Economic Costs of Alcohol and Other Drug Abuse in Alaska, 2005 Update

Prepared for:

The Advisory Board on Alcoholism and Drug Abuse
Department of Health & Social Services

McDowell Group
Research-Based Consulting
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ECONOMIC COSTS OF ALCOHOL AND OTHER DRUG ABUSE IN ALASKA, 2005 UPDATE

PREPARED FOR:

THE ADVISORY BOARD ON ALCOHOLISM AND DRUG ABUSE
DEPARTMENT OF HEALTH & SOCIAL SERVICES

PREPARED BY:

McDowell GROUP

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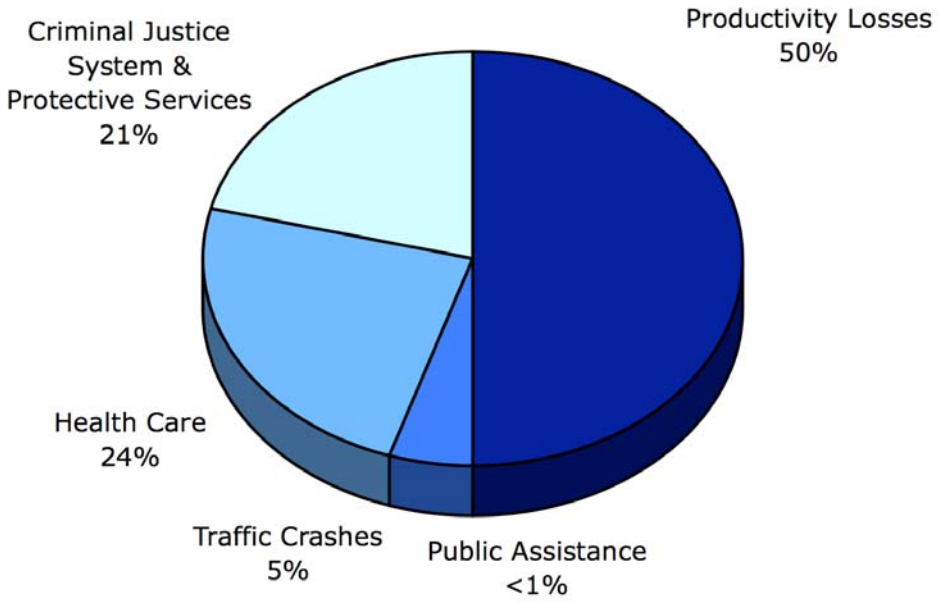
The Advisory Board on Alcoholism and Drug Abuse, through the Alaska Department of Health and Social Services, contracted with McDowell Group in April 2005 to update a prior study on the economic costs of alcohol and other drug abuse in Alaska.

Alcohol and other drug abuse impacts the economy in many ways. Public safety, health care, and public assistance are among the areas impacted by alcohol and other drug abuse. The extent of these impacts is evident in the level of alcohol and other drug dependency and its associated cost on the Alaska economy. According to a 1998 study, 9.7 percent of Alaska's population is dependent upon or abuses alcohol (39,596 residents), while 1.5 percent is other drug dependent (14,238 residents). The total cost of this dependence to the Alaska economy is estimated to be $738 million during 2003. Alcohol abuse costs accounted for $525.5 million (71 percent). Other drug abuse costs were estimated at $212.5 million (29 percent). Costs by category include:

- $367 million from productivity losses.
- $154 million from criminal justice and protective services.
- $178 million from health care.
- $35 million from traffic crashes.
- $4 million from public assistance.

Percentage of Costs by Category
Related to Alcohol and Other Drug Abuse in Alaska, 2003



More detailed study results for each cost category are presented below. Some of the economic benefits related to the manufacturing and sale of alcohol are also included.

Productivity Losses

Lost productivity occurs when alcohol and other drug abuse results in premature death, reduced efficiency of workers through physical or mental impairment, incarceration for criminal offense, and inpatient treatment or hospitalization. The reduced efficiency of employees, or premature death of Alaska residents, results in less production of goods and services, and is thus a cost to society.

Alcohol and other drug abuse in Alaska cost an estimated $367 million in lost productivity during 2003. Components of productivity losses and associated costs include:

- Premature death from alcohol and other drug abuse in Alaska resulted in an estimated $183 million in lost productivity in 2003. The annual average number of deaths from alcohol and other drug abuse between 1999 and 2003 was 236.
- Workers impaired by alcohol and other drug abuse had an estimated reduced productivity in Alaska of $136 million during 2003. This includes $106 million in alcohol-related impairment and $20 million in other drug-related impairment.
- Costs from alcohol and other drug-related incarcerations totaled an estimated $39 million in lost productivity during 2003. During that period, 1,193 inmate incarcerations were directly related to alcohol and other drug abuse.
- Lost productivity from Alaska residents receiving inpatient treatment for alcohol and other drug abuse cost an estimated $8.8 million in 2003.

Traffic Crashes

Alcohol and other drug abuse are a major cause of traffic crashes in Alaska. There were 1,109 traffic crashes in Alaska attributed to alcohol and other drug abuse during 2002. Of these crashes, 25 were fatal, 107 were major injury crashes, 370 were minor injury crashes, and 607 had property damage only. The estimated costs from these crashes were more than $35 million. Costs included:

- $16 million for legal costs.
- $12 million for insurance administration costs.
- $5 million for property damage costs.
- $2 million for workplace costs.

Costs by traffic accident category included:

- $26 million from major injuries.
- $5 million from fatalities.
- $2.5 million from minor injuries.
- $1 million from property damage only.

Criminal Justice

Alcohol and other drug abuse contribute to crime and child abuse. In 2003, an estimated 17,400 arrests were attributed to alcohol and other drug abuse. During this same period, 15,800 Alaska residents were victims of alcohol and other drug abuse-related crimes. Costs attributed to crime-related alcohol and other drug abuse in the state were nearly $154 million during this period. Crime costs in 2003 included:

- $43 million for law enforcement.
- $38 million for corrections.
- $12 million for legal costs and court adjudication.
- $636,000 for property damage.
- $1.9 million in economic costs to victims.
- Adult and child protective services attributed to alcohol and other drug abuse cost an estimated $59 million. These costs include foster care services, adoption care services, residential care services, and social worker services.

Health Care

Health care costs attributed to alcohol and other drug abuse result from illnesses or injuries. Examples of the kinds of health problems that can result from alcohol and drug abuse are cirrhosis of the liver, hypertension, diabetes, or stomach cancer. Health care costs related to alcohol and other drug abuse totaled an estimated $178 million in 2003. Health care costs included:

- Hospital costs from illnesses and injuries were estimated at $9.3 million. Alcohol abuse-related health care costs accounted for $84.8 million, while other drug abuse-related costs were $8.2 million.
- Alcohol and other drug residential and outpatient treatment costs were approximately $26.8 million.
- Total medical outpatient costs from illnesses and injuries totaled an estimated $25.7 million.
- Pharmaceutical costs were estimated at $23.0 million, while nursing home costs were $719,400.
- Medical care totaled $3.9 million for patients with other drug-related HIV and HIV with AIDS. Approximately 78 HIV and HIV with AIDS cases were attributed to intravenous drug abuse.
- Costs for medical treatment of hepatitis B and C caused by intravenous drug abuse was $5.1 million. Intravenous drug abuse contributed to 344 hepatitis B and C cases in Alaska in 2003.

Public Assistance and Social Services

A portion of public assistance expenditures can be attributed to alcohol and other drug abuse. Alcohol and other drug-dependent persons may qualify for public assistance because of reduced income, inability to hold a job, or disability caused by substance abuse. Costs attributed to abuse (program administration costs only) were an estimated $4.1 million in 2003.

Employment Impacts of Alcohol Sales

Although the focus of this study is centered on the cost of alcohol and other drug abuse, there are some economic benefits associated with the sale of alcoholic beverages. These economic benefits include employment, income and tax revenues. In 2003, there were approximately 3,000 jobs in alcohol-related industries in Alaska, with earnings of approximately $62 million. State excise tax revenue on alcoholic beverages, collected at the wholesale level, was approximately $33 million in FY 2004.

Actual Costs

It is critical the reader recognize that the alcohol and other drug-related costs presented in this study are estimates only. Actual costs could be 25 percent higher or lower than the total presented in this report. Very little underlying data exists regarding the monetary impact of alcohol and other drug abuse in Alaska. There is a clear need for more comprehensive research.

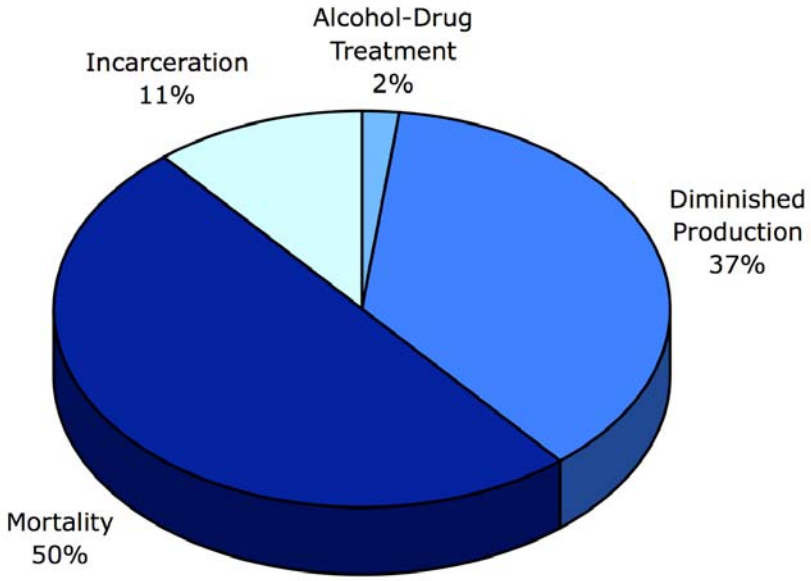
For this report, the McDowell Group study team used national data to estimate Alaska's alcohol and other drug abuse costs and then adjusted these costs for Alaska's higher cost of living. The study team relied heavily on a 1998 publication from the National Institute on Drug Abuse and National Institute on Alcohol Abuse and Alcoholism (NIDA/NIAAA, 1998), and a 1999 study for the Washington State Department of Social and Health Services, Division of Alcohol and Substance Abuse. As exhaustive and thorough as these studies are, they do not address Alaska's higher alcohol rates or its higher cost of providing services. Alaska's alcohol-dependent population is double the national average, according to results of the Alaska Adult Household Telephone Survey conducted by the Gallup Organization. In addition, cost-of-living indicators published by American Chamber of Commerce Researchers Association (ACCRA) show Anchorage health care costs were 65 percent higher than the national average during 2003.

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. National norms are based on a lower prevalence of alcohol abuse and dependence than is the case in Alaska. Comprehensive development of Alaska-specific data is recommended.

Summary

Alcohol and other drug abuse cost Alaska an estimated $367 million in lost productivity during 2003. Lost productivity occurs when alcohol and other drug abuse results in premature death, reduced efficiency of workers through physical or mental impairment, incarceration for criminal offense, and residents requiring inpatient treatment or hospitalization. Overall, the reduced efficiency of employees or premature death of Alaska residents results in less production of goods and services, and thus is a cost to society. Figure 1 illustrates the sources of lost productivity in the Alaska economy.

Figure 1
Percent of Lost Productivity for Alaska from Alcohol and Other Drug Abuse in 2003



- Premature death from alcohol and other drug abuse in Alaska resulted in an estimated $183 million in lost productivity in 2003. Males accounted for $145 million in estimated losses and females, $37.7 million. An average of 236 deaths annually can be attributed to alcohol and other drug abuse between 1999 and 2003. Alcohol and drug abuse accounted for approximately 8 percent of deaths in that period; the average annual number of deaths from all causes in Alaska was 2,964 between 1999 and 2003.
- Alcohol and other drug abuse can impair worker performance resulting in lost productivity. An estimated 39,596 Alaska residents are alcohol dependent, resulting in reduced productivity of $106 million in 2003. Another 14,238 residents were drug dependent, resulting in $30 million in diminished productivity. The male population accounted for the largest portion of lost

productivity at $111 million, while productivity losses for females were estimated at $26 million.

- Of the 3,743 Alaska residents incarcerated in 2003, an estimated 1,193 incarcerations can be attributed to alcohol and other drug abuse. Lost productivity from alcohol and drug related incarcerations was estimated at $39 million.

- Time spent by Alaska residents while receiving inpatient treatment for alcohol and other drug abuse resulted in approximately $9 million in lost productivity in 2003. These figures do not include the actual cost of treatment.

Lost Production Due to Mortality

The largest cost to Alaska residents from alcohol and other drug abuse stems from productivity losses due to premature death. Death from alcohol and other drug abuse can result from suicide, motor vehicle crashes, homicide, cirrhosis, diabetes, or other medical causes. From an economic point of view, an Alaska resident provides two types of production benefits. The first is in the form of employment. By being employed, the resident is contributing to the overall benefit of Alaska society by producing goods and services. The second production benefit is from household services. An individual spends time caring for children, cleaning and maintaining a household like any wage and salary job, though that service is generally not compensated. Combined, these production losses contribute to the largest cost from alcohol and other drug abuse in Alaska.

Methodology

To estimate productivity losses from premature death, McDowell Group relied on the same methodology used in the "The Economic Costs of Alcohol and Drug Abuse in the United States – 1992" for the National Institute on Drug Abuse and National Institute on Alcohol Abuse and Alcoholism (NIDA/NIAAA) published in 1998. The research team first applied attribution factors by diagnosis supplied in the NIDA/NIAAA study to annual deaths by diagnosis reported by Alaska Vital Statistics from 1999 to 2003. Second, 2000 estimates of the present value of life earnings by age and gender were obtained from a published report by University of California Professor Dorothy Rice. These values are a combination of earnings data and estimated value of household services, which originate from U.S. Bureau of Census data. Earnings were adjusted by 5.5 percent to reflect the change in annual per capita personal income from 2000 to 2003 reported by the Bureau of Economic Analysis. Finally, the number of deaths by age and gender attributed to alcohol and other drug abuse were multiplied by the appropriate present value of life earnings in 2003 dollars.

In summary, the value of an average person's lifetime productivity is estimated and, depending on their age at the time of premature death, lost productivity is measured. It is important to note that this measure is not an estimate of "out-of-pocket" losses. Rather, it is a theoretical construct intended to reflect the fact that humans have the potential to be productive, and if life is cut short, society has suffered a loss of production potential.

Results

On average, there were 236 deaths in Alaska due to alcohol and other drug abuse between 1999 and 2003. Based on data from this period, alcohol and other drug abuse accounted for approximately 8 percent of all the deaths in the state (there was an annual average of 2,964 deaths from all causes between 1999 and 2003).

A breakdown of average annual deaths by age and gender is presented in Table 1. Of these deaths, 72 were females and 163 were males. From 199 to 2003, the age group with the highest number of deaths for females was 40 and 44 (seven alcohol and other drug-related deaths) and 45 to 54 for males (36 alcohol and other drug-related deaths). Table 2 shows the number of alcohol and other drug-related deaths by cause during this period. Motor vehicle crashes (41 deaths) and suicide (33 deaths) were the major causes of premature death from alcohol and other drug abuse between 1999 and 2003.

Table 1
Average Annual Number of Deaths Attributed to Alcohol and Other Drug Abuse by Age and Gender, 1999-2003

Age	Males	Females
00-04	2.9	2.0
05-09	1.4	0.2
10-14	2.9	1.4
15-19	10.8	4.0
20-24	11.4	4.0
25-29	9.7	3.5
30-34	9.9	3.3
35-39	13.3	5.9
40-44	15.6	6.9
45-49	16.7	6.5
50-54	14.1	4.7
55-59	11.9	4.2
60-64	8.7	4.6
65-69	9.5	3.8
70-74	9.1	4.1
75-79	6.1	4.2
80-84	5.4	3.5
85+	4.0	5.2
Total	**163.4**	**72.2**

Source: Alaska Bureau of Vital Statistics.

Table 2
Average Annual Number of Deaths Attributed to Alcohol and Other Drug Abuse by Diagnoses or Accident, 1999-2003

Illness or Accident	Average Deaths
Motor vehicle accidents	41.2
Intentional self-harm (suicide)	33.0
Mental and behavioral disorders due to use of alcohol	31.2
Assault (homicide)	20.0
Malignant neoplasm of esophagus	14.0
Cerebrovascular disease	11.8
Accidental drowning and submersion	9.1
Accidental poisoning by and exposure to alcohol	8.6
Fibrosis and cirrhosis of liver	8.2
Toxic liver disease	7.7
Malignant neoplasm of lip, oral cavity and pharynx	6.5
Accidental falls	5.4
Accidents caused by fire and flames	4.7
Psychoactive Substance (nondependent) abuse	4.4
Diabetes mellitus	4.2
Malignant neoplasm of stomach	4.0
Air and space transport accidents	3.3
Water transport accidents	3.1
Drug dependence	2.8
Pedal cyclist, motorcycle rider and ATV accidents	2.5
Alcoholic cardiomyopathy	2.4
Pneumonia and influenza	2.4
Acute pancreatitis	2.4
Other diseases of pancreas (including alcohol-induced and chronic)	0.9
Essential hypertension	0.8
Diseases of esophagus, stomach and duodenum	0.8
Respiratory tuberculosis	0.4
Alcoholic gastritis	0.2
Total	**235.6**

Source: Alaska Bureau of Vital Statistics.

Total economic loss from premature death of Alaska residents was $183 million during 2003. Table 3 presents estimated loss of productivity by age and gender. Males accounted for almost $145 million in lost productivity. Females accounted for approximately $38 million. The most significant costs were associated with males in two age groups, those between the ages of 20 to 24 years and 40 to 44 years, which each accounted for $18 million in lost productivity. Females age 35 to 39 years accounted for $5 million, as did those age 40 to 44.

Table 3
Mortality Costs Attributed to Alcohol and Other Drug Abuse
By Age and Gender, 2003

Age	Males	Females
1-4	$3,363,000	$1,693,000
5-9	$1,751,000	$226,000
10-14	$4,038,000	$1,382,000
15-19	$16,320,000	$4,450,000
20-24	$18,240,000	$4,602,000
25-29	$15,410,000	$3,892,000
30-34	$14,810,000	$3,348,000
35-39	$17,870,000	$5,216,000
40-44	$18,040,000	$5,054,000
45-49	$15,590,000	$3,765,000
50-54	$9,872,000	$1,951,000
55-59	$5,456,000	$1,076,000
60-64	$2,188,000	$625,000
65-69	$1,189,000	$236,000
70-79	$539,800	$115,200
75-79	$150,100	$49,440
80-84	$59,880	$16,690
85 & over	$12,000	$4,255
Total	**$144,900,000**	**$37,700,000**

Source: Alaska Bureau of Vital Statistics and Dr. Dorothy Rice, University of California.

Lost Production Due to Diminished Productivity

Alcohol and other drug abuse by Alaska residents results in reduced productivity. This loss can come in the form of high absenteeism, reduced efficiency from diminished physical and mental abilities, or limited work history because of the individual's inability to hold a job. Abuses of alcohol and other drugs may also impact a person's ability to be productive in non-employment related activities like household or parenting services. In extremely severe cases, abusers of alcohol and other drugs can be hospitalized or even institutionalized, in essence removing the individual from productive society entirely. These productivity losses from alcohol and other drug abuse have a significant cost burden to the residents of Alaska.

Methodology

The primary method for estimating economic costs from diminished productivity was to measure lost earnings. The research team relied on estimates presented in the NIDA/NIAAA (1998) study that determined the percent of lost earnings from alcohol and other drug dependence. In the study, the authors estimated the loss of earnings from alcohol-dependent males at 9.4 percent of average earnings and lost earnings from other drug dependent males at 7.7 percent of average earnings. Estimates on lost earnings for the female alcohol and other drug-dependent population came from the 1990 Rice study on the economic impacts of alcohol and other drug abuse. These estimates were used because the authors of the NIDA/NIAAA (1998) study found no impacts to female earnings from alcohol or other drug dependence. The 1990 study reports a reduction in earnings from alcohol dependence of 6.9 percent and 5.4 percent from other drug dependence.

Estimates on the number of Alaskans who are alcohol and other drug dependent came from the 2003 National Survey on Drug Use and Health by the Substance Abuse and Mental Health Services Administration (SAMHSA). In the report, SAMHSA estimated that 10.4 percent of Alaska's population is classified with alcohol or drug dependence or abuse: 8.6 percent for alcohol and 3.1 percent for other drugs. Approximately 1.3 percent of the population is dependent or abusing both alcohol and drugs. SAMHSA reports that males are almost twice as likely to be classified with substance dependence or abuse as females.

Total costs from diminished productivity for male and females were calculated by multiplying diminished productivity by the number of Alaskans who were alcohol and other drug dependent in 2003. The research team collected data from the Alaska Department of Labor and Workforce Development (ADOL) on earnings for males and females during 2003. Alaska males earned an average of $33,762 in 2003, while females earned $23,056. The research team then estimated the annual loss in earnings by multiplying the percent decline in earnings for alcohol or other drug dependence for each gender by the appropriate annual Alaska earnings for 2003.

Results

In 2003, Alaska had approximately 39,596 adult residents classified with alcohol dependence or abuse and 14,238 residents classified with drug dependence or abuse. Of those alcohol-dependent residents, 27,355 were males and 12,240 were females. The drug-dependent population consists of 9,283 adult males and 4,956 adult females. Table 4 presents computation figures for estimating diminished productivity from alcohol and other drug dependence or abuse.

Table 4
Productivity Losses from Alcohol and Other Drug Dependence or Abuse by Gender, 2003

	Alcohol		Other Drugs	
	Males	**Females**	**Males**	**Females**
Alaska population 18 years and over that is alcohol and other drug dependent	27,355	12,240	9,283	4,956
Annual average earnings for Alaska in 2003	$33,762	$23,056	$33,762	$23,056
Loss in productivity from alcohol and other drug dependence	9.4%	6.9%	7.7%	5.4%
Annual lost earnings from alcohol and other drug abuse	$3,174	$1,591	$2,600	$1,245
Estimated productivity loss from alcohol and other drug abuse	$87 million	$19 million	$24 million	$6 million

Sources: Alaska Department of Labor, Employment and Earnings report, 2003; SAMHSA *2003 National Survey on Drug Use and Health*, and *The Economic Costs of Alcohol and Drug Abuse in the United States-1992* (NIDA/NIAAA, 1998).

The typical Alaska male alcohol abuser cost society $3,174 annually in diminished productivity in 2003. The typical male drug abuser cost society $2,600 in 2003. During that same period, the average female alcohol abuser cost society $1,591 in lost production, while the typical female drug abuser cost society $1,245. Total diminished productivity for Alaska from alcohol and other drug-dependent residents was an estimated $137 million. Of those adults who abuse alcohol or are dependent, the largest portion was from the state's male population. An estimated $87 million in diminished productivity was from males who abuse or are dependent on alcohol, and another $19 million was from females. Diminished productivity from other drug dependence was estimated to cost the state economy $30 million, $24 million from males and $6 million from females.

Lost Production Due to Incarceration

Another source of lost productivity for Alaska is from residents incarcerated because of alcohol and other drugs. Residents can be incarcerated for committing an alcohol or other drug related crime or from committing a crime while under the influence of alcohol or other drugs. An example of an alcohol or other drug-related crime would be distributing alcohol without a license or selling illegal drugs. Sexual assault is an example of a crime committed under the influence, where alcohol or other drug use was a contributing factor. Without alcohol or other drugs, incarcerated Alaskans could be productive members of society producing goods and services. While incarcerated, these individuals are generally not employed and thus are not productive members of society. This loss in productivity can be measured by estimating lost earnings.

Methodology

Estimates for lost productivity from incarcerations involved two steps. The first was to determine the number of Alaska residents incarcerated due to alcohol or other drug-related crimes. The research team relied on national attribution rates published in the NIDA/NIAAA (1998) study. These rates are presented in Table 5. These national attribution rates are thought to be lower than incarceration rates for Alaska from alcohol and other drug abuse. However, no Alaska-specific research has been completed to verify this premise. Currently, only anecdotal information is available. It is speculated that alcohol and other drug abuse plays a role in 85 percent to 95 percent of all incarcerations in Alaska.[1]

Table 5
Attribution Rates for Alcohol and Other 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).

The second step was to estimate potential loss of earnings from incarceration. The research team assumed that persons incarcerated because of alcohol and other drug abuse could be as productive as the general population. As shown above, ADOL indicates Alaska males earned $33,762 in 2003 and females earned $23,056. The earnings estimates were then applied to the alcohol and other drug-related incarcerated population for Alaska in 2003.

[1] Based on discussions with Sarah Williams, Coordinator of Substance Abuse Program, and Teri Carns, Staff Director for the Alaska Criminal Justice Assessment Commission.

Results

In 2003, there were 3,743 people incarcerated for crimes of all types (this is a count of the inmate population regardless of what year they were placed in a correctional facility, not the number of annual offenses). Of these, 1,193 incarcerations were attributed to abuse of alcohol and other drugs. Males accounted for most of the incarcerations attributed to abuse of alcohol and other drugs at 1,065 in 2003, while females accounted for 128 incarcerations.

Table 6 presents the number of people incarcerated for alcohol or drug related offenses in 2003 by offense and gender. These are not the number of incidences in a single year, but the cumulative total of those in prison as of December 31, 2003. Sexual assault, assault, and homicide were the primary offenses committed. Based on attribution rates shown in Table 5, an estimated 122 people were incarcerated for sexual assaults, 163 for assaults, and 122 for homicides attributed to alcohol abuse. Drug law violations were the primary offense associated with other drug abuse at 175 incarcerations.

Table 6
Alcohol and Other Drug-related Incarcerations in Alaska by Offense and Gender, 2003

	Alcohol		Other Drug	
Offense	**Females**	**Males**	**Females**	**Males**
Homicide	7	115	4	61
Assault	11	152	2	26
Sexual Assault	1	121	0	27
Robbery	0	4	2	32
Burglary	0	2	0	21
Larceny-Theft	1	5	11	51
Auto Theft	0	1	0	3
Drug Laws	0	0	34	141
Driving under the influence	41	259	0	0
Liquor Laws	8	49	0	0
Prostitution	0	0	0	0
Total	**70**	**708**	**54**	**360**

Source: McDowell Group based on Alaska Department of Corrections 2003 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).

Total lost productivity from incarcerations from alcohol and other drug abuse in Alaska was $39 million in 2003. Incarcerated males accounted for $36 million, while females accounted for $3 million in lost productivity.

Lost Production Due to Alcohol/Other Drug Treatment

The final source of lost productivity included in this study is from Alaska residents receiving inpatient alcohol and other drug treatment. Treatment includes long-term residential treatment, short-term hospitalization, and detoxification. While receiving treatment for alcohol and other drug abuse, patients are not productive residents in the Alaska economy, so society loses the benefit of their production of goods and services. This loss in productivity can be measured by estimating lost earnings.

Methodology

Total bed days for residential and detoxification treatment centers were used to estimate lost productivity in 2005 from time spent while undergoing alcohol and other drug treatment. Data for 2003 was not available, therefore 2005 is considered a reasonable proxy for 2003 bed days. Total bed days were then converted to work years. Work years were multiplied by average annual 2003 earnings of $37,356 for all Alaskans, as reported by ADOL.

Results

DBH grantees reported 85,926 total bed days for alcohol and other drug abuse in 2005.[2] These total bed days was equivalent to 235 work years. Overall, total lost production from inpatient treatment for alcohol and other drug abuse was estimated at $8.8 million. This figure does not include lost productivity from residents receiving substance abuse treatment outside the state. Although the exact number of these individuals is unknown, it is estimated that much of the private residential treatment received by Alaskans occurs outside of the state.[3]

[2] Source: Alaska Department of Health and Social Services, Mike Bellevue.
[3] 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.

Alcohol use is a major cause of traffic crashes in Alaska. In 2002, 1,109 traffic crashes were attributed to alcohol, costing an estimated $35 million. Of these crashes, 25 were fatal injury crashes, 107 were major injury crashes, 370 were minor injury crashes, and 607 crashes had property damage only. According to the Alaska Department of Transportation and Public Facilities (ADOTPF), a traffic crash is alcohol-related under 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.

Methodology

To measure the cost of traffic crashes, the research team used two sources: State of Alaska 2002 alcohol-related traffic crash statistics from ADOTPF, and cost-per-accident data from the National Highway Traffic Safety Administration (NHTSA), adjusted for inflation to 2003 dollars.[4] Crash data was divided into four categories: property damage only, minor injury, major injury, and deaths. These categories were matched to the national data, which shows unit costs from motor vehicle crashes in eight categories. McDowell Group matched minor injuries reported by ADOTPF with Maximum Abbreviated Injury Scale (MAIS) Level 1, classified as minimum injuries in the NHTSA report. Major injuries were matched to MAIS Level 5, classified as critical injuries by NHTSA. No extrapolation is needed for the remaining categories, property damage only and fatalities, which are in each study. Unit costs related to traffic crashes from the NHTSA report are presented in Table 7.

Table 7
Unit Costs of Traffic Crashes in the U.S., 2003

Type of Cost	Fatal	Major Injury (MAIS 5)	Minor Injury (MAIS 1)	Property Damage Only
Insurance administration	$37,120	$75,118	$715	$116
Workplace cost	$8,702	$8,191	$252	$51
Legal cost	$102,138	$88,753	$172	$0
Property damage	$10,273	$9,446	$3,844	$1,484
Total	**$158,233**	**$181,508**	**$4,983**	**$1,651**

Source: *The Economic Cost of Motor Vehicle Crashes, 2000*, NHTSA.

Other than knowing that other drugs are a contributing factor in traffic crashes, little is known about their significance, because only alcohol-related data is collected. In the NHTSA study, costs from traffic crashes are divided into separate expense categories. This includes medical costs, loss in productivity from mortality and morbidity, insurance administration costs, workplace costs, legal costs, and property damage costs. To avoid double counting, the research team estimated insurance

[4] *The Economic Cost of Motor Vehicle Crashes, 2000*, published by the National Highway Traffic Safety Administration (NHTSA).

administration costs, workplace, legal and property costs. Losses in productivity and medical costs are accounted for in other sections of the report.

Cost estimates for alcohol-related traffic crashes were adjusted to reflect changes in the Alaska cost-of-living and in U.S. prices from 2000 to 2003. Inflation was estimated using the Anchorage consumer price index from the Bureau of Labor Statistics (BLS). Inflation over this period was approximately 8 percent. The source for the cost-of-living data was the American Chamber of Commerce Researchers Association (ACCRA). During 2003, Anchorage's cost-of-living was approximately 25 percent higher than the average participating city in the American Chamber of Commerce.

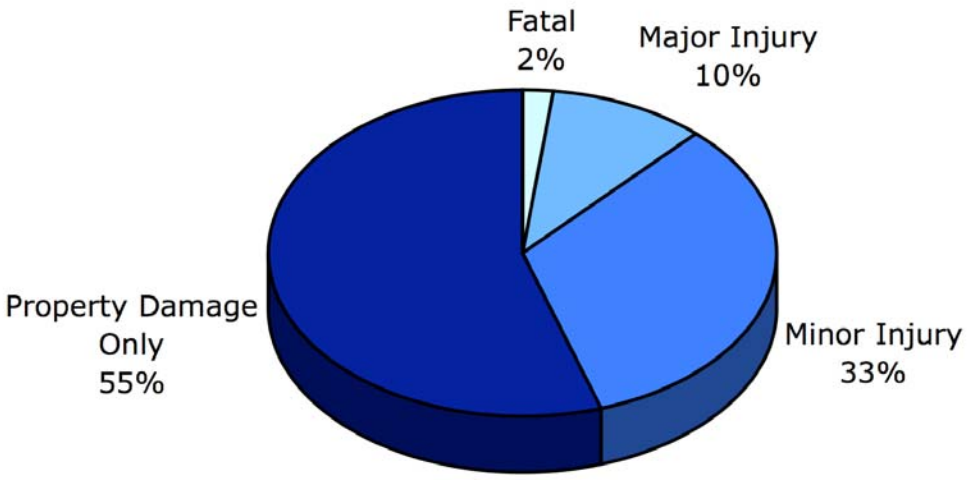
Traffic accident statistics include ATV and snowmobile crashes on roadways, but DOTPF does not collect ATV and snowmobile crashes off roadways, such as rivers, lakes, and in the backcountry. Lost productivity and health care costs associated with alcohol-related ATV and snowmobile deaths or injuries are included in the cost estimates. Property damage is not included.

Results

In 2002, 1,109 traffic crashes in Alaska were alcohol-related, about 8 percent of traffic crashes from all causes (13,325). However, the percentage of traffic fatalities caused by alcohol is much greater. About half of all U.S. fatal traffic crashes are caused by alcohol use (NHTSA, 1994). In Alaska, 32 percent of the 78 deaths from traffic crashes were attributed to alcohol in 2002. Figure 2 shows the number of alcohol-related crashes by category.

Adjusted to reflect 2003 dollars, alcohol-related traffic crashes in Alaska cost approximately $35 million in 2003. Table 7 shows the cost of alcohol-related traffic crashes by severity and expense. Legal costs of $16 million were the largest expense, followed by insurance administration costs at $12 million. By crash category, major injuries accounted for the largest costs at $26 million. Lost productivity associated with fatal crashes are not included in this estimate. (See chapter on Lost Productivity.) If these costs were included, the costs of alcohol-related traffic deaths would be far higher than other traffic crash categories.

Figure 2
Percent of Alcohol-Related Traffic Crashes by Type in Alaska, 2002



Source: Alaska Department of Transportation and Public Facilities.

Table 8
Number of Traffic Crashes and
Total Cost of Alcohol-Related Crashes in Alaska, 2003

Number of Traffic Crashes and Cost Type	Fatal	Major Injury	Minor Injury	Property Damage Only	Total Costs
Number of traffic crashes	25	107	370	607	1,109
Insurance administration cost (thousands of dollars)	$1,245	$10,787	$355	$94	$12,482
Workplace cost (thousands of dollars)	$292	$1,176	$125	$42	$1,635
Legal cost (thousands of dollars)	$3,427	$12,745	$85	$0	$16,257
Property damage cost (thousands of dollars)	$345	$1,356	$1,909	$1,209	$4,819
Total Costs (thousands of dollars)	**$5,309**	**$26,064**	**$2,474**	**$1,345**	**$35,192**

Source: McDowell Group, Note: Number of accidents is based on 2002 data from Alaska Department of Transportation and Public Facilities report, *2002 Alaska Traffic Collisions*; and *The Economic Cost of Motor Vehicle Crashes, 2000*, NHTSA, adjusted for inflation and cost-of-living in Alaska.

Alcohol and other drug abuse contribute to a majority of the criminal justice and protective services costs in Alaska. Combined, these costs totaled nearly $154 million during 2003. Costs for police protection, legal and court services, and incarceration services totaled $93.8 million in 2003. Child and adult protective services totaled nearly $60 million in Alaska during 2003. Child protective services, the largest share of protective services, includes foster care, adoption care, residential care, and social worker services.

Criminal Justice

Like all states in the U.S., Alaska suffers from alcohol and other drug abuse-related crime. Nationwide, 49 percent of 14,000 inmates surveyed reported they were under the influence of alcohol and other drugs at the time of the offense (NIDA/NIAAA, 1998). In another study, it was reported that 2.5 million arrests were made in the U.S. for alcohol offenses, while another 1.5 million arrests were for other drug offenses (Schneider Institute for Health Policy, 2001).

In Alaska there were an estimated 17,000 arrests or offenses known to law enforcement in 2003 that were attributed to alcohol and other drug abuse. During the same period, approximately 57,000 Alaska residents were victims of alcohol and other drug abuse-related crimes. All combined, costs attributed to crime-related alcohol and other drug abuse in Alaska were $93.8 million during this period.

The focus of this section is to provide estimates on the economic costs of crime-related alcohol and other drug abuse for Alaska during 2003.

Methodology

To estimate the economic costs of alcohol and other drug abuse-related crime, the research team relied on a methodology similar to that used in the NIDA/NIAAA (1998) report. Five cost measurements were used: law enforcement, legal and adjudication, corrections, victims' property damage, and victims' medical expenses. Within each category, crime-related attribution rates for alcohol and other drug abuse (NIDA/NIAAA, 1998) were applied to Alaska crime data.

To estimate enforcement and legal costs, estimates were based on data from the Alaska Department of Public Safety (DPS), and blended with attribution rates from the NIDA/NIAAA (1998) report. DPS prepares an annual report, "Crime Reported in Alaska," as part of the nationwide Unified Crime Reporting system. In 2003, law enforcement agencies reporting to DPS for the purposes of the UCR had jurisdiction over 97.5 percent of Alaska's population. The report presents data on offenses known to law enforcement for a proscribed group of offenses: murder, rape, aggravated assault, burglary, larceny-theft, and motor vehicle theft. This includes all offenses of which law enforcement is aware, whether or not an arrest was made. In addition, the report provides arrest data on a number of additional categories of offense. For the purpose of this report, data on offenses known to law enforcement were used when available. When unavailable, straight arrest data was used. Variations between the two data types are noted when appropriate.

Though not used in this study, data from the Arrestee Drug Abuse Monitoring Program (ADAM) project provides an indication of the linkage between drug abuse and crime in Alaska. For example, a survey (including drug testing) of 718 male and female arrestees in Anchorage in 1999 found that 54 percent of males and 56 percent of females tested positive for one or more drugs (including cocaine, marijuana, opiates, Methamphetamine, and PCP).[5] The ADAM project also collected arrestee data on alcohol use. The survey collected data on long-term and near-term drinking behavior prior to arrest for 1,178 males booked into Anchorage jails in 2000 and 2001. The authors of the summary report concluded that "among those that enter the criminal justice system through jails, problematic alcohol abuse is rampant."[6]

Inmate population by offense was used for correction cost estimates. Inmate counts were based on the Alaska Department of Corrections 2003 Offender Profile. The Offender Profile provides inmate counts by offense category as of December 31 of each year. Alcohol and drug abuse attribution rates from NIDA/NIAAA (1998) were applied to this data. Total expenditures by the Department of Corrections in 2003 were $179 million.

Alaska population data from ADOL and victimization rates from the Bureau of Justice Statistics were used to estimate victim property damage and medical costs. In each case, Alaska-specific data by offense was multiplied by its associated attribute rate for alcohol and other drug abuse.

Attribution rates, arrests, and incarcerations related to alcohol and other drug abuse are presented in Tables 9 and 10.[7] Victimization rates, victim numbers, and attribution rates related to alcohol and other drug abuse are shown in Table 11.

[5] "Drug Abuse Among Arrestees in Anchorage", Alaska Justice Forum 17(1), Spring 2000.
[6] "Alcohol Use Among Anchorage Arrestees", Alaska Justice Forum 19(4), Winter 2003.
[7] Specific data on drug and alcohol arrests is available from the Alaska State Troopers Alaska Bureau of Alcohol and Drug Enforcement (ABADE). For example, ABADE alcohol-related arrest/charges included 43 for distribution/sales and 237 for transport in 2003. Cocaine related arrests/charges includes 53 for distribution/sales, 28 for transport and 24 for possession in 2003. Crack related arrests/charges includes 13 for distribution/sales and 11 for possession. Source: 2003 Annual Drug Report.

Table 9
Arrests Attributed to Alcohol and Other Drug Abuse in Alaska, 2003

Type of Offense	Total Number of Arrests	Alcohol Abuse	Drug Abuse	Arrests Attributed to Alcohol Abuse	Arrests Attributed to Drug Abuse	Total Substance Related Arrests
Murder	39	30%	16%	12	6	**18**
Aggravated Assault	2,638	30%	5%	791	135	**926**
Sexual Assault	575	23%	2%	129	14	**143**
Robbery	442	3%	27%	15	120	**135**
Burglary	3,809	4%	30%	137	1,143	**1,280**
Larceny-Theft	17,626	3%	30%	494	5,217	**5,711**
Auto Theft	2,411	4%	7%	84	164	**248**
Driving While Intoxicated*	4,987	100%	0%	4,987	0	**4,987**
Liquor Laws*	1,746	100%	0%	1,746	0	**1,746**
Stolen Property*	24	0%	15%	0	4	**4**
Prostitution*	59	0%	13%	0	8	**8**
Drug Laws*	2,187	0%	100%	0	2,187	**2,187**
Total	**36,543**			**8,396**	**8,997**	**17,392**

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, 2003* from the Alaska Department of Public Safety.
Notes: Columns and rows may not total 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.

Table 10
Incarcerations Attributed to Alcohol and Other Drug Abuse in Alaska, 2003

Type of Offense	Alaska Inmates in 2003 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
Murder	407	30.0%	15.8%	122	64	**186**
Aggravated assault	541	30.0%	5.1%	162	28	**190**
Sexual assault	543	22.5%	2.4%	122	28	**150**
Robbery	124	3.4%	27.2%	4	34	**38**
Burglary	70	3.6%	30.0%	3	21	**24**
Larceny/theft	209	2.8%	29.6%	6	62	**68**
Auto theft	40	3.5%	6.8%	1	3	**4**
Driving while intoxicated	300	100.0%	0.0%	300	0	**300**
Liquor laws	57	100.0%	0.0%	57	0	**57**
Prostitution	2	0.0%	12.8%	0	0	**0**
Drug laws	175	0.0%	100.0%	0	175	**175**
Total	**2,468**			**778**	**414**	**1,192**

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. 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 murder" would be grouped in the "murder" category.
Notes: Columns and rows may not total due to rounding.

Table 11
Victimizations Attributed to Alcohol and Other Drug Abuse in Alaska, 2003

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	2.5	1,309	3.4%	27.2%	45	356	**401**
Assault	19.3	10,107	30.0	5.1	3,032	515	**3,548**
Personal larceny	124.4	28,506	2.8	29.6	798	8,438	**9,236**
Burglary	29.8	6,829	3.6	30.0	246	2,049	**2,294**
Motor vehicle theft	9	2,062	3.5	6.8	72	140	**212**
Sexual Assault	0.8	419	22.5	2.4	94	10	**104**
Murder	-	39	30.0	16.0	12	6	**18**
Total		**49,232**			**4,299**	**11,514**	**15,813**

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 Alaska Department of Labor, and victimization rates from Bureau of Justice Statistics.

As reported under Productivity Losses, crime rates attributed to alcohol and other drug abuse are thought to be higher in Alaska than the rest of the nation. Attribution rates from the NIDA/NIAAA (1998) study were used to estimate Alaska crime rates related to substance abuse, because no Alaska-specific data is currently available to support this premise.

To measure criminal costs attributed to alcohol and other drug abuse, the research team used NIDA/NIAAA (1998) data to estimate the economic implications of criminal activity. After adjusting for inflation and the Alaska cost-of-living differential, law enforcement costs per arrest ranged from $60 to $4,100, depending on the offense, while the average legal costs for most offenses were $1,100 per arrest. Legal costs for driving while intoxicated, liquor laws, and public drunkenness were approximately $60 per arrest. Average incarceration costs per inmate were approximately $33,500. Property damage and medical costs per victim by crime type are presented in Table 12. These unit costs were used to estimate the costs of arrests, incarcerations, and victimizations related to alcohol and other drug abuse.

Table 12
Property Damage and Medical Expenses per Victim, 2003

Type of Crime	Property Damage Expenses per Victim	Medical Expenses per Victim
Robbery	$27	$10
Assault	46	540
Rape	-	72
Murder**	-	23,816
Larceny	31	-
Burglary	58	-
Motor vehicle theft	207	-

Source: McDowell Group estimates based on NIDA, NIAAA 1992 and the Bureau of Justice Statistics.
** Medical costs for homicides include long-term costs. See NIDA/NIAAA (1998), Appendix C, Table C.6.

As noted above, costs were adjusted to reflect changes in U.S. prices from 1992 to 2003, as well as the cost-of-living in Alaska. Bureau of Labor Statistics inflation rates specific to health care were used to inflate health care and medical expenses (a 56 percent inflation rate). To adjust for Alaska's higher medical costs relative to the rest of the country, medical expenses for victims were increased by a 65 percent health care-specific cost-of-living differential. This differential was drawn from American Chamber of Commerce Research Association data for fourth quarter 2003.

Additional costs from lost productivity due to incarceration are presented in the Productivity Losses chapter to avoid double counting. Inmates are generally not employed while incarcerated, so society loses the benefit of their production of goods and services.

Drug traffic control costs were not included in this report. The U.S. budget in fiscal year 2003 for drug traffic control was $11 billion.[8] Some portion of this money was spent in Alaska for drug interdiction, international intelligence, research, and a number of other drug-related activities. However, specific information on Alaska's portion of this budget is not available.

Results

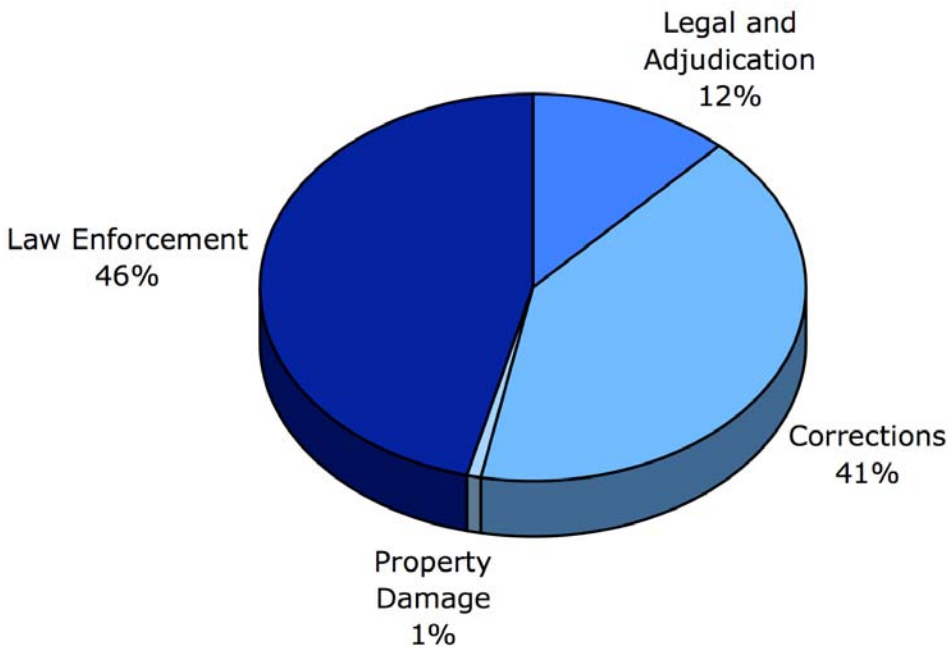
In Alaska in 2003, approximately 17,400 offenses known to law enforcement and 1,190 incarcerations were attributed to alcohol and other drug abuse. Of the 17,400 arrests, 8,400 crimes were related to alcohol abuse, while other drug abuse accounted for 9,000 crimes. Among incarcerations, 780 were alcohol-related and 410 were other drug-related.

Alaska also had an estimated 15,800 residents who were victims of alcohol or other drug abuse-related crimes. The number of victims who had property damage was 11,700, while 4,100 of the victimizations were against a person.

Figure 3 shows the distribution of alcohol and other drug-related crime by cost. Total costs for Alaska substance abuse-related crime were $93.8 million in 2003. The largest expense was law enforcement at $43.4 million, followed by correction costs at $38.2 million and legal and adjudication costs at $11.6 million. Property damage costs totaled more than $636,000 and medical costs to victims totaled $1.9 million. Medical costs are reported in this chapter for reference, but were not added to total crime-related costs to avoid double counting. Medical costs are included in the Health Care chapter.

[8] Bureau of Justice Statistics, http://www.ojp.usdoj.gov/bjs/dcf/dcb.htm, retrieved 8/17/05.

Figure 3
Distribution of Criminal Justice Costs Attributed to Alcohol and Other Drug Abuse in Alaska, 2003



Note: Figures may not add to 100% due to rounding.

Table 13 presents law enforcement costs from alcohol and other drug-related crime for Alaska during 2003. Larceny and theft accounted for the largest expense at $23 million. Burglary accounted for $5.2 million and assault for $3.7 million.

Legal costs from alcohol and other drug-related crimes for Alaska during 2003 are presented in Table 14. Larceny and theft were the largest expense at $6 million. Costs for burglary were $1.3 million, and for assault were $972,000.

Among Alaska incarceration costs in 2003, costs for inmates imprisoned for driving while intoxicated were greatest, at $10 million. This is a substantial increase from 1999, due largely to a more than doubling of the inmate population for DWI crimes. This was followed by costs for aggravated assault, at $6.4 million and homicide at $6.2 million. Drug laws were fourth, at $5.9 million, and sexual assault followed, at $4.5 million. Table 15 presents incarceration costs for Alaska during 2003 by offense.

Table 13
Law Enforcement Costs Attributed to
Alcohol and Other Drug Abuse by Offense in Alaska, 2003

Type of Offense	Alcohol	Drug	Total
Homicide*	$47,000	$25,000	$71,000
Aggravated Assault*	3,196,000	544,000	3,740,000
Sexual Assault*	512,000	47,000	559,000
Robbery*	61,0600	485,000	545,000
Burglary*	555,000	4,610,000	5,165,000
Larceny-Theft*	1,986,000	21,066,000	23,051,000
Auto Theft*	348,000	657,000	1,005,000
Driving while intoxicated	311,000	-	311,000
Liquor Laws	107,000	-	107,000
Stolen Property	-	15,000	15,000
Prostitution	-	30,000	30,000
Drug Laws	-	8,831,000	8,831,000
Total	**$7,122,000**	**$36,307,000**	**$43,430,000**

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, 2003*.

* 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.

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

Table 14
Legal and Adjudication Costs Attributed to
Alcohol and Other Drug Abuse by Offense in Alaska, 2003

Type of Offense	Alcohol-Related	Drug-Related	Total
Homicide	$11,000	$5,000	$16,000
Aggravated assault	832,000	140,000	972,000
Sexual assault	140,000	23,000	163,000
Robbery	16,000	125,000	141,000
Burglary	142,000	1,195,000	1,337,000
Larceny-theft	520,000	5,494,000	6,013,000
Auto theft	97,000	174,000	271,000
Driving while intoxicated	311,000	-	311,000
Liquor laws	107,000	-	107,000
Stolen property	-	4,000	4,000
Prostitution	-	8,000	8,000
Drug laws	-	2,299,000	2,299,000
Total	**$2,176,000**	**$9,468,000**	**$11,644,000**

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, 2003.

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

Table 15
Incarceration Costs Attributed to
Alcohol and Other Drug Abuse by Offense in Alaska, 2003

Type of Offense	Alcohol-Related	Other Drug-Related	Total
Homicide	$ 4,163,000	$2,195,000	$6,358,000
Aggravated assault	5,540,000	936,000	6,477,000
Sexual assault	4,122,000	444,000	4,566,000
Robbery	152,000	1,216,000	1,368,000
Burglary	85,000	708,000	792,000
Larceny/theft	202,000	2,110,000	2,312,000
Auto theft	47,000	93,000	140,000
Driving while intoxicated	10,074,000	-	10,074,000
Liquor laws	-	-	-
Prostitution	-	-	-
Drug laws	-	6,097,000	6,097,000
Total	**$24,384,000**	**$13,800,000**	**$38,184,000**

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.

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

This incarceration data does not include Alaska Statute Title 47 Protective Holds in Department of Corrections Facilities. Department of Corrections data does not specify the reason for each protective hold, but DOC staff indicate that the "vast majority [of protective holds] are the result of incapacitation due to alcohol use." For the years 2000-2002, there were a total of 7,920 protective holds for 3,243 individuals.[9] Estimates of the annual cost of these protective holds are not available.

Protective Services

Alcohol and other drug abuse is a primary contributor to child abuse and neglect cases in Alaska. In a study completed by the National Center on Addiction and Substance Abuse at Columbia University in 1999, it was found that parents were three times more likely to abuse their children and four times more likely to neglect their children if the parents were substance abusers. In that same study, approximately seven out of ten abused or neglected children nationwide are linked to parents who abuse alcohol and other drugs. In a study completed by the Alaska, Department of Health and Social Services, Division of Alcohol and Drug Abuse (DADA) (now part of the Division of Behavioral Health), approximately 81 percent of all Division of Family and Youth Services (DFYS) (now the Office of Children's Services) reports of child abuse involved alcohol and drug abuse.[10,11]

[9] "Analysis of Title 47 Protective Holds in Department of Corrections Facilities, CY 00-02." Undated document.
[10] *Final Report of the Alaska Criminal Justice Assessment Commission*, May 2000, published by the Alaska Judicial Council.

Methodology

Currently, there is no accurate measure of the cost to Alaska from child abuse and neglect caused by alcohol and other drug abuse. To overcome this shortfall, the research team relied on the 1999 DADA child abuse estimate and assumed that 81 percent of child protective services were attributable to alcohol and other drug abuse. These services include foster care, adoption care, residential care, and social work care through the Office of Children's Services (OCS). In addition, the Office of Public Advocacy (OPA) provides child protective services. Their services include advocacy within the legal system for children under state custody. Their total FY2003 expenditure was $13.8 million. Unfortunately, OPA was not able to provide the portion of their budget that is attributed to child protective services.

Adult protective service costs during 2003 were provided by Division of Senior and Disability Services, in the Department of Health and Social Services. The division provides assistance to adults who are unable to care for themselves, either because of physical, emotional, or mental impairment. Total expenditures on adult protective services in 2003 were $733,000. Department personnel estimate that 20 percent of all protective services cases are related to substance abuse or dependence by the care recipient. Another 20 percent of the cases the department handles are linked to substance abuse or dependence by primary caregivers or other family members.

Results

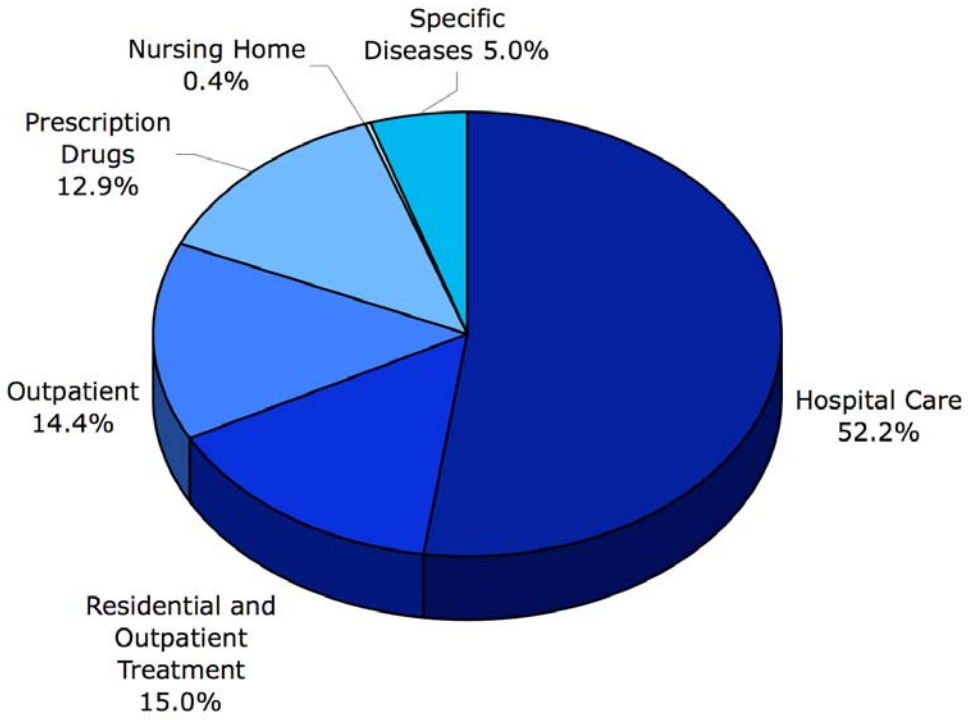
Total costs for child protective services provided by the Office of Children's Services in Alaska during fiscal year 2003 were nearly $60 million. Social work accounted for the largest expense at $18.4 million. Other expenses include $13 million for foster care services, $14 million for residential services, and $13.7 million for adoption and guardianship services. Additional program funding for child abuse prevention programs was $1.6 million.

Adult protective care services were estimated at $293,000 during 2003.

Illness and injuries stemming from alcohol and other drug abuse have significant health costs. In Alaska, health care costs related to alcohol and other drug abuse are estimated at $178 million. Alcohol and other drug-related illnesses or injuries range from acute to chronic. Acute illness includes alcohol poisoning, while chronic illness could be cirrhosis of the liver. In addition, prolonged alcohol and other drug abuse could increase the chance of other illnesses such as hypertension, diabetes, or stomach cancer.

This chapter estimates health care costs related to alcohol and other drug abuse in Alaska during 2003. Health care costs are presented for the following categories: hospital, outpatient, prescription drugs, nursing home and long term care facilities, fetal alcohol syndrome (FAS), HIV, and hepatitis B and C.

Figure 4
Distribution of Health Care Costs Related to Alcohol and Other Drug Abuse in Alaska, 2003



- Based on estimates made in this study, hospital costs from alcohol and other drug abuse-related injuries and illnesses in Alaska total $93 million in 2003. Alcohol abuse-related hospital care for medical illnesses and injuries costs accounted for $84.8 million, while other drug abuse-related costs were $8.2 million.

- Alcohol and other drug in-resident and outpatient drug and alcohol treatment costs paid through state funding were approximately $26.8 million,

- In 2003 there were and estimated 60,100 medical outpatient visits from alcohol and other drug abuse-related illness or injuries. The total cost of those outpatient visits is $25.7 million in 2003.

- Pharmaceutical and long term care costs from alcohol abuse are estimated at $23.0 million and $719,400, respectively.

- Approximately 78 HIV and HIV with AIDS cases were attributed to intravenous drug use during 2003. Total medical costs for treating these patients were $3.9 million.

- Intravenous drug abuse contributed to 344 hepatitis B and C cases in Alaska during 2003, with medical care costs of $5.1 million.

Excluded from the total values are the costs of care for individuals with Fetal Alcohol Syndrome and other Fetal Alcohol Spectrum Disorders. Data on the number of individuals living with FASD in Alaska is unavailable. However, information on the number of children born with FAS in a given year is available, as are estimates for lifetime costs of care. Estimated lifetime health care costs for the 15 FAS births in 2003 are $47.0 million.

Hospital Costs

Hospital costs from illness and injuries are a significant portion of alcohol and other drug-related health care costs. In 2003, hospital costs from illness and injuries accounted for 52 percent of total health care costs related to alcohol and other drug abuse (which totaled $178 million). Hospital costs are composed of three sources:

- Illness or injuries directly related to alcohol and other drug abuse, which might include 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

To estimate injury and illness-related hospital costs from alcohol and other drug abuse, the research team relied on results of two studies: the *National Survey on Drug Use and Health,* conducted annually by the Substance Abuse and Mental Health Services Administration in the U.S. Department of Health and Social Services; and *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992*, NIDA/NIAAA (1998).

The NSDUH showed that 10.4 percent of Alaska's population age 12 and older was dependent upon or had abused illicit drugs or alcohol in 2003, while the U.S. national average was 4.5 percent. Alaska's portion of the U.S. substance dependent or abusing population was 0.5 percent.

No Alaska-specific data exists on the number of hospital inpatient days related to drug and alcohol abuse; to estimate this number, the research team adjusted NIDA/NIAAA (1998) estimates to reflect growth in the U.S. population, and used

the factor for Alaska's alcohol and drug-dependent population (0.5 percent) to determine the number of hospital care days in the state. The NIDA/NIAAA study reported costs for non-federal and federal/veteran inpatient care, as well as costs for alcohol and other drug-related hospital and outside physician services. Cost estimates were adjusted to reflect U.S. price inflation for health care from 1992 to 2003 and Alaska health care costs. Inflation in nationwide health care costs over the time period was approximately 56 percent according to the Bureau of Labor Statistics. During fourth quarter 2003, health care costs in Fairbanks (the largest Alaska city included in 2003 American Chamber of Commerce Research Associates – ACCRA cost-of-living data) were approximately 65 percent higher than a national average. After adjusting for inflation and Alaska health care costs, estimated average cost per day for hospital care in 2003 was $2,099. The daily cost for physician care averaged $504.

Total Alaska non-federal hospital costs from illness and injury-related substance abuse were estimated by applying daily hospital costs to the estimated number of hospital care days related to alcohol and other drug abuse. Hospital costs were divided into three categories for alcohol: alcohol-specific illness, alcohol-related illness, and additional costs from co-occurring alcohol disorders. Other drug categories include other drug-specific illness, other drug-related illness, and additional days from other drug disorders.

Substance abuse-related hospital stay costs for illnesses and injuries in a veterans' or federal facility were estimated using the methodology from the NIDA/NIAAA (1998) study. In that study, veterans' and federal hospital revenues accounted for 9.5 percent of total U.S. hospital revenues. By applying this proportion to non-federal hospital costs for substance abuse, the research team estimated hospital costs for the federal facilities for Alaska during 2003.

Results

The estimated total number of hospital care days related to alcohol and other drug abuse illnesses and injuries were 32,900 in Alaska during 2003. Alcohol abuse accounted for an estimated 30,000 care days, while 2,900 were from other drug abuse. Among alcohol abusers, total hospital care days were estimated as follows: specific illnesses at 2,300, related illnesses at 22,700, and co-occurring alcohol disorders at 5,000. Estimated number of hospital care days for other drug abuse-specific illnesses was fewer than 10, while hospital care days for other drug abuse-related illnesses are not included in hospital costs to avoid double counting. These costs are presented later in this chapter. Additional days from other drug disorders were estimated at 2,900 hospital care days. Table 16 presents results on the number of care days by category for Alaska in 2003.

Table 16
Hospital Costs for Illness and Injuries
Related to Substance Abuse in Alaska, 2003

	Total Care Days	Non-Federal Hospital Costs	Veteran and Federal Hospital Costs	Total Hospital Costs
Alcohol-specific illness	2,300	$6,072,400	$514,000	**$6,586,300**
Alcohol-related illness	22,700	59,164,600	5,007,800	**64,172,400**
Additional days from co-occurring alcohol disorders	5,000	12,931,600	1,094,600	**14,026,100**
Subtotal, alcohol abuse	*30,000*	*78,168,600*	*6,616,300*	***84,784,900***
Other Drug abuse-specific illness	<10	14,800	1,300	**16,100**
Other Drug abuse-related illness	*	*	*	*
Additional days from other drug disorders	2,900	7,586,700	642,200	**8,228,900**
Subtotal, other drug abuse	*2,900*	*7,601,600*	*643,400*	***8,245,000***
Total alcohol and other drug abuse	**32,900**	**$85,770,100**	**$7,259,700**	**$93,029,900**

Source: McDowell Group, based on alcohol and drug dependent population estimates from the 2003 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 A and B, which are presented later in the chapter.*

Alaska hospital costs from alcohol and other drug abuse-related medical injuries and illness in 2003 were estimated at $93 million (Table 16). Non-federal hospitals accounted for $85.8 million, while veterans and federal hospitals were $7.3 million. Estimated hospital costs injuries and illness related to alcohol and other drug abuse were $84.8 million and $8.2 million, respectively. Alcohol-related illnesses resulted in the highest hospital costs at $64 million.

Data maintained in the Alaska Department of Health and Social Services Alaska Trauma Registry, for the years 1997 through 2001, provides an indication of the number of accidents where alcohol and/or illegal drug use, at the time of the accident, was suspected or proven. Of approximately 22,700 trauma incidents recorded in the registry, alcohol use was suspected or proven in 24 percent of the cases and illegal drug use was suspected or proven in 10 percent of the cases.

Residential and Outpatient Alcohol and Other Drug Treatment Costs

In 2003, there were 4,006 substance abuse treatment admissions in Alaska. Just over 80 percent of these admissions were for alcohol or alcohol with secondary drug issues.

There are several categories of costs related to the treatment of alcohol and drug abuse and dependence in resident and outpatient facilities. The Alaska Department

of Health and Social Services, Division of Behavioral Health, provides grant funds to organizations and agencies throughout the state in support of drug and alcohol treatment services. Specific services include rehabilitation, counseling, case management, and other types of treatment services for individuals and families. In addition, Medicaid pays for treatment in facilities within and outside of Alaska for qualifying Alaskans. Treatment can also be paid through private insurers or private parties.

Data pertaining to the state-funded treatment, both through DBH and through Medicaid, is readily available. Data on costs borne by private insurers or private parties is not available. As a result, cost estimates presented underestimate the total cost of drug and alcohol treatment.

Funding appropriated by the DBH to support alcohol and drug abuse treatment in 2003 totaled approximately $23.3 million. Payments from Medicaid for substance abuse services in 2003 totaled $3.5 million. These payments account for treatment received in substance abuse-specific treatment facilities. Not included in these treatment costs are any services for co-occurring disorders that may have been billed by mental health or other providers. Costs for lab tests for drug and alcohol screening are also excluded from this number. Because Health and Social Services provided the data on both DBH and Medicaid directly, no estimate procedures were needed.

Data from the National Survey of Substance Abuse Treatment Services (N-SSATS) provides data on the number of treatment facilities and clients in substance abuse treatment. As of March 2004, there were 2,503 clients in substance abuse treatment in 69 facilities in Alaska. Just over half of those clients (53 percent) were in private non-profit treatment facilities, 8 percent were in private for-profit facilities, 9 percent were in local government facilities, 14 percent were in federal government facilities, and 16 percent were in tribal government facilities.[12]

Medical Outpatient Costs

Another health expense related to alcohol and other drug abuse is outpatient medical treatment for a specific disorder or illness related to alcohol and other drug abuse. Examples of specific disorders could include alcohol gastritis or cirrhosis, while a related illness could be chronic pancreatitis or cancer of the esophagus.

Methodology

Like hospital costs, specific data on alcohol and other drug abuse-related medical outpatient visits was not available for Alaska. To estimate these costs, the research team applied Alaska prevalence figures to U.S. estimates for alcohol abuse-related medical outpatient visits reported in the NIDA/NIAAA (1998) study. The NIDA/NIAAA study did not report any medical outpatient visits for other drug abuse-specific disorders because of the lack of data and causal relationships needed to estimate the medical outpatient visits. Other drug abuse medical outpatient visits related to HIV and Hepatitis B and C are presented later in the chapter.

Estimated medical outpatient visits were multiplied by the average medical outpatient cost for alcohol and other drug abuse-related illnesses and injuries. Cost estimates were adjusted to reflect changes in U.S. prices from 1992 to 2003, and

[12] N-SSATS State Profile – Alaska 2004.

Alaska health care costs. Inflation was estimated at 56 percent using U.S. consumer price index for health care expenditures from the U.S. Bureau of Labor Statistics. Alaska health care cost data came from ACCRA. During fourth quarter 2003, health care costs in Fairbanks (the largest Alaska city for which data were available) were approximately 65 percent higher than the average participating city. After adjusting for inflation and cost-of-health care in Alaska, the estimated average cost for an alcohol and other drug abuse-related medical outpatient visit was $504.

Results

Alcohol abuse-related medical outpatient visits in Alaska during 2003 were estimated at $25.7 million. Alcohol-related disorders accounted for 52,200 estimated visits, while alcohol-specific illnesses had an estimated 7,900 visits. Table 17 presents estimated medical outpatient visits and costs for alcohol abuse-related disorders.

Of the total $25.7 million in alcohol abuse-related outpatient medical costs in 2003, alcohol abuse-related illness and injury contributed an estimated at $22.3 million, while alcohol abuse-specific illness and injury contributed $3.4 million.

Table 17
Medical Outpatient Visits and Costs Related to Alcohol Abuse in Alaska, 2003

	Outpatient Visits	Outpatient Costs (thousands of dollars)
Alcohol-specific	7,900	$3,373,000
Alcohol-related	52,200	22,286,000
Total, Alcohol Abuse	**60,100**	**$25,659,000**

Source: McDowell Group, based on alcohol and other drug-dependent population estimates from *National Survey on Drug Abuse and Health, 2003,* 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 and Nursing Home/Long-Term Care Costs

Although not as high as hospital and medical outpatient costs, alcohol and other drug abuse also have prescription drug and nursing home costs. Prescription drugs are prescribed for alcohol abuse-specific illnesses such as cirrhosis or alcohol-related cancer. Long-term care and nursing home costs estimates are for residents who have a primary alcohol abuse-specific diagnosis.

Methodology

Alcohol-related prescription drug costs were estimated using Alaska prevalence data on substance abuse. Prevalence estimates were applied to the total U.S. prescription drug costs related to alcohol abuse, as published in the NIDA/NIAAA (1998) study. These totals were adjusted to reflect population growth, inflation, and the cost of health care in Alaska. In the study, 2.2 percent of U.S. prescription drug costs for all illnesses were attributed to alcohol abuse. Prescription drug costs related to other drug abuse were not estimated due to the lack of national data.

Nursing home costs related to alcohol abuse were estimated using data from the Alaska Department of Health and Social Services and the NIDA/NIAAA (1998) study. HSS collects data on the number of long-term care days per care facility in

Alaska, as well as the daily rate information for each facility. There were an estimated 219,400 total nursing home and long-term treatment care bed days in Alaska for all during 2003, while cost per day of care averaged $328 per day, with a range of $213 to $625 per day. The cost of Alaska nursing home care for all illnesses and injuries during 2003 was approximately $71.9 million. Based on estimates published in the NIDA/NIAAA (1998) study, approximately 1 percent of the nation's nursing home care costs can be attributed to alcohol abuse-specific illnesses. The research team applied 1 percent to total nursing home and long term care costs in Alaska during 2003.

Results

Estimated pharmaceutical costs related to alcohol abuse in Alaska during 2003 were approximately $23.0 million. Alcohol abuse-related nursing home care days totaled 2,194 in Alaska during 2003. Costs from these visits amounted to approximately $719,000.

Fetal Alcohol Spectrum Disorders

Prenatal exposure to alcohol can cause specific birth defects which may include physical, mental, behavioral, and learning disabilities. Many children with fetal alcohol disorders are not identified until they reach school age or later. Individuals with alcohol-related effects may have difficulties with attention, memory, and problem solving. Heart, liver, and kidney defects are also common, as well as vision and hearing problems.[13] Alcohol-related effects that fall within the broad category of fetal alcohol spectrum disorders (FASD) include:

- fetal alcohol syndrome (FAS),
- partial FAS (PFAS),
- fetal alcohol effects (FAE),
- alcohol-related neurodevelopmental disorder (ARND),
- and other alcohol-related birth defects (ARBD).[14]

During the past ten years, a number of FAS prevalence rates have been established. Studies by the Centers for Disease Control and Prevention indicate a national rate from 0.2 to 1.5 cases per 1,000 births across various populations.[15] Other studies, including those focusing on specific high-risk populations such as Native Americans, other minorities and families living in poverty have indicated rates from 0.5 to 5.0 per 1,000 live births. Clearly, the data is varied and limited.

In establishing a clear number of infants born each year in the United States with Fetal Alcohol Syndrome, the CDC estimates between 1,000 and 6,000 children will be born with FAS each year – a preventable birth defect and disability.

Beginning in 1997, Alaska was one of five states comprising the CDC's Fetal Alcohol Syndrome Surveillance Network (FASSNet), a program established to provide consistent and comparable FAS prevalence rates. Participating states included Arizona, Colorado, New York, Wisconsin and Alaska (however, FAS rates for Wisconsin are not available). At 1.5 per 1,000 live births, Alaska has a significantly higher rate of children born with FAS than other states in the FASSNet program. In

[13] National Organization on Fetal Alcohol Syndrome, *What is FAS/FASD?*, www.nofas.org/faqs.aspx?id=9
[14] US Department of Health and Human Services, SAMHSA Fetal Alcohol Spectrum Disorders Center for Excellence. *The Language of Fetal Alcohol Spectrum Disorders.*
[15] *FAS: Guidelines for Referral and Diagnosis*, CDC, 2004.

addition, Alaska data showed an estimated FAS prevalence rate of 4.8 per 1,000 live births among Alaska Natives. CDC data indicates FAS prevalence rates ranging from 0.3 per 1,000 in Arizona and Colorado to 0.4 in New York.

CDC estimates that other prenatal alcohol-related conditions, such as ARND and ARBD, occur approximately three times as often as FAS.[16] Within the wider category of FASD (which would include individuals with FAS), the US is estimated to have about 10 cases per 1,000 live births. [17]

Alaska's estimated rate of all births impacted by prenatal alcohol exposure is 16.3 cases per 1,000 births, based on the 1995 to 1999 birth years. While these alcohol-related effects are closely associated with FASD, these rates are not directly comparable to national FASD rates of 10 per 1,000 live births due to differences in diagnoses and reporting at the state and national levels. Based on 16.3 cases per 1,000 and the number of live births from 1995 to 1999, approximately 160 infants are born each year in Alaska with FAS and other effects from maternal alcohol use during pregnancy. Of those, approximately 15 are born with Fetal Alcohol Syndrome (FAS).

FAS vs. FASD

It is important to remember that the information being used to determine the economic costs of care and service delivery to individuals with Fetal Alcohol Syndrome is only a small portion of the overall impact of prenatal exposure to alcohol and the resulting birth defects and disabilities. Beginning in 2000, the State of Alaska began extensive efforts to improve and expand the ability to appropriately diagnose individuals prenatally exposed to alcohol. In 2005, Alaska has a broad and regionally diverse network of diagnostic teams across the state.[18] Data collected from these teams indicate that from July 2000 through March 2005 teams have conducted 755 FASD diagnostic assessments. Of this number, 76 (10.0 percent) were diagnosed with FAS or atypical FAS; 378 (49.9 percent) were diagnosed with Static Encephalopathy; 251 (32.2 percent) were diagnosed with Neurobehavioral Disorder; and 50 (6.6 percent) were found to have no evidence of organic brain damage.

What this data indicates is that the costs associated with all alcohol-related births are much higher than those estimated just for individuals with FAS. And, as noted in the break-through research of Dr. Ann Streissguth in 1996 (Understanding the Occurrence of Secondary Disabilities in Clients with Fetal Alcohol Syndrome [FAS] and Fetal Alcohol Effects [FAE]), individuals with FAE (what is now referred to as FASD) are more likely to develop secondary disabilities and need more services than those with Fetal Alcohol Syndrome and the associated facial dysmorphology. For Alaska and the economic costs associated with all fetal alcohol spectrum disorders, the costs could be as much as 80 percent higher than indicated for FAS alone.

Economic Cost of Fetal Alcohol Syndrome

The cost of caring for and providing appropriate services to a person with FAS can be significant. These costs may include neonatal care for low birth weight to special speech therapy, behavioral management, or residential care for adults with FAS. Lifetime costs for care for children born in 2003 with FAS are estimated below. However, these costs are excluded from the total health care costs for 2003, as the component of that expenditure in 2003 alone cannot be determined.

[16] CDC, *Tracking Fetal Alcohol Syndrome*, www.cdc.gov/ncbddd/fas/fassurv.htm
[17] National Organization on Fetal Alcohol Syndrome, *What are the Statistics and Facts about FAS and FASD?*, www.nofas.org/faqs.aspx?id=12
[18] For information on available services go to http://health.hss.state.ak.us/fas/teams/default.htm).

Methodology

To estimate the economic costs from FAS, the research team first determined the number of live births with FAS in Alaska. The Alaska Department of Health and Social Services has closely monitored incidence of FAS in the state since 1998, as part of a U.S. Centers for Disease Control (CDC) monitoring program called the Fetal Alcohol Syndrome Surveillance Network (FASSNet), the ongoing Alaska FAS Surveillance Project and the Alaska Birth Defects Registry. The development of 13 community-based FASD diagnostic teams across Alaska has also assisted in the collection of data related to both FAS and other alcohol-related disabilities included in the FASD umbrella definition.

The Alaska FAS Surveillance Project data collection system is based on reports to the Alaska Birth Defects Registry, and uses medical chart data points to identify children with FAS or other prenatal alcohol-related conditions. DHSS staff consider the surveillance program to be highly rigorous. Alaska clinicians and case workers use a diagnostic process developed by researchers at the University of Washington Fetal Alcohol Syndrome Diagnostic and Prevention Network. Reporting of birth defects to the state registry is mandated by Alaska law. While Alaska's FAS surveillance system is believed to capture the majority of prenatal alcohol-related cases, it is possible that underreporting could make the incidence rate even higher.

For birth years 1995 to 1999, the incidence rate of FAS in Alaska is 1.5 per 1,000 live births. [19] This was the highest rate of the five states that were involved in developing the CDC FASSNet system. (The lowest rate was 0.3 FAS cases per 1,000 births.) However, the incidence of all prenatal alcohol-related conditions, including such conditions as alcohol-related birth defects (ARBD) and alcohol-related neurodevelopmental disorder (ARND), as well as FAS, is 16.3 per 1,000 live births. This incidence rate is assumed to be consistent in birth year 2003.

To estimate FAS costs in Alaska, the research team relied on data published in Health Professions Education Partnership Act of 1998 (Senate Bill 1754). The cost of treating an individual with FAS over his or her lifetime was estimated to be at least $1.4 million in 1995. These costs could include neonatal intensive care, medical and surgical services (not related to neonatal care), special speech therapy, behavioral management, and residential care. Medical and surgical service might include rectifying or monitoring hearing loss or cleft palate surgery. Residential services include special education, home care, speech therapy or institutional care. The 1995 data was adjusted for inflation using the Bureau of Labor Statistics Consumer Price Index for medical care. Additionally, costs of providing care were adjusted by the Alaska differential for cost of living (65 percent in 2003). The resulting total lifetime costs (in 2003 dollars) for providing services to an individual with FAS are estimated at $3.1 million.

The total cost for providing services to an individual with FAS born in Alaska during 2003 was estimated by multiplying the lifetime costs by the number of FAS births during that period.

Results

Table 18 presents estimated costs for FAS births in Alaska during 2003. During that period, Alaska had about 15 FAS births. Total economic costs resulting from services to all individuals with FAS in Alaska totaled approximately $47.0 million.

[19] *Susan Merrick, FAS Surveillance Project Manager, Alaska Department of Health and Social Services, personal communication, July 2005.*

Table 18
Lifetime Costs of Medical and Residential Services for Children Born with FAS in 2003

	Incidence and Costs
Alaska births in 2003	10,084
FAS incidence per 1,000 live births	1.5
FAS births	15
Lifetime FAS cost	**$47,037,000**

Source: Birth data from the Alaska Bureau of Vital Statistics. McDowell Group, based on FAS data from Alaska Department of Health and Social Services; and Health Professions Education Partnership Act of 1998, S. 1754, 108d Congress (1998).

AIDS and HIV Costs

Intravenous drug abuse among individuals who share unhygienic needles is a significant cause of AIDS and HIV. Although AIDS and HIV no longer require extensive inpatient medical care, both result in high medical expenses worth measuring separately from the hospital and outpatient costs presented above (NIDA/NIAAA, 1998).

Methodology

The State of Alaska Department of Health and Social Services Epidemiology Section compiles data on HIV and AIDS diagnoses in the state. While the section does not track individuals with HIV and/or AIDS diagnoses, it does compile cumulative counts of the number of diagnoses in the state since the first known HIV diagnosis. Of the known cases of HIV and/or AIDS, 13 percent are associated with intravenous drug use. In addition, the Epidemiology Section tracks known deaths. The section does not track the whereabouts of diagnosed individuals, and as a result no data exists regarding the number of HIV/AIDS patients who may have moved away from Alaska. For the purposes of these estimates the research team assumes that 100 percent of diagnosed individuals remain in the state, though it is recognized that this may not be the case. Additionally, we assume that 100 percent of the known deaths occurred among individuals who had been diagnosed with AIDS, although data is not available on specific cause of death.

Two steps were used to calculate other drug-related AIDS and HIV medical costs. First, AIDS and HIV costs were estimated by applying annual medical expenses from the NIDA/NIAAA (1998) study to the number of known Alaska AIDS and HIV patients in 2003. Cost data was adjusted for inflation and the cost of health care in Alaska using the same sources and methods previously reported. Annual medical expenses for each Alaska HIV patient were estimated at $30,600, while medical expenses for each AIDS patient were $68,200.

The second step was to determine the percent of AIDS and HIV medical expenses that can be attributed to other drug abuse. The Epidemiology Section reported that approximately 13 percent of AIDS and HIV cases were attributed to intravenous drug abuse. This attribution rate was then applied to medical costs for AIDS and HIV patients.

Based on the data from the Alaska Division of Public Health, a total of 597 individuals with HIV or HIV/AIDS lived in Alaska in 2003. Of those, an estimated

295 had HIV without AIDS and 302 had HIV with AIDS. An estimated 13 percent of these individuals contracted HIV through intravenous drug use.

Although the following cost estimates are limited only to those caused by intravenous drug abuse, alcohol abuse is a risk factor in contracting AIDS and HIV from unprotected sex.

Results

An estimated 78 HIV and HIV with AIDS cases in Alaska are attributable to intravenous drug use. Medical costs for treating these patients in 2003 were approximately $3.8 million. Table 19 presents the number of HIV and HIV with AIDS cases and annual medical expenses for these cases.

Table 19
Annual Medical Expenses per AIDS and HIV Case Due to Other Drug Abuse in Alaska, 2003

	Annual Medical Expenses per Patient	Number of AIDS and HIV Patients	Total Costs due to Drug Abuse
HIV Positive	$30,600	38	$1,172,000
AIDS	$68,200	39	$2,678,000
Total	**n/a**	**78**	**$3,850,000**

Source: McDowell Group, based on AIDS and HIV case numbers from Alaska Department of Health and Social Services, 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

Intravenous drug abuse and sharing unhygienic needles are leading contributors to hepatitis B and C in Alaska. In fact, intravenous drug use is the largest contributor to hepatitis C. Hepatitis B and C have been linked to cirrhosis and primary hepatic cancer.

Methodology

Approximately 12 percent of hepatitis B cases and 36 percent of hepatitis C cases can be attributed to intravenous drug abuse (NIDA/NIAAA, 1998). According to the Alaska Department of Health and Social Services, there were 8 cases of hepatitis B and 952 cases of hepatitis C reported in the state in 2003. Hepatitis B infection is accompanied by acute illness, and reported cases in 2003 likely accurately represent the number of people seeking care for hepatitis B in that year. However, hepatitis C is not necessarily accompanied by acute symptoms, though long-term costs of care are generally far more significant. Due to limited data on the disease stage[20] and how many patients were cured, the report estimates the cost of treating only those hepatitis C cases reported by the Alaska Division of Public Health in 2003.

Medical expenses for hepatitis B and C were presented in the NIDA/NIAAA (1998) study by stage. Since data is limited for hepatitis B and C in Alaska, medical expenses from the NIDA/NIAAA study were averaged. Adjusting for inflation and Alaska health costs, the annual average medical expense is $3,400 for treating hepatitis B and $14,900 for hepatitis C. These costs were applied to all other drug

[20] Incubation, acute, and persistent are the three stages of hepatitis.

abuse-related hepatitis B and C cases reported in 2003 by the Division of Public Health. However, it should be pointed out that most hepatitis B and C cases required only monitoring of the disease, which is relatively inexpensive. Hepatitis B cases generally require intensive treatment but limited long-term care, while hepatitis C cases may require low levels of treatment over an extended time, leading toward intensive treatment in later stages of the disease. The study provides an approximate cost of treating hepatitis B and C cases that were newly reported during 2003.

Results

In Alaska, intravenous drug abuse attributed to one hepatitis B case and 343 hepatitis C cases during 2003. Total annual medical costs for intravenous drug abuse-related hepatitis B were $3,000. Costs associated with the treatment of hepatitis C attributed to intravenous drug abuse were an estimated $5.1 million. Table 20 presents total medical costs and number of cases for hepatitis C in Alaska during 2003.

Table 20
Annual Medical Expenses per Hepatitis C Case
Due to Drug Abuse in Alaska, 2003

	Annual Medical Expenses per Patient	Number of Patients	Total Costs due to Drug Abuse
Hepatitis C	$14,900	343	$5,114,000

Source: McDowell Group, based on hepatitis B and C case numbers from the Alaska Department of Health and Social Services; and annual medical expense data from *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (NIDA/NIAAA, 1998).
Hepatitis B costs were not included in the table because costs were insignificant compared to Hepatitis C ($3,000).

A significant percentage of individuals with serious mental illness also are users of or dependent upon drugs and/or alcohol. Similarly, rates of serious mental illness among individuals who experience drug and/or alcohol dependence or abuse are significantly higher than among the general population. Research also indicates that adults with co-occurring serious mental illness (SMI) and substance abuse disorders are more likely to receive treatment for their mental illness than for their substance dependence.

The State of Alaska is currently undergoing a process to integrate substance abuse treatment and mental health services in the state so that individuals in need of care can receive coordinated treatment for any co-occurring disorders. In addition, the state introduced an initiative in 2004 called Bring the Kids Home. The purpose of BTKH is to support the development of in-state residential psychiatric treatment capacity for Alaskan children and youths.

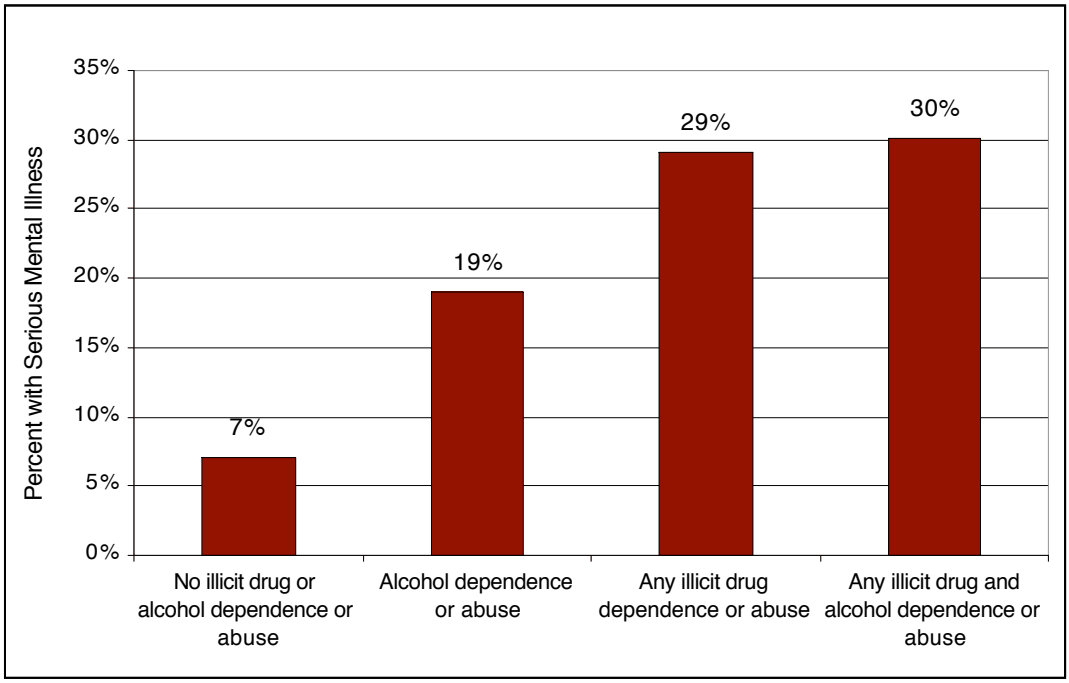
The U.S. Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Applied Studies published a report in 2004 on *Serious Mental Illness and Its Co-Occurrence with Substance Use Disorders* for the year 2002. The report provides data on co-occurrence of mental illness and substance dependence or abuse, as well as comparative data on the rates of treatment for individuals with these conditions, alone or in combination.

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

The prevalence of serious mental illness (SMI) among adults who have a substance use disorder is significantly higher than among adults who do not. Nineteen percent of adults who are dependent upon or who abuse alcohol had SMI in 2002, as did 29 percent of those with illicit drug dependence or abuse, and 30 percent of those with both drug and alcohol abuse or dependence. By contrast, only 7 percent of adults who have no substance use disorder experienced SMI (see Figure 5).

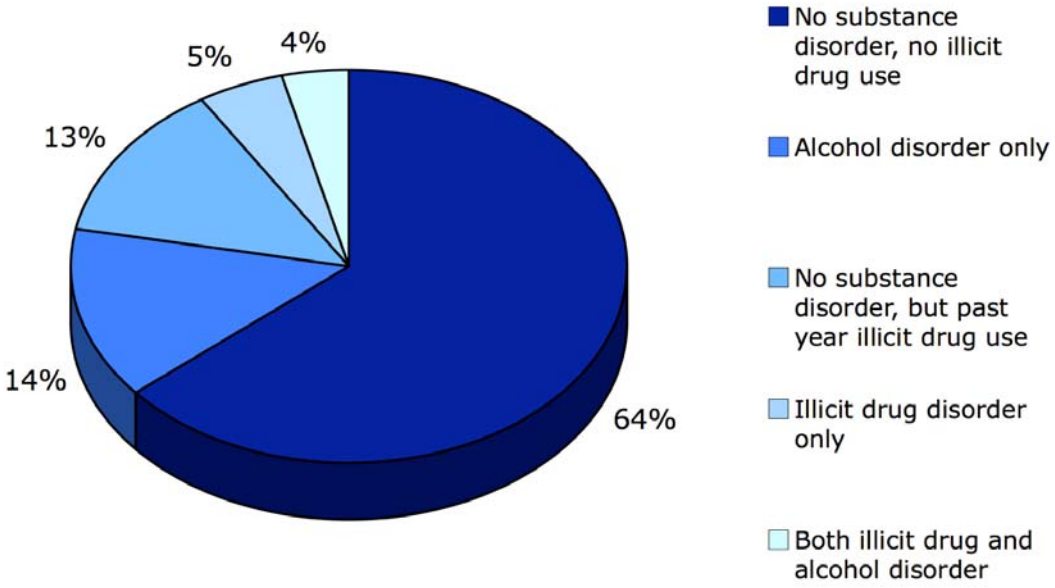
This data clearly shows that serious mental illness is much more likely to occur among the drug and/or alcohol dependent population. Likewise, among the population of adult Americans who experience serious mental illness, significant percentages of individuals are likely to have a drug and/or alcohol dependency or abuse. Of 17.5 million adults aged 18 or older who experienced SMI in 2002, 14 percent had an alcohol disorder only, 13 percent had no substance abuse disorder but had nevertheless used illicit drugs in the past year, 5 percent had an illicit drug disorder only, and another 5 percent had both illicit drug and alcohol disorders. In total, 46 percent of the population with SMI had drug or alcohol disorders or abuse, alone or in combination (see Figure 6.)

Figure 5
Serious Mental Illness among Adults Aged 18 or Older, by Substance Dependence or Abuse, 2002



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2002.

Figure 6
Substance Use Disorder Among Adults With Serious Mental Illness, 2002



Source: SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2002.

These data clearly show that there is a strong correlation between alcohol and or substance dependence and serious mental illness.

The analysis of the use of treatment services for either SMI or for substance dependence in the SAMHSA report revealed interesting trends in the treatment services accessed by affected individuals. Individuals with SMI only, and no substance abuse disorder, were most likely (48 percent) to receive mental health treatment. Among those individuals with SMI and substance dependence, 46 percent received only mental health treatment, while 14 percent received only specialty substance use treatment. Only 12 percent received treatment for both SMI and a substance abuse disorder. In addition, adults with SMI co-occurring with illicit drug dependence or abuse were more likely to receive mental health treatment (54 percent) than those adults who had SMI co-occurring with alcohol dependence or abuse (43 percent).

Adults who had co-occurring SMI and substance dependence or abuse were more likely to receive specialty substance use treatment than adults with substance disorders but no SMI (14 versus 5 percent).

In 1999, the Gallup Organization conducted a household telephone survey in Alaska and determined that 9.7 percent of the population aged 18 and over abused or was dependent on alcohol. Applying this percentage to the 2002 adult population in Alaska of 448,000 would result in an estimated 43,500 alcohol dependent adults in that year. Based on the co-occurrence rates presented in the SAMHSA (2002) study, this means an estimated 8,300 Alaskans had co-occurring alcohol dependence or abuse and serious mental illness in 2002. However, the Gallup survey did not assess the percentage of Alaskans whose alcohol dependence was accompanied by illicit drug dependence or abuse. It is reasonable to assume that some of the 8,300 alcohol dependent Alaskans also had illicit drug dependence or abuse. The prevalence of SMI among adults with both alcohol dependence and illicit drug use is significantly higher (30 percent versus 19 percent for alcohol only), so it is likely that the number of Alaskan adults with co-occurring SMI and alcohol and/or illicit drug dependence or abuse is even higher.

Bring the Kids Home Initiative

Like adults, children and youth experience co-occurring mental and substance abuse disorders. According to the SAMHSA Report to Congress, 2002, researchers have found a link between substance abuse disorders and behavioral and mental/emotional disorders in youth. The 2001 National Household Survey on Drug Abuse found that 26 percent of 12 to 17-year-olds who had used illicit drugs in the past year had also received treatment or counseling for behavioral or mental health issues. This compared to only 16 percent of youths who had not used illicit drugs (SAMHSA, 2002).

In Alaska, there are a limited number of residential mental health treatment facilities for children and youth. When children and youth need intensive mental health treatment they often must travel to facilities outside of the state. However, according to the Alaska Division of Behavioral Health and the Mental Health Trust Authority, out-of-state treatment may not be as beneficial as services delivered close to home. Possible disadvantages of out-of-state services may include less therapeutic benefit for children and their families, longer lengths of stay and higher risk of readmission, and transitional difficulties.

To address the high rates of out-of-state institutionalization, the State of Alaska launched the "Bring the Kids Home Initiative" to support the development of in-state infrastructure and treatment opportunities for youth and children. Since the program inception in late 2004, several steps have been taken to position the state to achieve these goals. Three workgroups have been established, including one that is working to identify means to support the establishment of services and service providers in Alaska and one that is identifying ways to support the development of a treatment professional workforce. A third work group, made up of three mental health clinicians, reviews the cases of children who are under consideration for out-of-state treatment, and tries to redirect cases within the state whenever clinically possible and appropriate.

Prior to the launch of the BTKH initiative, Alaska had seen a stark increase in the number of children in out-of-state residential psychiatric treatment centers (RPTCs). There was a 200 percent increase in the number of children covered by Medicaid who received treatment in an out-of-state RPTC from 2000 to 2004. This was accompanied by a 280 percent increase in the cost of those services, from $9.9 million in 2000 to $37.8 million in 2004.

Preliminary fiscal year 2005 data, however, shows that more children were able to receive treatment in Alaska facilities. The number of children receiving services in out-of-state treatment facilities through Medicaid decreased from the previous year, and the percentage of Alaskan children receiving treatment services in-state rose to 29 percent from 22 percent the previous year. In addition, 71 children who were in out-of-state facilities have been transferred to treatment facilities within Alaska since the program inception. Additionally, there was a drop in out-of-state spending on RPTC care.

Table 21
Medicaid Residential Treatment Care Expenditures,
State Fiscal Years 2001 to 2005

	SFY01	SFY02	SFY03	SFY04	SFY05 preliminary
In-State	8,243,000	9,230,000	10,093,000	11,532,000	12,659,000
Out-of-State	17,609,000	21,752,000	30,915,000	37,794,000	34,044,000
Total	**$25,852,000**	**$30,982,000**	**$41,008,000**	**$49,326,000**	**$46,703,000**

Source: Division of Behavioral Health, "Bring the Kids Home Indicators: Baseline Data State Fiscal Years 1998-2004," May 2005; and "Bring the Kids Home Indicators: SFY05 Supplemental Data—Preliminary," August 2005. Note: Claims for state fiscal year 2005 are still being processed; final numbers will likely be higher.

While the state continues to process insurance claims for FY05 treatment services, HSS staff indicated that the trends reflected in the preliminary data are likely representative of overall change. While expenditures for the program were modest in FY05 ($100,000), HSS staff said awareness of the BTKH initiative in the treatment community likely drove some of the shift toward Alaska-based treatment. The BTKH initiative has a budget of $2.4 million for FY06.

Needy Alaskans who qualify for public assistance receive cash and food stamps and other social services from the state. A portion of the public assistance expenditures can be attributed to alcohol and other drug abuse. As noted earlier in the report, alcohol and other drug dependence can result in reduced income, trouble finding and holding a job, or even a disability, all of which may qualify the individual for public assistance. This chapter looks briefly at the economic costs of alcohol and other drug abuse-related public assistance.

Methodology

Different methods were used to estimate the costs of alcohol and drug abuse-related public assistance at the state and federal levels. At both levels, only administrative costs of programs were considered as public assistance payments are a redistribution of income and not an actual cost to society.

At the federal level, there are two sources of public assistance costs. The first is former Supplemental Security Income (SSI) and Old Age, Survivors, and Disability Insurance (OASDI) recipients. National administrative cost figures were used to estimate the Alaska-specific portion of the federal programs, using the assumption that costs were proportional to the number of recipients. NIDA/NIAAA (1998) attribution rates were used to estimate the proportion of total costs that are attributable to drug and alcohol abuse. For SSI and OASDI recipients, 1.7 percent of the cases were related to alcohol and other drug abuse.

At the state level, public assistance programs include the Alaska Temporary Assistance Program (ATAP) and food stamp programs, and other programs such as energy assistance and child care assistance. Again, NIDA/NIAAA (1998) attribution rates were used to estimate the cost attributable to substance abuse.

For ATAP and other state programs, 4.1 percent of the cases were related. Because Alaska's dependency rates are more than twice national rates, attribution rates published in the NIDA/NIAAA (1998) study likely provide a conservative estimate of Alaska's true administration costs from public assistance. However, the lack of Alaska attribution rates for alcohol and other drug abuse-related public assistance necessitates the use of these national attribution rates published in the NIDA/NIAAA study.

Results

Administration costs from alcohol and other drug abuse-related public assistance was approximately $4.1 million in Alaska during 2003. The largest contributor was administration of payments for Alaska Temporary Assistance Program, food stamps and other state-administered assistance programs at $4.0 million, while administrative costs from former OASDI and SSI recipients totaled $170,000.

The cost of underage drinking in Alaska is a component of many of the alcohol and drug abuse-related costs already identified in this study. However, it is informative to examine specifically underage drinking costs, to place such costs in perspective relative to overall costs associated with alcohol and other drug abuse in Alaska.

This study did not include research focused on underage drinking costs. However, data from other sources is available. The Pacific Institute for Research and Evaluation (PIRE) has produced national and state-level estimates of the cost of underage drinking. PIRE data indicates that medical care costs and loss of work costs in Alaska totaled $128 million in 2001. PIRE also placed "pain and suffering" costs at $353 million. The following table provides more detail on specific sources of underage drinking costs in Alaska.

Table 22
Costs of Underage Drinking in Alaska, by Problem, 2001

	Total Costs (in millions)
Youth Violence	$329.7
Youth Traffic Crashes	77.7
High-Risk Sex, Ages 14-20	13.9
Youth Property Crime	7.6
Youth Injury	26.9
Poisonings and Psychoses	2.6
FAS Among Mothers Age 15-20	3.3
Youth Alcohol Treatment	18.9
TOTAL	$480.7

Source: Pacific Institute for Research and Evaluation (PIRE), March 2004. Posted at http://www.udetc.org/UnderageDrinkingCosts.asp

As indicated above, many of these costs have been captured in other sections of this report. The largest component of underage drinking costs, as measured by PIRE, are pain and suffering-related costs, which are not addressed at all (for adults or youth) in this report. While it is likely that some of the direct medical and work loss costs identified in the PIRE study are not reflected in this report, the potential for double-counting is high, therefore none of the costs reported in Table 22 are added to the grand total costs related to alcohol and drug abuse in Alaska, as measured in this study. Research beyond the scope of this study would be required to identify specific components of costs reported in the PIRE report that are not captured in the McDowell Group report.

Although this report concentrates on quantifying the costs of alcohol and other drug abuse, there are some measurable economic benefits associated with the sale of alcohol. The most obvious benefit is employment. Jobs related to alcohol sales include manufacturing, wholesale trade and retail trade. Alcohol excise tax revenues go into Alaska's unrestricted general-fund budget. Other benefits, including indirect employment impacts from alcohol manufacturing and sales, are more difficult to measure and beyond the scope of this study. Earnings from these jobs help employ other residents who are not directly linked to the alcohol industry.

This chapter looks briefly at the direct employment benefits from the alcohol industry and discusses the excise tax collected from the sale of alcohol beverages.

Methodology

To measure the employment and earnings related to manufacturing and sales of alcohol, the research team relied on data published in the 2003 Employment and Earnings Report by Alaska Department of Labor and Workforce Development, Research and Analysis Division. Employment and earnings data was collected for the following industries:

- Breweries & Wineries (NAICS 31212, 31213)
- Wholesale trade for beer, wine, and distilled beverages (NAICS 4248)
- Beer, Wine, Liquor stores (NAICS 4453)
- Drinking places, Alcoholic (NAICS 7224)

Total tax revenue collected in FY2004 from the sale of alcohol beverages was published in the Tax Division Annual Report of Division Operations, by the Alaska Department of Revenue. Per gallon tax rates on alcoholic beverages were increased, on October 1, 2002, from $0.35 to $1.07 for beer, $0.85 to $2.50 for wine and $5.60 to $12.80 for liquor. As of that same date, 50 percent of the revenue is deposited in the Alcohol and Other Drug Abuse Treatment and Prevention Fund.

Results

Table 22 presents employment and earnings for alcohol-related commerce and manufacturing industries in Alaska during 2003. Total employment related to the sale of alcoholic beverages in Alaska was approximately 3,000 jobs with earnings of $62 million. Drinking establishments accounted for the most employment at approximately 1,800 jobs with $26 million in payroll.

Table 23
Employment and Earnings for Alcohol-Related Industries in Alaska, 2003

Industry	Employment	Earnings (millions)
Breweries and Wineries	90	$3.0
Wholesale trade	413	17.1
Retail trade: Liquor stores	672	15.9
Retail trade: Drinking places	1,815	25.8
Total	**2,990**	**$61.8**

Source: *2003 Employment and Earnings Report*, Alaska Department of Labor and Workforce Development, Research and Analysis Division.

Total tax revenue collected from the sale of alcohol beverages in Alaska was $32.7 million during FY 2004. This includes $14.1 million collected on sales of 1.1 million gallons of liquor, $4.3 million collected on sales of 1.7 million gallons of wine, and $14.3 million collected on sales of 14.7 million gallons of beer. Contributions of unrestricted revenue to the General Fund totaled $16.4 million, with an equal amount contributed to the fund for alcohol and drug abuse treatment programs.

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