/AIDS and hepatitis.

Non-federal hospital costs for alcohol and drug-related injuries and illness totaled $140.6 million, while veteran or federal hospital costs were an estimated $5.9 million. Costs attributed to alcohol and drug-related injuries and illness were $133.5 million and $13 million, respectively. Table 19 provides total days of care and hospital costs for injuries and illness related to substance abuse in Alaska in 2010.

(see table next page)

TABLE 19. Hospital Costs for Injuries and Illness Related to Substance Abuse in Alaska, 2010

	Total Care Days	Non-Federal Hospital Costs	Veteran and Federal Hospital Costs	Total Hospital Costs
Alcohol-specific illness	3,200	$9,957,200	$414,900	$10,372,100
Alcohol-related illness	31,400	97,015,800	4,042,300	101,058,100
Additional days from co-occurring alcohol disorders[1]	6,900	21,204,700	883,500	22,088,200
Subtotal, alcohol abuse	**41,500**	**$128,177,700**	**$5,340,700**	**$133,518,500**
Drug abuse-specific illness	9	24,300	1,000	25,400
Drug abuse-related illness	*	*	*	*
Additional days from drug disorders[1]	4,000	12,440,400	518,400	12,958,800
Subtotal, other drug abuse	**4,000**	**$12,464,800**	**$519,400**	**$12,984,100**
Total alcohol and other drug abuse	**45,500**	**$140.6 million**	**$5.9 million**	**$146.5 million**

[1]Additional days of care resulting from alcohol abuse disorders exclude days for alcohol-related illnesses to avoid double counting. In calculating additional days for drug abuse, the proportion of discharges for which additional days are calculated are assumed to be the same as for alcohol. Totals also include days of care for combined alcohol and drug abuse disorders but do not include effects on newborns, which are examined in another section.
Source: McDowell Group, based on alcohol and drug dependent population estimates from the 2008-2009 National Survey on Drug Use and Health, from the Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; and U.S. hospital care days and costs per day related to alcohol and other drug abuse from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998).
**These costs include HIV, and Hepatitis B and C, which are presented later in the chapter.*

Although the state does not maintain records on days of care that are alcohol or drug-related, the DHSS Alaska Trauma Registry tracks incidences where alcohol and illegal drugs were suspected or proven at the time of the incidence. Of 23,842 incidences from 2006 to 2010, both fatal and non-fatal, one-quarter, or 5,994, were suspected or proven to have involved alcohol and 12 percent, or 2,902 were suspected or proven to have involved drugs.

Residential and Outpatient Alcohol and Other Drug Treatment Costs

In 2010, there were 6,742 substance abuse treatment admissions in Alaska, according to the Department of Health and Social Services, Division of Behavioral Health (DBH). Total treatment admissions are for the 15 grantee agencies of DBH. It should be noted that bed days and budget expenditures are only for those facilities and programs working with DBH and Medicaid. Therefore, these figures may not represent the entire population receiving treatment in Alaska.

Alcohol and drug dependence and abuse generate a variety of costs for resident and outpatient treatment. DBH provides support to organizations and agencies throughout the state in the form of grant funds for alcohol and drug treatment facilities. Treatment services include rehabilitation, counseling, case management, and other types of treatment services for individuals and families. Additionally, Medicaid covers treatment in facilities both in-state and out-of-state for qualifying Alaskans. Still, it is important to keep in mind that treatment is also paid through private means.

Funding appropriated for alcohol and drug abuse treatment through DBH in 2010 totaled $29.9 million. Medicaid payments for substance abuse rehabilitation in 2010 totaled $5.4 million. These expenditures are for substance abuse-specific treatment and do not include expenditures for comorbid conditions that may have been billed by mental health or other providers. These figures were reported directly from DBH. Though not included in this cost analysis, it should also be noted that DBH also spent an additional $11.1 million in 2010 on substance abuse prevention.

The National Survey of Substance Abuse Treatment Services (N-SSATS) also maintains state data on the number of treatment facilities and clients in substance abuse treatment at a given time. As of March 2010, Alaska had 77 treatment facilities housing 3,218 clients. Nearly half of the clients (48.4 percent) were receiving treatment for co-occurring alcohol and drug abuse disorders, one-third (34.6 percent) for alcohol abuse only, and one out of five (17 percent) for drug abuse only. Of the 77 facilities, 36 are specifically for substance abuse treatment, one is for mental health, 39 are for both mental health and substance abuse treatment, and one is for general health care. Nearly two-thirds, or 60 percent, of facilities are private non-profit, 17 percent are tribal facilities, 9 percent are private for-profit, 8 percent are federal facilities, and the remaining 7 percent are local facilities.

Medical Outpatient Costs

Often times those abusing alcohol or drugs receive medical outpatient treatment for specific disorders or illnesses that do not necessarily require constant hospitalization. Examples of specific disorders can include alcohol gastritis or cirrhosis, while related illnesses can be chronic pancreatitis or cancer of the esophagus.

Methodology

As Alaska-specific data on costs of alcohol and drug-related medical outpatient costs was not available, the 1998 NIDA/NIAAA study was used to estimate 2010 figures. Similar to the methodology used in estimating hospital costs, 1992 national estimates on days of care were adjusted for population growth to 2010. Alaska's share of the alcohol abusing or dependent population was then applied to find Alaska's estimated days of outpatient care.

NIDA/NIAAA outpatient care costs were adjusted for inflation to 2010 dollars and for Alaska's health care cost-of-living index, 36.1 percent above the national average. The 1998 study did not include any medical outpatient visits for drug abuse-specific disorders due to lack of data and causal relationships needed to estimate the medical outpatient visits. Other drug-related illness costs will be discussed later in this chapter.

After adjusting for inflation and Alaska's cost-of-living, the estimated average cost for an alcohol and drug abuse-related medical outpatient visit was $479.

Results

Alcohol abuse-related medical outpatient treatment in Alaska cost an estimated $38.3 million in 2010. More than three-quarters, or $33.3 million, was for 72,100 alcohol-related illness visits. Alcohol-specific disorders accounted for 10,900 visits and $5.0 million in total costs. Table 20 shows a breakdown of medical outpatient visits and costs.

TABLE 20. Medical Outpatient Visits and Costs Related to Alcohol Abuse in Alaska, 2010

	Outpatient Visits	Outpatient Costs
Alcohol-specific	10,900	$5,037,200
Alcohol-related	72,100	33,284,200
Total, Alcohol Abuse	**83,000**	**$38.3 million**

Source: McDowell Group, based on alcohol and other drug-dependent population estimates from *National Survey on Drug Abuse and Health, 2008-2009,* Substance Abuse and Mental Health Services Administration, U.S. Department of Health and Human Services; and U.S. medical outpatient and costs related to alcohol abuse from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998).

Prescription Drugs

Prescription drug costs are another significant facet of health care costs resulting from alcohol and drug abuse. However, quantifying these costs to Alaska's economy is difficult. Costs come in two categories: legitimate use of prescription drugs and misuse or abuse of prescription drugs.

Legitimate Use

Prescription drug costs result from medications used to treat addiction or abuse and medications to treat chronic illnesses stemming from alcohol or drug abuse. Previously this figure was calculated by taking the national estimate as published in the 1998 NIDA/NIAAA report and adjusting for Alaska's share of the population as well as for Alaska's cost of living. However, new Alaska-specific information is available.

SAHMSA's website notes several drugs associated with the treatment of alcohol and opioid dependence: naltrexone, disulfiram, acamprosate calcium, methodone, and buprenorphine. These medications are used to improve survival, increase retention in treatment, decrease drug use, and decrease hazardous effects of substance abuse such as low employment and criminal activities.

The Alaska Department of Health and Social Services was able to provide a count of each drug prescribed in Fiscal Year 2010 in Alaska. Unit prices for Alaska were not available, though, Oregon, Alabama, and Idaho have prices publicly listed. Price listings are for Medicare and Medicaid claims which are likely somewhat lower than private costs, resulting in conservative cost estimates for this section. These prices were adjusted to Alaska's cost of living and to 2010 dollars and applied to total prescriptions for each drug in Alaska.

Past estimates of prescription drug costs for the treatment of chronic illnesses attributed to alcohol or drug abuse were based on national figures that assumed 2.2 percent of total drug costs were alcohol or drug-related. It is not possible to separate costs for dependence treatment from costs for chronic illnesses. As a result, pharmaceutical costs for alcohol-related illnesses such as liver disease – a major cost – are not accounted for. Medical costs for drug-related illnesses such as HIV/AIDS and Hepatitis B and C are examined in later sections.

Total prescriptions costs in 2010 for medications attributed to the treatment of alcohol and drug abuse in Alaska were $1.1 million. Table 21 shows a breakdown of costs by drug.

TABLE 21. Prescription Drug Costs to Treat Alcohol and Drug Dependence in Alaska, 2010

	Total Claims	Total Cost
Buprenorphine	3,042	$934,400
Naltrexone	113	106,400
Acamprosate calcium	56	8,600
Disulfiram	60	5,300
Total	**3,271**	**$1.1 million**

Source: AAC rates Oregon, http://www.oregon.gov/OHA/pharmacy/reimburse-method/index.shtml; AAC rates Alabama, http://al.mslc.com/AACList.aspx; AAC rates Idaho, http://id.mslc.com/uploadedFiles/ID_AAAC_Generic_Update_20120529.pdf. Total prescription claims and quantity from DHSS.

Misuse or Abuse

Costs result from the illegal procurement and abuse of pharmaceuticals without a prescription from a medical doctor. Costs can include those to law enforcement, legal and adjudication fees, incarceration costs, treatment costs, loss of productivity and many others examined elsewhere in this report.

In 2011, the Alaska State Troopers reportedly seized 1,051 units of Hydrocodone, 1,837 units of Oxycontin/Oxycodone, and 2,548 units of other prescription drugs. Prescription pills can be sold illegally in Alaska for anywhere from one to two dollars per milligram. In the Troopers' *2011 Annual Report*, it was noted that with increasing demand of these drugs and a lessening supply, many addicts are turning to property and violent crimes to pay for their addiction.

The *2011 Youth Risk Behavior Survey* found that 6.9 percent of youths in traditional high schools had taken pharmaceuticals without a doctor's prescription in the last 30 days, while 21.6 percent of those in alternative high schools reportedly did so.

Nursing Home/Long-Term Care Costs

Alcohol and drug abuse may result in the need for nursing home or long-term care to provide medical or emotional support. Long-term care and nursing home cost estimates are for residents with a primary alcohol abuse-specific diagnosis.

Methodology

Nursing home and long-term care costs for alcohol-related illnesses were calculated using data from DHSS and the 1998 NIDA/NIAAA study. DHSS maintains data on the number of long-term care days for each care facility in Alaska, as well as the daily rate information for each facility. There were an estimated 223,936 total nursing home and long-term treatment care bed days in Alaska in 2010, with cost per day of care averaging $419 per day, with a range of $354 to $840 per day. The cost of Alaska nursing home care for all illnesses and injuries during 2010 was approximately $107.8 million. The NIDA/NIAAA report estimated that about 1 percent of the nation's nursing home care costs can be attributed to alcohol abuse-specific illnesses. This

estimate was applied to total nursing home and long-term care costs to find the total cost attributed to alcohol abuse in Alaska in 2010.

Results

Alcohol abuse-related nursing home care days totaled 2,239 in Alaska during 2010. Total nursing home and long-term care costs related to alcohol abuse in 2010 were approximately $1.1 million.

Fetal Alcohol Spectrum Disorders

Exposure to alcohol during pregnancy can cause a variety of birth defects, known as fetal alcohol spectrum disorders (FASD). FASD is an umbrella term that includes all alcohol-related birth defects including FAS. Although most are familiar with FAS, or fetal alcohol syndrome, less commonly known are the multiplicity of other disorders that can stem from prenatal alcohol exposure, including:

- partial FAS (PFAS),
- fetal alcohol effects (FAE),
- alcohol-related neurodevelopmental disorder (ARND),
- and other alcohol-related birth defects (ARBD).

Often children with fetal alcohol disorders are not identified until they reach school age or later as symptoms do not become apparent until later childhood developmental stages. FASD symptoms can include difficulties with attention, memory and problem solving. Additionally, heart, liver, and kidney disease as well as vision and hearing problems are common among children with FASD.[2]

FASD causes the most common childhood developmental disorders and they are 100 percent preventable. The Center for Disease Control and Prevention (CDC) conducted several studies on FAS and have found that the prevalence of FAS across the nation varies from 0.2 to 1.5 cases per 1,000 live births. Other studies have found that prevalence rates are somewhat higher, 0.5 to 2.0 per 1,000 live births.[3] Studies have also found that rates are even higher among high risk populations such as American Indians/Alaska Natives, other minorities and families living in poverty, where rates can be as high as 0.5 to 5.0 per 1,000 live births.

The CDC estimates there are between 1,000 and 6,000 infants born each year in the United States with Fetal Alcohol Syndrome. From 1995 to 2000, Alaska was one of five states involved in the CDC's Fetal Alcohol Syndrome Surveillance Network (FASSNET), a program set up to track FAS prevalence rates. Participating states included Alaska, Arizona, Colorado, New York, and Wisconsin. In the 1997 study, Alaska reported 1.5 per 1,000 live births, significantly higher than the other states in the program, with Arizona and New York at 0.3 and 0.4 per 1,000 live births, respectively.[4]

[2] National Organization on Fetal Alcohol Syndrome, *What is FAS/FASD?*, www.nofas.org/faqs.aspx?id=9
[3] Center for Disease Control and Prevention
[4] CDC, *Fetal Alcohol Syndrome – Alaska, Arizona, Colorado, and New York, 1995-1997*, http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5120a2.htm.

In 2010, the Alaska Department of Health and Social Services reported that Alaska has an average of 180 live births reported to the Alaska Birth Defects Registry each year with suspected FASD.[5] DHSS tracked FAS (and FASD) prevalence rates from 1996 to 2006. Most recent rates according to the 2001 to 2003 birth cohort indicate Alaska has 13.8 cases of prenatal alcohol exposure per 1,000 live births, while the 2000 to 2002 birth cohort estimate 1.35 cases of FAS per 1,000 live births. Based on most recent DHSS prevalence estimates and 2010 birth data, approximately 158 were born with a possible FASD in 2010 and 15 with FAS.

FAS vs. FASD

It should be noted that this study measures the economic costs of FAS only and does not include costs associated with other disorders resulting from prenatal alcohol exposure. According to SAMHSA's information on FAS, in order to be diagnosed with Fetal Alcohol Syndrome, the individual has to meet specific criteria including facial anomalies, growth deficiencies, central nervous system defects, and maternal alcohol use during pregnancy. Specific diagnostic criteria for FAS allows for more manageable reporting of data collected about the prevalence of the disorder as compared to FASD which encompasses a wider variety of symptoms and disorders.

As reported in McDowell Group's *Economic Costs of Alcohol and Drug Abuse in Alaska, 2005 Update*, Alaska maintains a broad range of fetal alcohol spectrum disorder diagnostic teams throughout the state. As of June 2011, the diagnostic team network had conducted 1659 FASD assessments. Of these, 8.69 percent were diagnosed with FAS or atypical FAS, 51.7 percent with Static Encephalopathy, 32.7 percent with Neurobehavioral Disorder, and 6.5 percent were found to have no evidence of organic brain damage. Findings indicate that fetal alcohol spectrum disorders affect a much larger number of infants in Alaska than can be assumed by simply applying known prevalence rates. Economic costs for FAS presented in this report significantly underrepresent actual costs of health care for those born with alcohol-related birth disorders.

Economic Costs of Alcohol and Drug Abuse

Fetal alcohol spectrum disorders affect those diagnosed throughout their lifetime and the costs of caring for these individuals can be significant. Costs can range from neonatal care for low birth weight to special speech therapy, behavioral management, or residential care for youth and adults with FAS.

There have been few estimates on the annual cost of treating individuals with FAS. A more recent study by the authors responsible for the 1998 NIDA/NIAAA study[6] provided an update to previously reported annual costs of treating FAS. Direct costs include medical costs, social services, and judicial costs. Indirect costs are those as a result of lost productivity due to inability to work through death or impairment. Productivity losses as a result of FAS have not yet been accounted for in this report.

[5] DHSS, *Fact Sheet: Fetal Alcohol Spectrum Disorders*, http://www.hss.state.ak.us/press/2010/FAS_fs_021810.pdf.
[6] Lupton, Chuck, Larry Burd, and Rick Harwood. *Cost of Fetal Alcohol Spectrum Disorders.* American Journal of Medical Genetics Part C. 127C: 42-50 (2004). ftp://senfiles.healthystartfv.org/Sort%20Literature%20Review.Data/30015_ftp-2928697097/30015_ftp.pdf.

Methodology

To calculate the economic costs from FAS, known live births were applied to estimated annual costs of treatment. The Alaska Department of Health and Social Services Fetal Alcohol Surveillance Project maintains data in conjunction with the Alaska Birth Defect Registry.

The FAS Surveillance Project further works with diagnostic teams across the state to track the prevalence of multiple fetal alcohol spectrum disorders. The diagnostic process utilized by Alaska's diagnostic teams was developed by researchers at the University of Washington Fetal Alcohol Syndrome Diagnostic and Prevention Network. The Alaska FAS network considers its surveillance project to be highly vigorous, though keeping in mind the wide variety of symptoms and disorders that can occur as a result of prenatal alcohol exposure, it is possible that cases are under reported.

In McDowell Group's previous report, lifetime cost estimates were based on data published in the Health Professions Education Partnership Act of 1998 (Senate Bill 1754). Annual costs were not estimated. However, more recent data makes it possible to estimate annual costs. Annual economic costs of FAS in 2002, as published by Lupton, et al., were divided by approximate FAS births with a prevalence rate of 2 FAS live births per 1,000, to find an estimate on cost per patient.

Unit costs were adjusted for inflation to 2010 dollars and for Alaska's cost-of-living and applied to estimated FAS births in Alaska.

Results

In 2010, the Alaska Bureau of Vital Statistics reported a total of 11,470 births. With an FAS prevalence rate of 1.35 per 1,000 live births, there were a total of 15 FAS births in Alaska in 2010. Annual costs of treating 15 individuals with FAS amount to $286,500. It is important to note that these costs are only those for new births in 2010 and do not include figures for total FAS cases in Alaska, including those born prior to 2010. Table 22 shows total FAS births and annual costs in 2010.

TABLE 22. Annual Direct and Indirect Costs for Children Born with FAS in 2010

	Incidence and Costs
Alaska births in 2010	11,470
FAS incidence per 1,000 live births	1.35
FAS births	15
Cost per patient	$19,000
Annual FAS cost	**$286,500**

Source: Birth data from the Alaska Bureau of Vital Statistics. FAS prevalence rates from DHSS. Cost per patient from Lupton, et al. *Cost of Fetal Alcohol Spectrum Disorders*.

AIDS and HIV Costs

Although acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) are most often thought of as sexually transmitted diseases (STDs), a significant portion of cases can actually be attributed to intravenous drug use through the sharing of unhygienic needles. Due to advances in health care for HIV and AIDS, extensive inpatient medical care is not as often required. However, medical expenses are still costly and should be included in drug-related health care costs.

Methodology

The Alaska Department of Health and Social Services Epidemiology Section compiles and reports data on a number of infectious disease cases reported in the state. The Epidemiology Section counts all known cases and first diagnoses of HIV, AIDS, and those with both HIV and AIDS, however it should be noted that figures may be conservative, as some Alaskans could have been diagnosed and treated out of state. The HSS Epidemiology Section also maintains records of cases by method of exposure. Between 1982 and 2011, 13 percent of known HIV cases in Alaska were a result of intravenous drug use.[7] Another note, the Section does not track individual whereabouts, therefore if infected individuals have moved away from the state that will not be reflected in the data. The Epidemiology Section tracks data on deaths of known AIDS patients, however cause of death is not included in the data. In this study, for all known deaths among individuals with AIDS it is assumed that 100 percent are attributable to the disease.

The 1998 NIDA/NIAAA study provided an estimate of annual medical expenses for HIV and AIDS patients. As no comparable update has been made to this estimate, this figure was utilized for the purpose of this report and adjusted for inflation and for Alaska's cost-of-living differential. Medical costs for HIV patients in 2010 were $33,000 per year, while costs for AIDS patients were $92,200 per year.

The Alaska Epidemiology Section reported a total of 906 known cases of individuals with HIV or AIDS living in the state in 2010. Of those, 439 had HIV while 467 had HIV with AIDS. Thirteen percent of these cases were contracted through intravenous drug use.

Although accurate estimates are not available for cases attributed to alcohol, alcohol abuse does pose a risk in contracting HIV or AIDS through unprotected sex.

Results

In 2010, there were 118 cases of HIV or AIDS attributable to intravenous drug use. Of those, 61 cases were HIV with AIDS cases, which cost an estimated $5.6 million per year. There were 57 known cases of HIV without AIDS, resulting in a total of $1.9 million in medical expenses. HIV and AIDS medical expenses in Alaska total $7.5 million in 2010.

(see table next page)

[7] State of Alaska Epidemiology Section, Summary of HIV Infection – Alaska, 1982-2011, http://www.epi.alaska.gov/bulletins/docs/b2012_07.pdf.

TABLE 23. Annual Medical Expenses per AIDS and HIV Case Due to Drug Abuse in Alaska, 2010

	Annual Medical Expenses per Patient	Number of AIDS and HIV Patients	Total Costs due to Drug Abuse
HIV Positive	$33,000	57	$1,885,500
AIDS	92,200	61	$5,600,000
Total	**n/a**	**118**	**$7.5 million**

Source: McDowell Group, based on AIDS and HIV case numbers from DHSS, Division of Public Health; and annual medical expense data from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998).

Hepatitis B and C Costs

Similar to HIV and AIDS, intravenous drug use can result in the contraction of hepatitis B and C through the sharing of unhygienic needles. Hepatitis B and C have the potential to cause cirrhosis and primary hepatic cancer.

Methodology

To estimate the economic costs of hepatitis B and C, the 1998 NIDA/NIAAA study was used to provide an approximate annual cost of care. While DHSS Epidemiology Section tracks means of exposure for HIV and AIDS cases, they do not compile this data for hepatitis cases. The rate of hepatitis B and C cases attributable to intravenous drug use were taken from the Centers for Disease Control and Prevention's most recent estimates.

The Alaska Department of Health and Social Services Epidemiology Section tracks data on infectious disease cases in Alaska including hepatitis B and C. The section reported a total of 5 hepatitis B cases in 2010 and 726 cases of hepatitis C. The CDC estimated that the rate of hepatitis B and C cases that can be attributed to intravenous drug use are 17 percent and 60 percent, respectively. Hepatitis B infection is accompanied by acute illness, therefore reported cases to the Epidemiology Section should be an accurate representation of total cases in Alaska as patients are highly likely to seek medical care. However, hepatitis C does not necessarily cause acute symptoms in the short term, though long-term costs are significant. Data on the disease stage and how many patients were cured is limited; this report represents only known cases as reported to the Epidemiology Section.

Medical expenses published in the 1998 NIDA/NIAAA report were used to estimate current costs in Alaska by adjusting for inflation to 2010 dollars and for Alaska's health care cost-of-living differential. In 2010, the estimated medical expenses for hepatitis B and hepatitis C patients were $3,800 and $16,800 per patient, respectively. These costs were applied to the total number of cases that can be attributed to drug use to measure total economic costs for 2010. Notably, most hepatitis B and C cases require only monitoring of the disease, which is relatively inexpensive. Hepatitis B cases generally require intensive treatment but only limited long-term care, while hepatitis C cases may require low levels of treatment over an extended time, followed by more intensive treatment in later stages of the disease.

Results

Of the five cases of hepatitis B and the 726 cases of hepatitis C reported in 2010, those that can be attributed to intravenous drug use included one case of hepatitis B and 436 cases of hepatitis C. The single case of hepatitis B cost $3,800 in medical expenses, while 436 cases of hepatitis C cost a total of $7.3 million. Total costs of hepatitis B and C cases as a result of intravenous drug use in 2010 were roughly $7.3 million. Table 24 shows a breakdown of costs by cases due to drug abuse.

TABLE 24. Annual Medical Expenses per Hepatitis B and C Case Due to Drug Abuse in Alaska, 2010

	Annual Medical Expenses per Patient	Number of Patients	Total Costs due to Drug Abuse
Hepatitis B	$3,800	1	$3,800
Hepatitis C	16,700	436	7,296,200
Total	**n/a**	**437**	**$7.3 million**

Source: McDowell Group, based on hepatitis B and C case numbers from DHSS, Epidemiology Section; and annual medical expense data from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998).

Chapter 5: Public Assistance and Social Services

As discussed earlier in this report, alcohol and drug abuse can lead to reduced efficiency or mental and physical impairment, which prevents individuals from holding a job and contributing to the income of their household. This places them in the position of need, which may lead them to qualify for public assistance in the form of cash, food stamps, child care assistance, or other social services provided by the state and federal government. This chapter briefly examines the costs of public assistance and social services that can be attributed to alcohol and drug abuse.

Methodology

To estimate the costs of public assistance and social services attributed to alcohol and drug abuse, state and federal expenditures were examined by total expenditures in the state for each program, including both administrative costs and beneficiary payouts. It should be noted that simply looking at payouts of public assistance programs does not fully represent the total cost to society of implementing and administering the programs.

There are two primary sources of public assistance expenditures at the federal level: Supplemental Security Income (SSI) and Old Age, Survivors, and Disability Insurance (OASDI). According to a U.S. Census report of consolidated federal funding by program, Alaska received federal funds for administration of Supplemental Security, Survivors Insurance, and Disability Insurance payments. The 1998 NIDA/NIAAA study estimated that 1.7 percent of total costs for SSI and OASDI recipients can be attributed to cases related to alcohol and drug abuse. This estimate was applied to total federal reported expenditures for Alaska.

At the state level, public assistance programs include the Alaska Temporary Assistance Program (ATAP), food stamps, energy assistance, child care assistance, as well as other programs. The Alaska Department of Health and Social Services was able to provide total expenditures by program. The NIDA/NIAAA report estimated 4.1 percent of state assistance program costs could be attributed to alcohol and drug abuse. This rate was applied to DHSS reported expenditures to find total state spending attributed to alcohol and drug abuse.

Results

Administration costs from alcohol and other drug abuse-related public assistance, including both state and federal expenditures, totaled $13.2 million. In 2010, Alaska's share of SSI and OASDI federal expenditures was $429 million. Of that, $7.3 million can be attributed to drug and alcohol abuse. The State of Alaska budgeted $144 million on public assistance programs, $5.9 million of which can be attributed to state residents abusing drugs and alcohol.

Chapter 6: Co-Occurring Disorders

While alcohol and drug abuse has been recognized both in Alaska and nationwide as a serious threat to our society, less often mentioned is the significant number of those abusing with co-occurrence of serious mental illness (SMI). Research has shown that individuals with SMI have higher rates of alcohol and/or drug dependence or abuse than the population as a whole. Further, those that experience co-occurrence of SMI and alcohol or drug abuse are more likely to only receive treatment for their mental illness, rather than for substance dependence.

Over the last several years, the State of Alaska has been working to integrate substance abuse treatment and mental health services in the state in order to provide coordinated treatment needs. Both mental health services and alcohol and drug abuse services now fall under the Alaska Department of Health and Social Services' Division of Behavioral Health. As an example of progress aimed at improving treatment and support for individuals experiencing co-occurring disorders in Alaska, in December 2011, the Department of Health and Social Services implemented a new set of regulations governing integrated behavioral health services.

On the national level, SAMHSA's Office of Applied Studies includes both substance abuse and mental illness in their annual National Survey on Drug Use and Health (NSDUH). The survey provides an accurate estimate of the rate of co-occurrence of mental illness and substance abuse on the national level. Additionally, in 2004 SAMHSA published a report *Serious Mental Illness and its Co-Occurrence with Substance Use Disorders, 2002* which provides data on co-occurrence of mental illness and substance dependence or abuse, as well as the rates of treatment for individuals with these conditions.

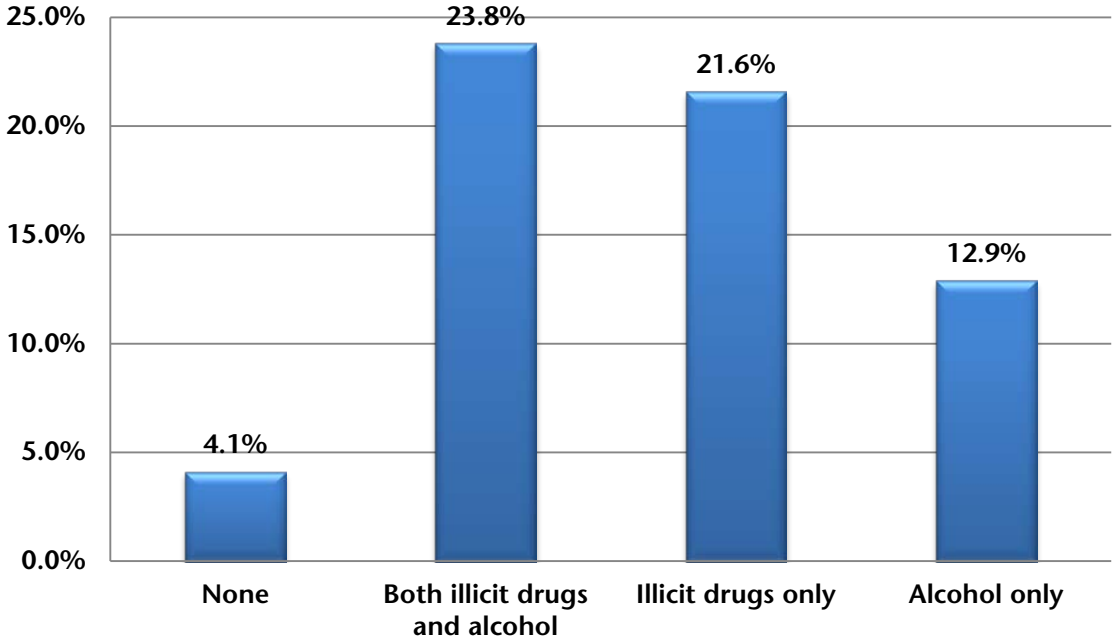
This chapter examines the co-occurrence of serious mental illness and substance abuse on the national and state level and reviews state data and initiatives in addressing the issue.

Co-Occurrence of Serious Mental Illness and Substance Dependence or Abuse

Although the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) has not provided an update to its 2004 report on co-occurrence, the annual NSDUH includes the prevalence of co-occurrence as well as treatment received by those with co-occurring disorders. In 2010, 4 percent of the US population age 18 and older experienced the co-occurrence of a substance use disorder and a mental health disorder and 1.2 percent of the population experienced a substance use disorder combined with serious mental illness (SMI).

Among adults with SMI age 18 and older in 2010, 23.8 percent were dependent on or abusing both alcohol and illicit drugs, 21.6 percent were experiencing illicit drug dependence or abuse only, and 12.9 percent experience alcohol dependence or abuse only. Just 4.1 percent of those with serious mental illness did not have a substance use disorder.

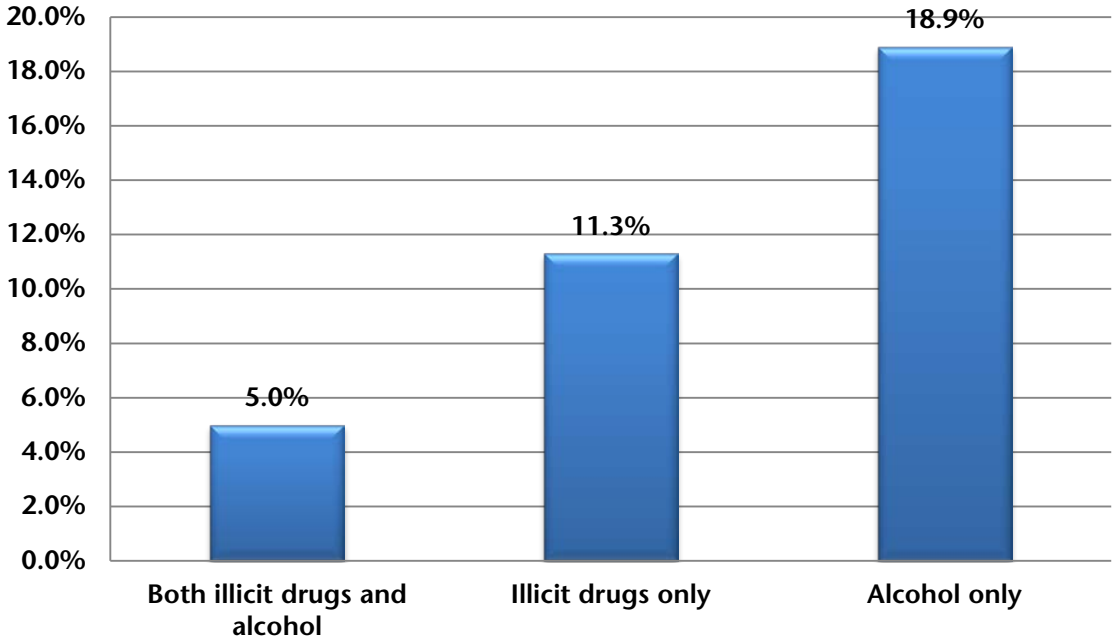
FIGURE 5. Serious Mental Illness among Adults Age 18 or Older, by Substance Dependence or Abuse, 2010



Source: SAMHSA, Office of Applied Studies, *National Survey on Drug Use and Health, 2010*.

Conversely, of those dependent or abusing both illicit drugs and alcohol, 5 percent have been diagnosed with serious mental illness. Of those with illicit drug dependence or abuse alone, 11.3 percent have SMI. Finally, of those with alcohol dependence or abuse alone, 18.9 percent have SMI.

FIGURE 6. Those with Serious Mental Illness, Dependent or Abusing Population, 2010



Source: SAMHSA, Office of Applied Studies, *National Survey on Drug Use and Health, 2010*.

According to the National Alliance on Mental Illness (NAMI), the consequences of co-occurring disorders can be great. Those afflicted are far more prone to violence, medication noncompliance, and failure to respond to treatment. Further, for the individual with a co-occurring disorder, not only do they suffer from overall poorer functioning, but they also have a significantly greater chance of relapse to substance use. NAMI reported that those with co-occurring disorders are much more likely to live in high-risk locations such as marginal neighborhoods with high substance usage and have a more difficult time forming social relationships and becoming involved in their society. Further, those with co-occurring disorders are much more likely to be homeless or jailed. NAMI estimates that 50 percent of homeless persons with SMI have a co-occurring substance abuse disorder and 16 percent of incarcerated individuals have severe mental and substance abuse disorders. Further, 72 percent of detainees with mental disorders have a co-occurring substance abuse disorder.[8]

Treatment and Co-Occurrence

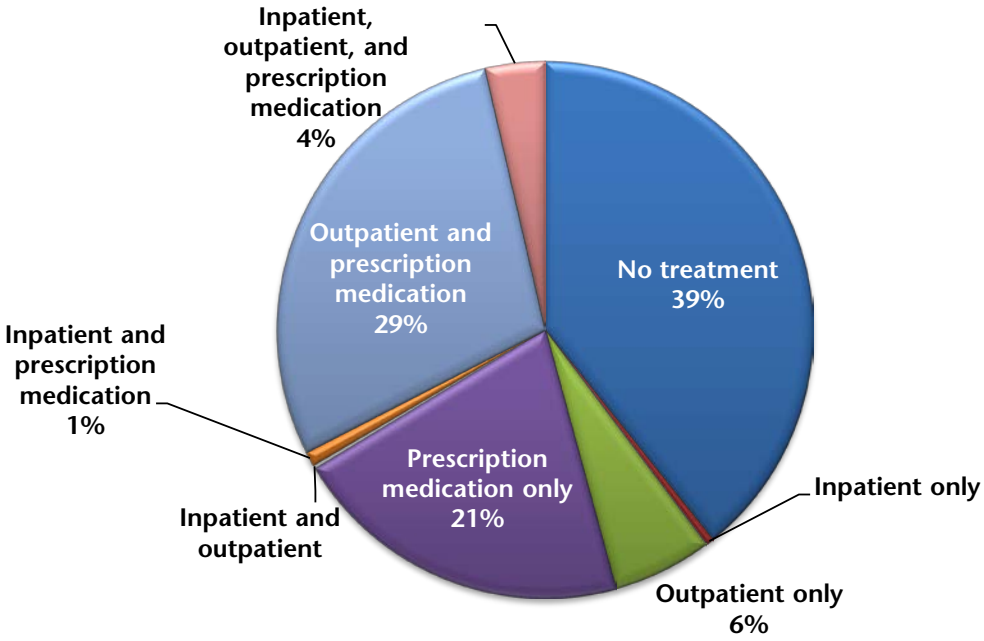
As part of the NSDUH, SAMHSA has also continued to track treatment statistics among those with co-occurring disorders. Although state-level data on co-occurrence is not available, national data provides a look at treatment received by those suffering from co-occurring mental illness and substance use disorders.

Among those with SMI, 39.2 percent were not receiving any treatment, while one out of five were only receiving treatment through prescription medication. Just over one-quarter were receiving a combination of outpatient treatment and prescription medication and 6 percent were receiving outpatient treatment alone. Only five percent of those with serious mental illness were receiving inpatient treatment. Figure 7 shows a breakdown of treatment received by those with SMI in 2010.

(see figure next page)

[8] National Alliance on Mental Illness, *Dual Diagnosis and Integrated Treatment of Mental Illness and Substance Abuse Disorder*, http://www.nami.org/Template.cfm?Section=By_Illness&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=54&ContentID=23049.

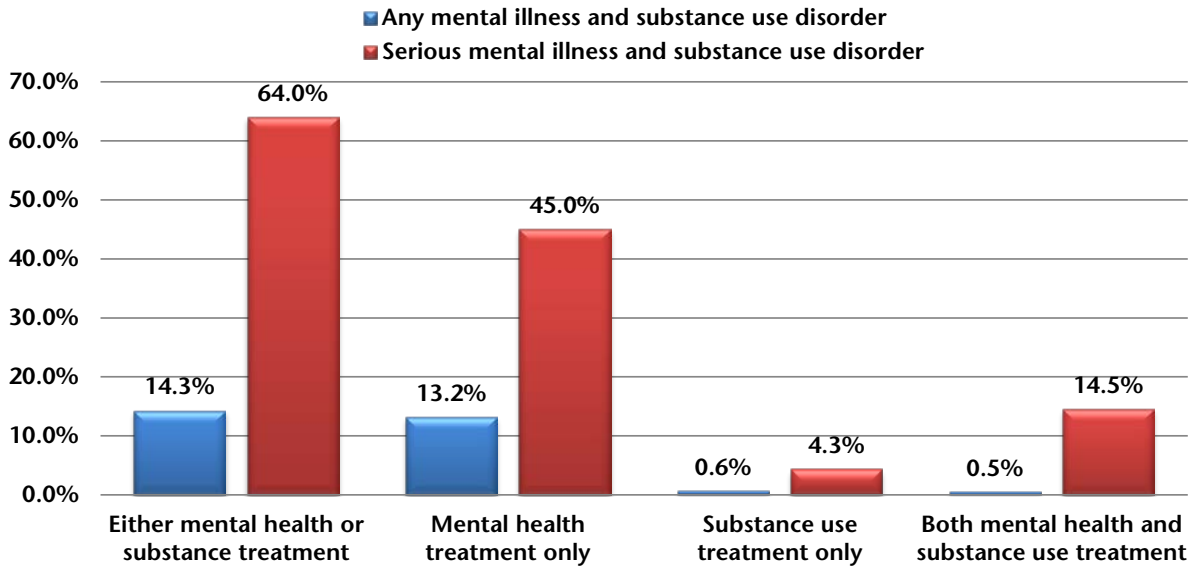
FIGURE 7. Types of Mental Health Treatment Among Those with Serious Mental Illness, 2010



Source: SAMHSA, Office of Applied Studies, *National Survey on Drug Use and Health, 2010*.

Of those that reported co-occurrence of serious mental illness and a substance abuse disorder, two-thirds are receiving either mental health or substance abuse treatment, and of those reporting any form of mental illness and co-occurring substance abuse, just 14.3 percent are receiving any form of treatment. Under half of those with co-occurring SMI and substance dependence or abuse are receiving mental health treatment alone and 14.5 percent are receiving a combination of substance and mental health treatment. Less than one percent of those with substance use and any mental health disorders are receiving treatment for both. Figure 8 shows a breakdown of received treatment in 2010.

FIGURE 8. Received Mental Health and Substance Treatment among those with both Mental Health and Substance Use Disorders, 2010



Source: SAMHSA, Office of Applied Studies, *National Survey on Drug Use and Health, 2010*.

Alaska Initiatives to Address Co-Occurring Disorders

As part of SAMHSA's comprehensive surveying on substance abuse and mental health, the organization conducts the *National Survey of Substance Abuse Treatment Services* (N-SSATS) and maintains data for every state. In 2010, Alaska had 39 facilities that offered a mix of mental health and substance abuse treatment services. Of these, 27 facilities were specifically for co-occurring disorders.

Substance Abuse/Mental Health Integration Project

In July 2000, the Alaska Department of Health and Social Services partnered with the Alaskan Mental Health Board and the Advisory Board on Alcoholism and Drug Abuse to identify problems and barriers in caring for individuals with co-occurring mental health and substance use disorders. The goals of the project were to improve treatment outcomes, to improve accessibility of services and quality of care, and to improve efficiency in administration to minimize costs and facilitate greater use of funds for client services. As part of the program, the project team administered a survey of substance use disorder and mental health providers. Among mental health providers, they found up to three-quarters of their clients experienced co-occurring disorders, compared to 42 percent of substance abuse providers.[9] The DHSS' Division of Behavioral Health was a product of this project and the division continues to work towards integration and improvement of services.

Bring the Kids Home Initiative

Mental health and substance abuse disorders are not limited to adults. As noted in the *Economic Costs 2005 Update*, SAHMSA reported a link between substance abuse disorders and behavioral and mental/emotional disorders among youth. The *2001 National Household Survey on Drug* abuse found that 26 percent of those between the ages of 12 and 17 who had used illicit drugs in the past year had also received treatment or counseling for behavioral or mental health issues, compared to just 16 percent of those who had not used illicit drugs.

The Alaska Department of Health and Social Services, through the Division of Behavioral Health and the Mental Health Trust Authority, started the Bring the Kids Home initiative in 2004 in order to address the high number of youth seeking treatment out of state. Disadvantages of out-of-state treatment may include less therapeutic benefit for children and their families, longer lengths of stay, higher risk of readmission, and transitional difficulties.

The Bring the Kids Home initiative (BTKH) was established to support further development of in-state infrastructure and treatment opportunities for youth and children. Workgroups were established to identify means to support the growth of services and service providers in Alaska, to identify ways to support the development of a treatment professional workforce, and to review cases of children who are under consideration of treatment out-of-state in order to attempt to redirect them in-state.

[9] DHSS, *Final Report of the Steering Committee, Substance Abuse/Mental Health Integration Project*, http://www.hss.state.ak.us/abada/pdf/itfinal.pdf.

BTKH further established a set of indicators in order to track progress of the program. As indicated in the McDowell Group's *2005 Update*, the program had already shown progress towards its goals. Established indicators include:

- Client shift – a reduction in the total number of children/youth admitted to out-of-state residential psychiatric treatment centers (RPTC)
- Funding shift – a reduction in Medicaid/General Fund match dollars from out-of-state services to children/youth with a corresponding increase in Medicaid/General Fund match dollars for in-state services
- Length of stay – a reduction in the average length of stay for in-state and out-of-state residential institutions
- Service capacity – an increase in the number of instate residential beds for children/youth
- Recidivism – a reduction in the number of children/youth returning to RPTCs and acute hospitalization care
- Client satisfaction – number of children and families reporting satisfaction with services rendered
- Functional improvement – children and youth showing functional improvement in one or more life domain areas at discharge

Since its start in 2010, the program has reported progress under these indicators. From 2004 to 2010, out-of-state RPTC custody admissions are down by 84 percent. Overall, total admissions both in-state and out-of-state have declined, though since 2007, in-state admissions have started to rise. Overall, RPTC Medicaid expenditures have declined by 13 percent, along with a 22 percent decline for out-of-state RPTCs, and a 4 percent declined for in-state RPTCs. On the other hand, overall length of stay averages have increased for both in-state and out-of-state facilities. Service capacity rose 47 percent from 2004 to 2009.[10]

[10] DHSS, Behavioral Health: Policy & Planning, *Bring the Kids Home Initiative: Indicators for SFY10*, http://www.hss.state.ak.us/commissioner/btkh/pdf/BTKH-SFY10%20Datav4DRAFT.pdf.

Chapter 7: Cost of Underage Drinking in Alaska

The cost of underage drinking, though not included in total economic costs measured in this report, are worth examining as the incidence of underage drinking has become inherent in Alaska and the US as a whole.

The Pacific Institute for Research and Evaluation (PIRE), Underage Drinking Enforcement Training Center, maintains regularly updated, state-specific data on the costs associated with underage drinking. It should be noted that, as many of these costs have already been included in this report, the PIRE figures are not included in total economic costs of alcohol and drug abuse in Alaska. PIRE estimates that in 2010, total costs of underage drinking were $300 million. Underage drinking comes with costs in the form of health, social, and economic problems and, according to PIRE, is a causal factor in many serious problems including homicide, suicide, traumatic injury, drowning, burns, violent and property crime, high risk sex, fetal alcohol syndrome, alcohol poisoning, and the need for treatment for alcohol abuse and dependence.

The largest costs estimated by PIRE is pain and suffering, at an estimated worth of $190 million in 2010. Workplace costs were $79 million and medical costs were $52 million. Table 25 shows a breakdown of total costs of underage drinking by problem in 2010.

TABLE 25. Costs of Underage Drinking in Alaska, by Problem, 2010 ($)

	Total Costs (in millions)
Youth violence	$154.7
Youth traffic crashes	91.0
High-risk sex, Ages 14-20	11.0
Youth property crime	11.4
Youth injury	21.5
Poisonings and psychoses	1.7
FAS among mothers age 15-20	4.9
Youth alcohol treatment	25.2
Total	**$321.4**

Source: Pacific Institute for Research and Evaluation (PIRE), Underage Drinking Enforcement Training Center, *Underage Drinking in Alaska: The Facts*, http://www.udetc.org/factsheets/AK.pdf.

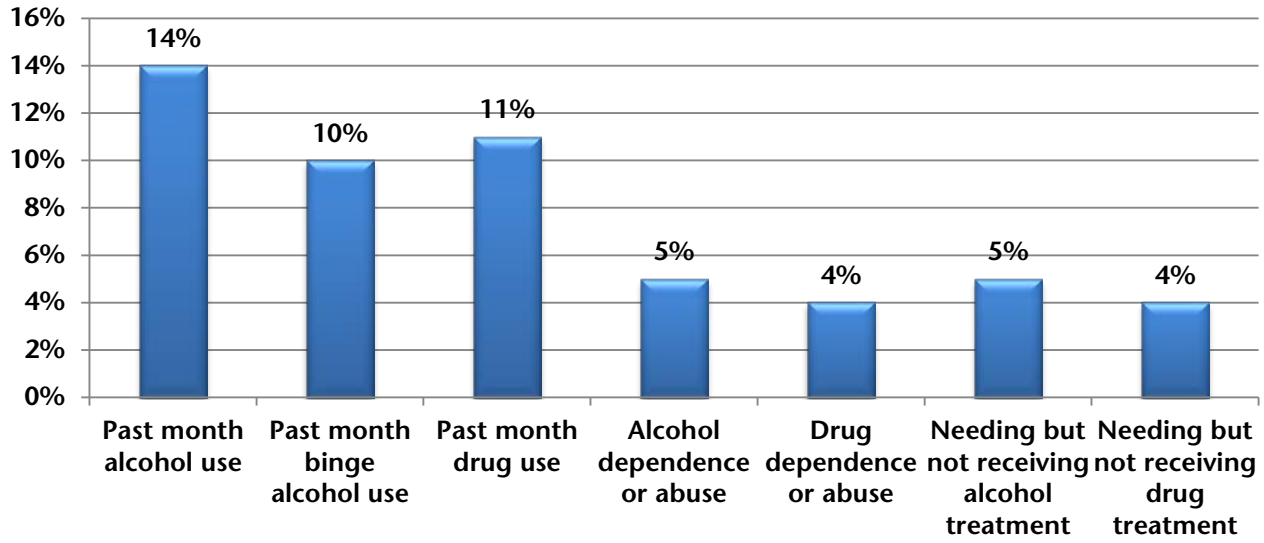
These estimates include injuries, deaths, crime and a number of other figures that have already been measured elsewhere in this study. Costs of pain and suffering have not been addressed in this report. These costs consider mental distress associated with physical and emotional injury as a result of youth alcohol consumption.

Incidences of Underage Drinking and Drug Use

There are several estimates of underage drinking incidences in Alaska, including the annual NSDUH and the biennial Youth Risk Behavior Survey tracked by the CDC's Youth Risk Behavior Surveillance System (YRBS).

According to NSDUH's 2008-2009 survey results (the most recent state-specific data available), 14 percent of Alaskans between the ages of 12 and 17 had reported drinking alcohol in the past month and one out of ten had reported binge drinking. Five percent were abusing or dependent on alcohol. In the same age group, 11 percent had used illicit drugs in the past month, with 9 percent using marijuana and 1.5 percent using cocaine. Four percent were dependent on or abusing illicit drugs. Figure 8 shows a breakdown of these results.

FIGURE 8. Selected Alcohol and Drug Use in Alaska, Age 12-17, 2009



Source: SAHMSA, *National Survey on Drug Use and Health, 2008-2009*, http://www.oas.samhsa.gov/2k9State/WebOnlyTables/stateTabs.htm#Tab13.

The CDC led *Youth Risk Behavior Survey* provides another indicator of underage drinking and drug use. According to Alaska's 2011 traditional high school survey results, over one-quarter (28.6 percent) reported that they currently participated in drinking activities and roughly one in five (21.2 percent) currently smoke marijuana. In Alaska's traditional high schools, 4.9 percent of students reported using cocaine in their life, 2.4 percent used heroin, 3.1 percent used methamphetamines, and 5.7 percent used ecstasy. Usage in Alaska's alternative high schools was much higher with 25.1 percent using cocaine, 10.1 percent using heroine, 12.3 percent using methamphetamines, and 28.6 percent using ecstasy.

According to SAMHSA's *National Survey of Substance Abuse Treatment Services* (N-SSATS), in 2010 one out of ten clients in treatment was under the age of 18. Of the 335 youth in treatment as of March 2010, 41 percent were there for substance abuse and 59 percent were in treatment for both mental health and substance abuse issues.

Causes of Underage Drinking

In a 2006 report by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), a variety of factors were cited that contribute to underage drinking. Identified causal factors include risk-taking, expectancies, sensitivity and tolerance to alcohol, personality characteristics and psychiatric comorbidity, hereditary factors, and environmental aspects.

- Risk-taking, or the desire to seek out potentially dangerous situations, is an attribute that scientists have linked to the extended brain development stage that occurs during adolescence.
- How alcohol consumption is perceived by an individual is another leading factor in underage drinking. If an individual expects drinking to be a pleasurable experience, they are significantly more likely to drink. The NIAAA study explains that perceptions of drinking change with age. Before age nine, children are more likely to have a negative view of alcohol. However, by age 13, expectancies shift becoming more positive.
- The underage brain is usually more tolerant to the effects of alcohol than the adult brain. Youth are able to drink more before feeling effects such as drowsiness, lack of coordination, and withdrawal/hangovers. This contributes to higher rates of binge drinking among youth.
- Personality characteristics in youth including hyperactivity, aggressiveness, conduct problems, and antisocial personalities are a common link among those that start drinking at a very early age.
- Hereditary factors can play a major role in underage drinking. Children from families with severe alcoholics place them at a much greater risk of drinking at a young age. Children of alcoholics are between four and ten times more likely to become alcoholics themselves than those with no close relatives with alcoholism.
- Finally, environmental aspects are another common factor in underage drinking. The influence of parents or peers that drink influence adolescent drinking behavior.

Chapter 8: Employment and Tax Impacts of Alcohol Sales

The primary focus of this report is to discuss the economic *costs* of alcohol and drug abuse to the state of Alaska. However, there are notable economic benefits that come along with the legal sale of alcohol in the state. The chief indicators of these benefits are employment and the associated earnings that end up circulating through the local economy. Other benefits such as indirect employment impacts as a result of alcohol sales and manufacturing are beyond the scope and purpose of this study.

This chapter briefly examines the economic benefits of alcohol sales in Alaska.

Methodology

The Alaska Department of Labor and Workforce Development maintains data on employment and earnings by industry. Data reported by the DOL was utilized to gather employment and earnings information for the following industries:

- Breweries & Wineries (NAICS 312120, 312130)
- Wholesale trade for beer, wine, and distilled beverages (NAICS 424810)
- Beer, Wine, Liquor stores (NAICS 445310)
- Drinking places, alcoholic (NAICS 722410)

Tax Revenue collected in Fiscal Year 2010 from the sale of alcoholic beverages was published in the Alaska Department of Revenue (DOR) *Alaska Tax Division 2010 Annual Report*. As of 2002, per gallon tax rates have remained stagnant at $12.80 for liquor, $2.50 for wine, and between $0.35 and $1.07 for beer and malt beverages. In 2010, $19.5 million, or half of total revenue from alcohol sales, went to the Alcohol and Other Drug Abuse Treatment and Prevention Fund.

Results

Average monthly employment in 2010 for alcohol-related industries was 3,023 jobs, bringing in annual earnings of $73.8 million. Tax revenues for alcohol sales totaled $38.8 million in 2010. The large majority of earnings were from retail trade at liquor stores and drinking places. Liquor accounted for nearly half of tax revenue while beer and malt beverages sales brought in one-third of revenues. Total alcohol-related employment, earnings, and tax revenues in Alaska for 2010 are presented in Table 26.

(see table next page)

Table 26. Impacts of Alcohol Sales-Related Economic Activity in Alaska, 2010 ($)

Economic Impact		
Employment and earnings	**Average Monthly Employment**	**Earnings**
Breweries	186	$6,186,392
Wineries	*	*
Wholesale trade	*	*
Retail trade: liquor stores	754	22,478,172
Retail trade: drinking places	1,647	25,045,601
Subtotal	**3,023**	**$73,759,508**
Tax revenues		**Total revenue**
Liquor		$19,394,015
Beer, malt beverage, cider		12,832,923
Beer, small brewery		5,332,658
Penalties, interest, refunds		194,007
Subtotal		**$38,756,760**
Total Earnings and Tax Revenues		**$112.5 million**

*Employment data for wineries and wholesalers is confidential and could not be released.
Source: DOLWD and DOR *Alaska Tax Division 2010 Annual Report*.

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