The Economic Costs of Drug Abuse in Alaska, 2016 Update

Prepared for:

Alaska Mental Health Trust Authority

March 2017

McDowell GROUP

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Executive Summary

The economic costs of drug abuse in Alaska total billions of dollars each year. Costs to society include increased health care costs, increased criminal justice system costs, lost or reduced workplace productivity, greater spending on public assistance and social services, and a range of other impacts. This study measures these and other tangible economic costs associated with drug abuse.

The misuse of drugs also has a wide range of intangible costs, in terms of diminished quality of life, pain and suffering of crime victims and others, and a spectrum of additional qualitative costs. While several measures of these types of costs are described in this report, calculating the full extent of intangible human costs resulting from drug abuse is beyond the scope of this study.

The Alaska Mental Health Trust Authority contracted with McDowell Group to update its series of prior studies on the economic costs of drug abuse in Alaska. A variety of methodologies, data sources, and modeling assumptions were required for this analysis. While some trend analysis may be possible for specific measures of economic impact, the quality of data and modeling techniques have improved in recent years. As a result, caution is warranted in making detailed comparison between this study and previous efforts to quantify the economic costs of drug abuse in Alaska.

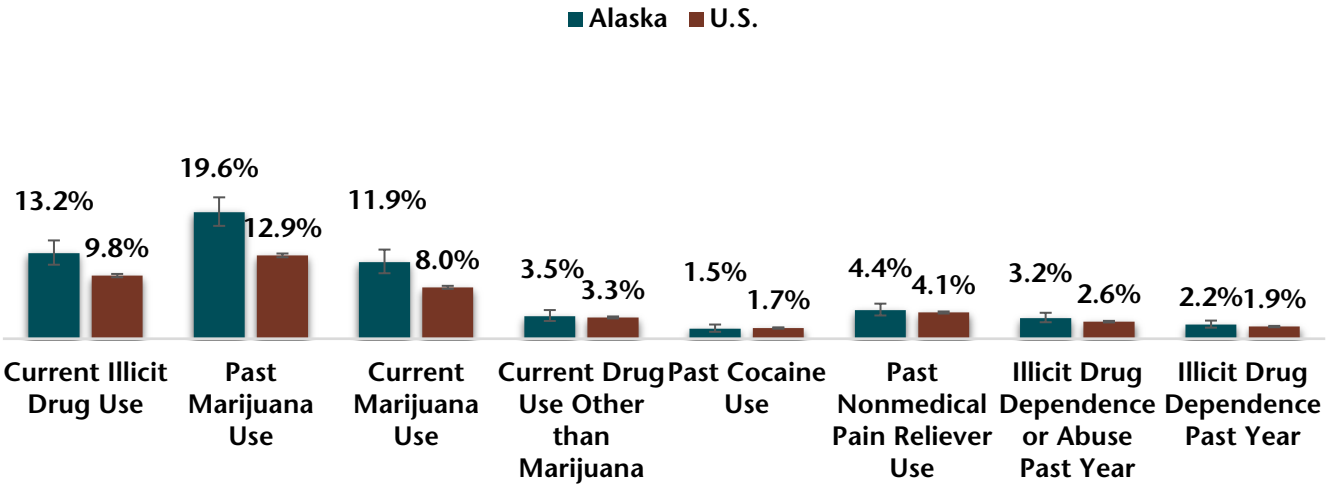
Illicit Drug Use

In 2013-2014, approximately 77,000 Alaskans (13 percent of those 12 or older) had used illicit drugs in the past month, including 69,000 who consumed marijuana and 20,000 who used other illicit drugs (such as cocaine). Further, 26,000 Alaskans (4 percent of those 12 or older) used pain relievers for non-medical purposes in the previous year. Two percent of all Alaskans 12 or older (13,000) were dependent on illicit drugs. One in five Alaskans age 12 and older consumed marijuana in the previous year.

Marijuana consumption was the only drug use in Alaska that was statistically different from the country in 2013-2014. Twelve percent of Alaskans used marijuana in the *past month* compared to 8 percent nationally, and 20 percent of Alaskans used marijuana in the *past year* compared to 13 percent nationwide.

(See figure next page.)

Figure 1. Drug Consumption Patterns Prevalence Estimate Percentages, Alaska and U.S., Age 12+, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

Economic Costs of Drug Abuse in Alaska

In 2015, the estimated cost of drug abuse to the Alaska economy totaled just under $1.22 billion. These costs are borne by state and local governments, employers, and residents of Alaska.

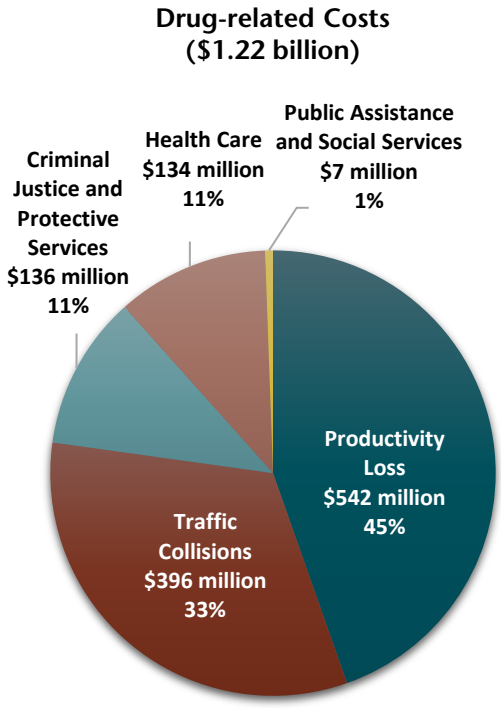
Productivity losses are the largest component of these annual economic costs (45 percent or $542 million).

Table 1. Estimated Annual Drug-related Economic Costs to Alaska, 2015

Cost Category	Drug-related Costs	% of Total
Productivity Loss	$542 million	45%
Traffic Collisions	$396 million	33
Criminal Justice and Protective Services	$136 million	11
Health Care	$134 million	11
Public Assistance and Social Services	$7 million	1
Total	**$1,215 million**	**100%**

Note: Due to rounding, some columns may not sum to the total.
Source: McDowell Group calculations.

Figure 2. Estimated Economic Costs of Drug Abuse, by Category, 2015



Source: McDowell Group calculations.

Categories of Economic Costs

PRODUCTIVITY LOSSES

Drug abuse results in lost productivity when it prevents people from being employed or performing household services such as child care. Lost productivity occurs because of premature death, reduced efficiency through physical and/or mental impairment, employee absenteeism, incarceration for criminal offenses, and medical treatment or hospitalization.

In 2015, drug abuse resulted in $542 million in lost productivity in Alaska.

Table 2. Estimated Annual Drug-related Productivity Losses, Alaska, 2015

Productivity Category	Drug-related Costs	% of Total
Premature death (primary diagnosis)	$391.4 million	72%
Incarceration	$29.7 million	5
Diminished productivity	$119.3 million	22
Drug abuse treatment	$1.4 million	0.3
Medical conditions	$0.6 million	0.1
Total	**$542.4 million**	**100%**

Due to rounding, some columns may not sum to total.
Source: McDowell Group calculations.

Traffic Collisions

Substance abuse plays a major role in vehicle traffic collisions in Alaska. In 2011 (most recent available data), 1,680 people were involved in 704 impairment-related collisions in Alaska. Of these, 32 people died, 299 had major injuries, and 63 had minor injuries. Of the 704 impairment-related collisions, 54 percent had property damage only. Direct costs of impairment-related traffic collisions were $172.5 million. However, there was another $818.0 million in costs for lost life and reduced quality of life, resulting in total traffic crash costs related to substance abuse of approximately $990.5 million. Approximately 40 percent of the traffic collisions (or $396.2 million in costs) were related to drug abuse.

Table 3. Estimated Annual Impairment-caused Traffic Collision Costs, Alaska, 2011

Cost Category	Impairment-Caused Traffic Collision Costs	% of Total, Excluding Quality-Adjusted Life Years	% of Total, Including Quality-Adjusted Life Years
Medical	$38.5 million	22.3%	3.9%
Emergency services	$0.02 million	0.1	0.02
Market productivity	$81.4 million	47.2	8.2
Household productivity	$22.6 million	13.1	2.3
Insurance administration	$9.3 million	5.4	0.9
Workplace costs	$1.6 million	1.0	0.2
Legal costs	$12.8 million	7.4	1.3
Congestion costs	$1.3 million	0.8	0.1
Property damage	$4.9 million	2.8	0.5
Direct Costs	**$172.5 million**	**100.0%**	**-**
Quality-adjusted life years	$818.0 million	-	82.6
Total, including quality-adjusted life years	**$990.5 million**		**100.0%**
Estimated portion attributed to drugs (40 percent of total)	**$396.2 million**		

Note: Due to rounding, some columns may not sum to total.
Source: McDowell Group calculations.

Criminal Justice and Protective Services

A significant number of crimes can be directly attributed to drug abuse, for example driving under the influence, sale of illegal drugs, and many cases of assault, theft, and other violent and nonviolent crimes. The cost of these crimes includes criminal justice system costs (police protection and law enforcement, legal and adjudication, and incarceration), and the costs to crime victims (both tangible and intangible). Additionally, a portion of child protective services are associated with drug abuse.

In 2014, there were 9,572 arrests/offenses and 12,237 crime victims attributed to drug abuse in Alaska. These arrests/offenses represented 27 percent of all offenses in Alaska, and affected 29 percent of all crime victims. The estimated cost of drug abuse to the criminal justice system, including tangible costs (such as medical care costs, lost earnings, and property loss/damage to victims and Child Protective Services in Alaska) was $136.4 million. Victim intangible costs (such as pain and suffering, decreased quality of life, and psychological distress), added another $175.4 million for a total of just under $311.8 million.

Table 4. Summary of Estimated Annual Drug-related Criminal Justice and Protective Services Costs, Alaska, 2015

Cost Category	Drug-related Costs	% of Total
Criminal justice system	$73.4 million	54%
Crime victim tangible costs	$28.5 million	21
Child protective services	$34.5 million	25
Total	**$136.4 million**	**100%**
Crime victim intangible costs	$175.4 million	
Total, incl. intangible costs	**$311.8 million**	

Source: McDowell Group calculations.

HEALTH CARE

A wide variety of health care costs are associated with drug abuse, including hospitalization from injuries and illness, residential and outpatient treatments costs, and the cost of treating human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS), and hepatitis C. Annual drug-abuse-related health care costs totaled $133.7 million in 2015.

Table 5. Summary of Estimated Annual Drug-related Health Care Costs, Alaska, 2015

Cost Category	Drug Related Costs	% of Total
Medical inpatient	$14.6 million	11%
Medical ED	$3.1 million	2
Alcohol/Drug treatment	$23.5 million	18
HIV/AIDS	$2.5 million	2
Hepatitis C	$90.1 million	67
Total	**$133.7 million**	**100.0%**

Note: Due to rounding, some columns may not total.
Source: McDowell Group calculations.

PUBLIC ASSISTANCE AND SOCIAL SERVICES

Drug abuse can result in greater demand for public and social services. For example, problems with drugs can reduce personal income due to mental and physical impairment or inability to hold a job. Drug abuse may also lead to disability. Some or all these conditions may qualify individuals for publicly funded social programs like food stamps, public assistance, and vocational rehabilitation. Based on prevalence rates, federal and state social welfare costs paid to support people impacted by drug abuse totaled $7.3 million annually.

Table 6. Estimated Annual Drug-related Social Welfare Costs, Alaska, 2015

Cost Category	Drug Related Costs	% of Total
Federal social welfare	$4.7 million	64%
State social welfare	$2.6 million	36
Total	**$7.3 million**	**100.0%**

Source: McDowell Group calculations.

Introduction

The Alaska Mental Health Trust Authority contracted with McDowell Group to update prior studies on the economic costs of drug abuse in Alaska. Drug abuse impacts Alaska's economy in a variety of ways. It can lead to greater health risks and death, impaired physical and mental abilities, crime and incarceration, greater reliance on public assistance, and several other adverse effects. This study addresses tangible economic costs of drug abuse, such as lost earnings among the affected population and costs of government programs. Quality of life and other qualitative impacts of drug abuse, while substantial, are not included in this report.

Report Organization

This report contains:

- *Chapter 1: Drug Consumption in Alaska*, including state comparisons and co-occurrence of drug abuse disorders and mental illness.
- *Chapter 2: Productivity Losses*, including productivity loses due to death, diminished productivity, incarcerations, and impatient treatment or hospitalization as a result of drug abuse.
- *Chapter 3: Traffic Collisions,* including number of, and estimated costs due to, substance abuse-related traffic collisions
- *Chapter 4: Criminal Justice and Protective Services*, including law enforcement, legal and adjudication, incarceration, and victimization costs.
- *Chapter 5: Health Care*, including hospital, residential and outpatient drug treatment, AIDS and HIV, and Hepatitis B and C costs.
- *Chapter 6: Public Assistance and Social Services*, including public assistance in the form of cash, food stamps, child care assistance, or other social services provided by the state and federal government.
- *Chapter 7: Implications for Drug Abuse Impacts on the State General Fund Budget*, including health-care, criminal justice, corrections, and other related costs.
- References

Methodology, Definitions, and Data Sources

A variety of methodologies, data sources, and modeling techniques were required for this analysis. Methods and sources relevant to each chapter of the study are described below.

Chapter 1: Drug Consumption in Alaska

Data were analyzed from one primary source:

1. **National Survey of Drug Use and Health (NSDUH):** This dataset includes national and state-level data on drug use and mental health within the U.S., including prevalence estimates, trends in illicit drug consumption, levels of consumption, demographic characteristics of illicit drug consumers, and national

and state consumption comparisons. For an adequate sample, Alaska results were pooled from surveys conducted in 2013 and 2014. Some definitions used in NSDUH analysis include:

a. **Illicit Drugs** — Marijuana/hashish, cocaine (including crack), inhalants, hallucinogens, heroin, or prescription-type drugs (i.e., pain relievers, tranquilizers, stimulants, or sedatives) that were nonmedical.
b. **Nonmedical Use** — Use of prescription-type drugs that were not prescribed for the respondent or were used only for the experience or feeling they caused. Nonmedical use of prescription-type drugs does not include over-the-counter drugs. Nonmedical use of stimulants and of any prescription-type drug includes methamphetamine use.
c. **Drug Dependence or Abuse** — Based on criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV), including such symptoms as withdrawal, tolerance, use in dangerous situations, trouble with the law, and interference with major obligations at work, school, or home during the past year.[1]

To obtain data on those with co-occurring disorders, McDowell Group compiled data from the U.S. Department of Health and Human Services' Substance Abuse and Mental Health Services Administration's (SAMHSA) annual National Survey on Drug Use and Health (NSDUH). This report includes national data on substance abuse and mental illness in the U.S. as well as estimates of the rate of co-occurrence of mental health issues [any mental health illness (AMI), serious mental health illness (SMI), and major depressive episodes (MDE)] and substance use disorders among adults age 18+ in the United States. A special request was made to SAMHSA for Alaska's NSDUH data from April 2014, which provided some Alaska-specific counts on co-occurrence.

Additionally, in 2016, a report titled "*Alaska Behavioral Health Systems Assessment Final Report"* was prepared for the Alaska Mental Health Trust Authority. The purpose of the report was to analyze the "behavioral health system in Alaska and the barriers and opportunities to meeting the behavioral health needs of Alaskans" with the goal to "describe the system, assess the need for services and capacity to meet the need, develop a framework for regular monitoring of the system, and identify barriers, opportunities, and recommendations for system improvement."

Chapter 2: Productivity Losses

Several methods were used to estimate the economic impact of different causes of productivity loss.

MORTALITY CAUSES

A special data request for death counts was made to the DHSS, Division of Public Health, Health Analytics & Vital Records (formerly the Bureau of Vital Statistics (BVS)). Due to small numbers for some causes, a multi-year period (2010-2014) was used to estimate the number of deaths statewide. BVS provided two datasets: 1) counts where drug-related causes of death were the underlying (primary) cause of death; and 2) counts where a 100 percent attributable alcohol or drug-related cause of death was listed as any reason other than the primary cause for the death in the record. These two different death counts demonstrate the various degrees of drug abuse impacts; they were not combined as there is overlap in the counts.

[1] For details, see American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Drug-Attributable Fractions

Drug-attributable fractions (DAF) were gathered from three sources: (1) the CDC's Vital Statistics section; (2) the article *"Substance-attributable morbidity and mortality changes to Canada's epidemiological profile: Measurable differences over a ten-year period*" by Jayadeep Patra and Benjamin Taylor, et al. and published in the Canadian Journal of Public Health; and (3) *"The Costs of Alcohol and Drug Abuse in Maine" by* Anne L. Rogers, Marcella H. Sorg, et al. prepared for the Maine Office of Substance Abuse and Mental Health Services Department of Health and Human Services (with DAFs pulled from the National Institute of Health (NIH) National Institute on Drug Abuse (NIDA) "*The Economic Costs of Alcohol and Drug Abuse in the United States 1992*"). NIDA compiled the diagnoses and conditions attributable to drug abuse. For each diagnosis and condition, the study reported the percent of cases attributable to drug abuse. The percentages are called DAFs. The DAFs and ICD-10 codes used in this report may be found in the appendix. DAFs are based on national data.

Potential Years of Life Lost Due to Death from Drugs

BVS provided the potential years of life lost (PYLL) for each death using the ICD-10 codes by age and gender. These calculations assume a 75-year lifespan. Using the appropriate DAFs for each cause of death, an estimate of the number of PYLL attributable to drugs was calculated. No economic costs were applied to these calculations because the complex modeling required was outside the scope of this analysis.

INCARCERATION CAUSES

The primary method for estimating lost productivity due to incarceration involved applying potential earnings to the number of inmates absent from the workforce due to drug-abuse-related incarcerations. Statewide incarceration counts by gender and offense were gathered from the Alaska Department of Corrections (DOC)'s *Alaska Offender Profile, 2014* — an annual report that examines the total inmate population by offense category and calendar year.

Drug attributable rates were drawn from the U.S. Department of Justice's National Drug Intelligence Center (NDIC) report, *The Economic Impact of Illicit Drug use on American Society 2011*. Drug-related offenses were fully attributed to drugs. For other offenses, the NDIC's drug-attributable rates were based on the Bureau of Justice Statistics' (BJS) S*urvey of Inmates in Local Jails*, *Survey of Inmates in State Correctional Facilities*, and the *Survey of Inmates in Federal Correctional Facilities*.

DIMINISHED PRODUCTIVITY CAUSES

To estimate economic productivity losses by gender, the NDIC report, "*The Economic Impact of Illicit Drug Use on American Society 2011"* was used: a 17 percent decrease attributable to drug use in productivity for males and an 18 percent decrease for females. Other sources include DOLWD's population estimates, ACS's estimates for median individual annual average earnings by gender, and SAMHSA's 2013-2014 Alaska NSDUH incidence estimates for past year drug dependence and drug dependence or abuse.

This report provides two different estimates of impaired productivity losses for drug use. The first is for individuals who reported drug dependence in the past year. The second is for individuals who reported either drug dependence or abuse in the past year. The estimates should not be added together as there is overlap. Definitions of abuse or dependence or abuse were taken from DSM-IV.

HOSPITALIZATION AND TREATMENT CAUSES

To estimate lost earnings, the total length of stay for drug-attributable inpatient hospital and emergency department (ED) visits was multiplied by the statewide average daily work-place earnings.

A study commissioned in 1998 by the National Institute of Drug Abuse, *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992*, compiled the diagnoses and conditions attributable to drug abuse. For each diagnosis and condition, the study reported the percent of cases attributable to drug abuse. The percentages are called drug-attributable fractions. This report draws from that compilation.

The total length of stay for drug-attributable inpatient and ED visits was obtained through the Alaska Hospital Facilities Data Reporting Program (HFRP), which collects discharge data from inpatient, ED, and other outpatient facilities throughout the state. The most recent data available was from 2012. Without more recent data, this 2012 data serves as a proxy for 2015 hospital information. Additionally, Department of Health and Social Services (DHSS) estimates that approximately 70 percent of the state's hospital facilities reported to HFRP in 2012. Admissions and length of stay were adjusted by this factor to arrive at an estimate for the entire state.

Drug-attributable fractions from the 1998 study were applied to Alaska HFRP totals to determine the length of stay attributable to drug abuse. Length of stay was measured in days for both inpatient admissions and ED visits. To estimate days of lost work, it was assumed that a visit to the ED consumed an entire day. If an ED visit occurred over the course of multiple days – a patient was admitted to the ED on one day and discharged on a different day – all days are considered lost-work days.

The Alaska Department of Labor and Workforce Development (DOLWD) publishes annual average wage data for Alaska workers. The 2015 annual average wage of $50,150 was converted to average earnings per work day of $192 (based on 261 work days per year).

Income-related data, including employment status and annual household income ranges, was provided by DBH for clients in 24-hour detoxification and residential treatment services. DBH also provided the total number of bed days at 24-hour detoxification and at residential services in 2015.

The number of bed days were separated into those associated with drug treatment based on the proportions of admissions associated with drugs only, and both alcohol and drugs.

It was assumed that patients under age 18 were in school rather than in the labor force and, therefore, did not forfeit direct earnings while admitted. Annual incomes were converted to earnings per day (based on 261 work days per year) using the midpoint of each income range provided in the data. Total incomes were reduced by a factor of .746, the average proportion of total personal income attributable to personal earnings (wages and salaries) for Alaskans in 2015 per the Bureau of Economic Analysis.

The total number of bed days was distributed according to the proportions of clients in each income range. Then, the number of bed days associated with each income range was multiplied by earnings per day of that range to arrive at an estimate for lost earnings.

Chapter 3: Vehicle Traffic Collisions

This chapter examines nine categories of costs incurred from vehicle traffic accidents, plus a quality-adjusted life-years (QALY) cost. The National Highway Traffic Safety Administration (NHSTA), which estimates the costs, provides the following definitions for the nine categories:

1. **Medical:** The cost of all medical treatment associated with motor vehicle injuries, including treatment given during ambulance transport. Medical costs include ED and inpatient hospitalization costs, follow-up visits, physical therapy, rehabilitation, prescriptions, prosthetic devices, and home modifications.
2. **Emergency services:** Police and fire department response costs.
3. **Market productivity:** The net present value of the lost wages and benefits over the victim's remaining life span.
4. **Household productivity:** The net present value of lost productive household activity, valued at the market price for hiring a person to accomplish the same tasks.
5. **Insurance administration:** The administrative costs associated with processing insurance claims resulting from motor vehicle collisions and defense attorney costs.
6. **Workplace costs:** The costs of workplace disruption due to the loss or absence of an employee. This includes the cost of retraining new employees, overtime required to accomplish work of the injured employee, and the administrative costs of processing personnel changes.
7. **Legal costs:** The legal fees and court costs associated with civil litigation resulting from traffic collisions.
8. **Congestion costs:** The value of travel delay, added fuel usage, greenhouse gas and criteria pollutants that result from congestion that results from motor vehicle collisions.
9. **Property damage:** The value of vehicles, cargo, roadways, and other items damaged in traffic collisions.

The number of vehicle traffic collisions in Alaska was obtained from DOTPF's most recent report available, *2011 Crash Data*. In addition to reporting all traffic collisions, the report gives the number of impaired (alcohol and/or drug) collisions. Due to differences in reporting injury levels between NHSTA and DOTPF, NHSTA's MAIS Level 1 was matched to DOTPF's "minor injury" category and MAIS Level 5 was matched to DOTPF's "major injury" category. Both sources report "fatal" and "property damage only" incidences.

No data were available to separate costs related to drug abuse from those related to alcohol abuse. In the absence of data, the study team assumed the split of drug- and alcohol-related collusions would be like all other components of costs measured in this study, which is approximately 40 percent drug-related and 60 percent alcohol-related.

Chapter 4: Criminal Justice and Protective Services

OFFENSES AND ARRESTS

Costs related to the criminal justice system were estimated based on arrest and offense data from the Alaska Department of Public Safety (DPS) Uniform Crime Reporting document, *Crime in Alaska, 2014*, and the FBI's annual *Uniform Crimes Report* (UCR). As part of the nationwide Unified Crime Reporting system, DPS reports known offenses annually. In 2014, law enforcement agencies reporting to DPS had jurisdiction over 99.4 percent of Alaska's population. The data show all known offenses regardless of whether an arrest was made. They include the categories of criminal homicide (murder and manslaughter), rape (rape and attempts to commit rape),

aggravated assault, other assault, robbery, burglary, larceny/theft, and auto theft. Data for the remaining categories of driving while intoxicated, other sex offenses (including prostitution and commercialized vice), and liquor laws represent are from the FBI's UCR alone.

Drug attribution rates were gathered from the NDIC report, *The Economic Impact of Illicit Drug use on American Society 2011.* Drug-law offenses were attributed in full to drugs. For other offenses, the NDIC's drug attributable rates were based on the BJS's *Survey of Inmates in Local Jails*, *Survey of Inmates in State Correctional Facilities*, and the *Survey of Inmates in Federal Correctional Facilities*.

CRIMINAL JUSTICE SYSTEM

The primary source used to estimate criminal justice system costs for specified crimes as the 2010 NIH report, *The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation.*

Costs for the criminal justice system addressed in the NIH report include "local, state, and federal government funds spent on police protection; legal and adjudication services; and correction programs, including incarceration." This study was used to estimate the cost for criminal homicide, rape and other sexual offenses, assaults, robbery, burglary, larceny-theft, and motor vehicle theft.

CRIME VICTIMIZATION

Bureau of Justice Statistics (BJS) publishes national data on victimization rates per 1,000 people age 12+ or per 1,000 households. These rates are published in the annual *National Criminal Victimization Survey* (NCVS) report. The NCVS collects information on nonfatal crimes reported and not reported to police from a nationally representative sample of U.S. households. The 2014 victimization rates were applied to Alaska's 2014 population age 12 and older (published by DOLWD) or to ACS 2010-2014 Five-Year Data count of Alaska households to find the number of victims for specified crimes for the state.

The 2010 NIH report was also used to estimate tangible costs for crime victim, defined as the cost of "direct economic losses suffered by crime victims, including medical care costs, lost earnings, and property loss/damage." Tangible victim costs were estimated for homicide, assaults, rape/sexual assault, robbery, burglary, theft, and motor vehicle theft. These were adjusted for inflation and Alaska's cost-of-living differential.

Data from the 2010 NIH report were also used to estimate intangible costs, which include "indirect losses suffered by crime victims, including pain and suffering, decreased quality of life, and psychological distress." These intangible costs include pain and suffering, and the probability of being killed while a crime is occurring (corrected risk-of-homicide costs). Intangible victim costs were estimated for homicide, assaults, rape/sexual assault, robbery, burglary, theft, and motor vehicle theft. The costs were adjusted for inflation and Alaska's cost-of-living differential.

To find the number of Alaska crime victims, the BJS's annual national data on victimization rates were used. The 2014 victimization rates were applied to Alaska's 2014 population (DOWLD) or to ACS's 2010-2014 Five-Year Data of Alaska households count to find the number of victims for specified crimes. Drug attribution rates from the NDIC were then applied to estimate the number of crime victimizations attributed to drugs in Alaska.

PROTECTIVE SYSTEMS

The National Survey of Children and Adolescent Well-Being estimates that 61 percent of infants and 41 percent of older children in out-of-home care are from families with active alcohol or drug abuse (Wulczyn, Ernst, & Fisher, 2011). For almost 31 percent of all children placed in foster care in 2012, parental alcohol or drug abuse was the documented reason for removal and in several states that percentage surpassed 60 percent (National Data Archive on Child Abuse and Neglect, 2012).

While there are no accurate data available, according to the Alaska Office of Children's Services (OCS), approximately 75 percent of its cases may result from or involve alcohol or drug abuse. To estimate the total costs of child abuse and neglect attributable to alcohol or drug abuse, this percentage was applied to OCS actual expenditures for State Fiscal Year (SFY) 2015. This estimate assumes the workload for all OCS functions, not just case work but administrative and support services as well, is proportional to the number of cases involving alcohol and drug abuse. To separate costs attributable to alcohol from costs attributable to drugs, it was estimated that alcohol accounts for two-thirds of the total and drugs one-third. This estimate is drawn from the 1998 National Institute on Drug Abuse study, *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992*.

An estimate of the percent of cases related to drug abuse was not available from the Division of Senior and Disability Services. Therefore, costs for adult protective services are not estimated in this report.

Chapter 5: Health Care

Table 7 below lists the drug-related diagnoses used to estimate inpatient and ED costs. More detailed tables of ICD-10 codes and attributable fractions used in this health care chapter can found in Tables 40 (inpatient) and 42 (Emergency Department).

INPATIENT COSTS

Alaska Hospital Facilities Data Reporting Program (HFDR) collects discharge data for inpatient, ED, and other outpatient settings from health care facilities in Alaska. At the time of this report, the HFDR 2012 dataset was the most recent year of data available.

NIDA's *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* compiled the diagnoses and conditions attributable to drug abuse. For each diagnosis and condition, the study reported the percent of cases attributable to drug abuse (also known as DAFs).

The Alaska HFDR 2012 dataset provided the number of admissions, length of stay, and hospital charges for each drug attributable diagnosis or condition. DAFs were applied to those totals to determine the amounts attributable to drug abuse. Charges presented by HFDR represent the amount charged by a facility for services, not the final amount paid.

In 2012, not all hospital facilities in Alaska reported to the HFDR. DHSS estimates that the HFDR 2012 dataset represents 70 percent of the state's total inpatient, ED, and other outpatient hospital visits or admissions. For inpatient data, the total number of admissions, length of stay, and hospital charges attributable to drug abuse were divided by 0.7 to estimate statewide totals.

Emergency Department Costs

The methodology for ED data mirrors that for inpatient data. ED visits for the same diagnoses and conditions used for hospital admissions were pulled from the HFDR 2012 dataset. Totals were adjusted by the 70 percent to estimate statewide totals.

Table 7. Drug-related Diagnosis and Corresponding ICD-9 Code

Diagnosis	ICD-9 Code
Drug mental disorders and psychoses	292.xx
Drug dependence	304.xx
Non-dependent abuse of drugs	305.2x, 305.3x, 305.4x, 305.5x, 305.6x, 305.7x, 305.8x, 305.9x
Polyneuropathy due to drugs	357.6
Drug dependence complicating pregnancy, childbirth, or puerperium	648.3x
Drugs affecting fetus or newborn via placenta or breast	760.72, 760.73, 760.75
Drug withdrawal syndrome in newborn	779.5
Fetal damage due to drugs	655.5x
Poisoning by opiates and related narcotics	965.0x
Poisoning by sedatives and hypnotics	967.xx
Poisoning by CNS muscle tone depressants	968
Poisoning by psychotropic agents	969.xx
Poisoning by CNS stimulants	970.xx

Treatment for Drug Abuse

Data were compiled for costs incurred and number of admissions for four drug use disorder services: 24-hour detoxification, residential, outpatient (non-opioid), and outpatient-opioid. The analysis includes funding from two sources: Behavioral Health Treatment and Recovery grants awarded to agencies by the Alaska Division of Behavioral Health (DBH) and Medicaid payments for services provided by those agencies to Medicaid beneficiaries. The analysis does not include payments from other sources such as Medicare, Indian/Native Health Services, other public funding sources, or private insurance. Additionally, the number of bed days are presented for two service types: 24-hour detoxification and residential treatment.

For agencies receiving treatment and recovery grants, DBH provided SFY 2015 data on the number of statewide admissions by service type (24-hour detoxification, residential, outpatient (non-opioid), and outpatient-opioid) and by substance of abuse (drugs only, or alcohol and drugs). DBH also provided the treatment and recovery grant award amounts and Medicaid payments to grantee agencies by service type. The grant and Medicaid payment totals did not distinguish the amount for treating alcohol dependence/abuse from the amount for treating drug dependence/abuse. This allocation was estimated by applying to the grant and Medicaid payment totals the proportions of enrollment associated with admissions for each substance of abuse (drugs only, or alcohol and drugs). Enrollments and admissions differ in that a single admission could be associated with enrollment into multiple service types. For enrollments treating both alcohol and drug dependence/abuse, it was estimated that half were for alcohol dependence/abuse and half for drug dependence/abuse. These amounts were added to totals for drug only, respectively.

DBH also provided the SFY 2015 number of bed days for 24-hour detoxification and residential treatment. The number of bed days was not initially separated by substance of abuse. This separation was estimated with the same methodology used for grant totals and Medicaid payments described above.

HEPATITIS C COSTS

Significant changes to hepatitis C virus (HCV) treatment have occurred in recent years. Due to the complexity of quantifying the costs to treat HCV, these estimates have some limitations. The number of new HCV cases in Alaska, available through the state's Infectious Disease Program, serves as a proxy for the number of patients treated each year. Data compiled by the CDC in 2013 suggest injection drug use (IDU) as a risk factor for 61.6 percent of new HCV cases[2]. This percent was applied to the number of new cases to estimate the number of annual treatments attributable to IDU. It is important to note that years when new cases are reported are not necessarily the years when HCV was contracted.

Two common HCV medications are Harvoni and Viekira Pak. A 12-week course of the medications has a wholesale acquisition cost (the price set by manufacturers) of $94,500 and $84,000, respectively. The number of new cases of HCV in Alaska in 2015 attributable to IDU was multiplied by the average cost of the 12-week courses of Harvoni and Viekira Pak.

It is important to recognize the estimated costs are limited by the complexity of HCV treatment and a lack of available data. For one, multiple genotypes of HCVs exist, each requiring unique treatment guidelines and medication. Multiple medications exist that vary in price by type and length of prescription (6 weeks, 12 weeks, or 24 weeks). Additionally, pharmaceutical companies negotiate prices with each insurer or pharmacy separately and sometimes give away medications for low-income patients.

While the State of Alaska Infectious Disease Program tracks new reported cases of HCV, it does not track the number of patients receiving treatments. Those receiving treatment could be not only new reported cases, but those cases backlogged in the years prior to the new and more effective treatment methods made recently available. To obtain the number of actual treatments would require the release of information by all health care providers in the state that treat HCV. A more representative total for the costs of treating HCV would include the number of cases treated, the treatment type for each case, and the amount paid for the treatment type. Unsuccessful attempts were made to obtain this information from pharmaceutical manufacturers and health care providers. This analysis does not include the high costs associated with liver treatment or transplants. Theoretically, these costs are included under the impatient and outpatient cost estimates.

HIV AND AIDS COSTS

DHSS's Division of Public Health's Epidemiology Section compiles and reports data on infectious disease cases reported in the state. Since 1982, the state has tracked HIV and AIDS in several ways, including all known cases in the state and cases first diagnosed in the state of HIV (non-AIDS) and HIV with AIDS. The state also records methods of transmission.

[2] Surveillance for Viral Hepatitis – United States, 2013. *The Centers for Disease Control and* Prevention. http://www.cdc.gov/hepatitis/statistics/2013surveillance/

For this report, the transmission estimate counts of interest are IDU, and male-to-male sex and IDU. From 1982 to 2015, there were 1,680 total reported cases of HIV and HIV with AIDS. Of these 1,680 cases, 330 were attributed to IDU, for an Alaska-specific attribution rate of 19.6 percent; this is similar to the national rate reported in NDIC report, "*The Economic Impact of Illicit Drug use on American Society 2011,"* of 18.5 percent.

PREVENTION SERVICES

DBH prevention grants target mental health and substance abuse. Some target only mental health or only substance abuse, while others target both. This study separates out the grants for mental health and reports only the grants directed towards substance abuse. For grants that target both substance abuse and mental health, DBH assisted in estimating what proportion went towards substance abuse prevention. The total amount directed towards substance abuse prevention was then further separated to identify totals for alcohol abuse prevention and drug abuse prevention. If grant recipient programs used funds to prevent both alcohol and drug abuse, it is estimated that half went to the prevention of alcohol abuse and half to the prevention of drug abuse, unless otherwise informed by DBH.

It is important to note that only grants with funding for substance abuse prevention are reported. There are prevention grants directed solely towards mental health prevention that are not included.

Chapter 6: Public Assistance and Social Services

FEDERAL GOVERNMENT COSTS

This report captures federal funding from federal FY 2014, the most recent available published data, for the following programs: Old Age, Survivors, and Disabilities Insurance (OASDI); Supplemental Security Income (SSI); Temporary Assistance for Needy Families (TANF); and Supplemental Nutrition Assistance Program (SNAP).

The NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992*, compiled the national prevalence of drug abuse among beneficiaries of different social welfare programs. This study applied those prevalence rates to the federal funding allocated to Alaska through the programs listed above. The NIDA study estimated that one-third of total funding attributable was to drug abuse. This report adopts that estimate.

STATE GOVERNMENT COSTS

The State of Alaska Office of Management and Budget published actual expenditures for SFY 2015 for individual programs operated by the Division of Public Assistance (DPA). Prevalence rates for drug abuse among social welfare beneficiaries – taken from the 1998 NIDA study – were applied to state funding for welfare programs to determine the portion attributable to drug abuse.

PREVENTION GRANTS

DBH provided SFY 2015 data on prevention grants, also used under the health care costs section. This report separated from the total grant values the amounts directed towards substance abuse. For grant recipient programs that prevent both substance abuse and other mental health issues, DBH assisted in estimating what proportion went towards substance abuse prevention. The grant value allocated to substance abuse prevention was then further separated to identify totals for alcohol abuse prevention and drug abuse prevention. If grant

recipient programs used funds to prevent both alcohol and drug abuse, this report estimated that half went to the prevention of drug abuse.

JUSTICE SYSTEM

Justice system governmental finances and employment data were compiled from U.S. Census Bureau information. The justice data include the expenditures and employment of the federal government, state governments, and a sample of county, municipal, and township governments. Unless otherwise noted, data for total governmental expenditures, including justice and non-justice governmental functions, also include the expenditures of special districts and school districts, which generally do not have justice functions. The 2012 survey sample was selected from the *2007 Census of Local Governments* and consists of large units of government (including all 50 state governments) sampled with certainty and smaller units selected with a probability proportional to the unit's expenditure. It was designed to produce data by type of government estimate with a relative standard error of 3 percent or less for total expenditure and state estimates with a relative standard error of 5 percent or less on total expenditure, criminal justice, and other government functions. All other government units were selected into the sample with a probability proportional to their size.

Abbreviations

ACS	American Community Survey
AIDS	Acquired Immunodeficiency Syndrome
AMI	Any Mental Health Illness
ART	Antiretroviral Treatment
BJS	Bureau of Justice Statistics
BVS	Bureau of Vital Statistics
CDC	Centers for Disease Control and Prevention
DAF	Drug-attributable Fractions
DBH	Division of Behavioral Health
DHSS	Alaska Department of Health and Social Services
DOC	Alaska Department of Corrections
DOLWD	Alaska Department of Labor and Workforce Development
DOTPF	Alaska Department of Transportation and Public Facilities
DPA	Division of Public Assistance
DPS	Alaska Department of Public Safety
DSDA	Alaska Division of Senior and Disability Services
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders
ED	Emergency Department
ESRI	Environmental Systems Research Institute
GF	General Fund
HFRP	Alaska Hospital Facilities Data Reporting Program
HIV	Human Immunodeficiency Virus
IDU	Injection Drug Use
LTC	Long Term Care
MDE	Major Depressive Episodes
NAMI	National Alliance on Mental Illness
NCVS	National Criminal Victimization Survey
NDIC	National Drug Intelligence Center
NHSTA	National Highway Traffic Safety Administration
NIDA	National Institute on Drug Abuse

NIH	National Institute of Health
NSDUH	National Survey of Drug Use and Health
OSC	Office of Children Services
PFAS	Partial FAS
PYLL	Potential Years of Life Lost
QALY	Quality-adjusted Life Years
QCEW	Quarterly Census of Employment and Wages
SAMHSA	Substance Abuse and Mental Health Services Administration
SFY	State Fiscal Year
SMI	Serious Mental Health Illness
SNAP	Supplemental Nutrition Assistance Program
SNF	Skilled Nursing Facility
SSI	Supplemental Security Income
SUD	Substance Use Disorder
TANF	Temporary Assistance for Needy Families
UCR	Uniform Crime Report

Chapter 1: Drug Consumption and Prevalence in Alaska

Summary

- In 2013-2014, approximately 77,000 Alaskans age 12 or older (13 percent) used illicit drugs in the past month, including 69,000 (12 percent) consuming marijuana and 20,000 (4 percent) using other illicit drugs (such as cocaine). Approximately 26,000 Alaskans (4 percent) used pain relievers for non-medical reasons, and 13,000 Alaskans (2.2 percent) were illicit-drug dependent.
- In 2013-2014, 114,000 Alaskans 12 years or older (20 percent) reported consuming marijuana in the past year.
- Marijuana use was considerably higher in Alaska than nationally; with 12 percent saying they consumed marijuana in the past month compared to 8 percent in the U.S. and 20 percent consuming in the past year in Alaska compared to 13 percent in the U.S.
- Other than marijuana, consumption rates for illicit drugs in Alaska were similar to national rates in 2013-2014.
- In 2013-2014, young adult Alaskans (age 18-25) had the highest percent of illicit drug use by age group, with 24 percent saying they had used illicit drugs in the past month. Among that age group:
    - 37 percent used marijuana in the past year.
    - 21 percent used marijuana in the past month.
    - 7 percent used other illicit drugs in the past month (excluding marijuana).
    - 4 percent used cocaine in the past year.
    - 9 percent used painkillers non-medically.
    - 9 percent were drug dependent or abusing drugs (including 7 percent who were just drug dependent).

Co-Occurrence of Mental Health and Substance Abuse

- In 2013, there were approximately 62,815 adults in Alaska who needed treatment for a substance use disorder (SUD).
- Of those who needed treatment, approximately 37 percent (22,990 people or 3 percent of Alaska's population) also have a mental illness.

Illicit Drug/Drug Abuse Consumption in Alaska

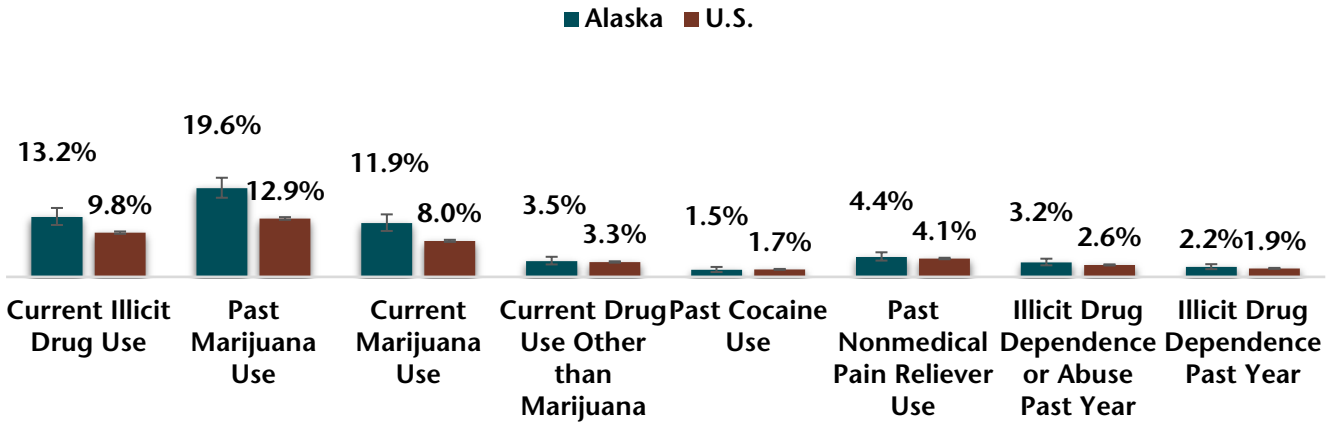
In 2013-2014, approximately 13.2 percent of Alaskans age 12 or older reported illicit drug use in the past month, including 11.9 percent consuming marijuana and 3.5 percent using other illicit drugs (such as cocaine). In 2013-2014, 19.6 percent of Alaskans reported consuming marijuana sometime in the past year. Overall illicit drug use was higher in Alaska (13.2 percent) than nationally (9.8 percent). Marijuana use was also considerably higher in Alaska than the national averages of 8 percent consuming in the past month and 12.9 percent consuming in the past year. There were no statistically significant differences between consumption patterns for other illicit drugs for Alaska and nationally.

Table 8. Drug Prevalence Estimates, Alaska and U.S., Age 12+, 2013-2014

	Alaska		United States	
Drug Indicator, Ages 12+	**Percent**	**95% Confidence Interval**	**Percent**	**95% Confidence Interval**
Illicit drug use in past month	13.2%	11.5 – 15.2%	9.8%	9.5 – 10.0%
Marijuana use past year	19.6%	17.5 -21.9%	12.9%	12.6 – 13.2%
Marijuana use past month	11.9%	10.1 – 13.8%	8.0%	7.7 – 8.2%
Illicit drug use in past month, other than marijuana	3.5%	2.7 – 4.4%	3.3%	3.1 – 3.4%
Cocaine use past year	1.5%	1.1 – 2.2%	1.7%	1.6 – 1.8%
Nonmedical use of pain relievers past year	4.4%	3.6 – 5.4%	4.1%	3.9 – 4.2%
Illicit drug dependence or abuse past year	3.2%	2.6 – 4.0%	2.6%	2.5 – 2.8%
Illicit drug dependence in past year	2.2%	1.7 – 2.8%	1.9%	1.8 – 2.0%

Source: National Survey of Drug Use and Health, SAMHSA.

Figure 3. Drug Consumption Patterns Prevalence Estimate Percentages, Alaska and U.S., Age 12+, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

Approximately 77,000 Alaskans used illicit drugs in the past month (2013-2014), including 69,000 who consumed marijuana and 20,000 who used other illicit drugs. Approximately 114,000 Alaskans used marijuana in the past year (2013-2014). Approximately 26,000 Alaskans used pain relievers for non-medical purposes in the past year. Approximately 13,000 Alaskans are illicit drug dependent.

Table 9. Drug Prevalence Estimates with Alaska Model-Based Population Estimates, Age 12+, 2013-2014

Drug Indicator, Ages 12+	% of Alaskans	95% Confidence Interval	# of Alaskans	95% Confidence Intervals
Illicit drug use in past month	13.2%	11.5 – 15.2%	77,000	66,000 – 88,000
Marijuana use past year	19.6%	17.5 -21.9%	114,000	101,000 – 127,000
Marijuana use past year	11.9%	10.1 – 13.8%	69,000	59,000 – 80,000
Illicit drug use in past month, other than marijuana	3.5%	2.7 – 4.4%	20,000	16,000 – 26,000
Cocaine use past year	1.5%	1.1 – 2.2%	9,000	6,000 – 13,000
Nonmedical use of pain relievers past year	4.4%	3.6 – 5.4%	26,000	21,000 – 31,000
Illicit drug dependence or abuse past year	3.2%	2.6 – 4.0%	19,000	15,000 – 23,000
Illicit drug dependence in past year	2.2%	1.7 – 2.8%	13,000	10,000 – 16,000

Source: National Survey of Drug Use and Health, SAMHSA.

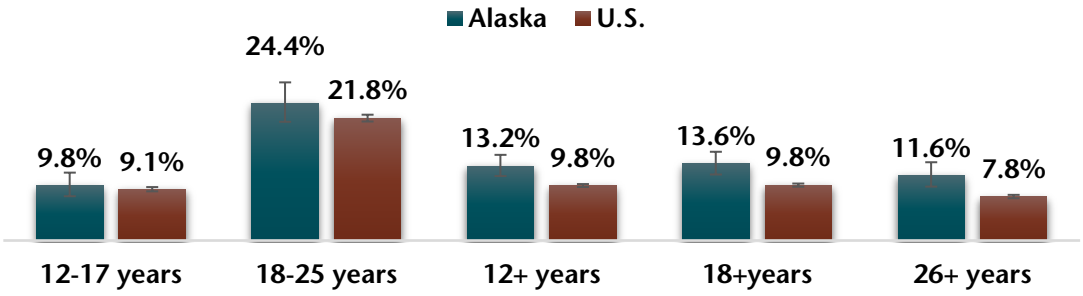
The highest percent of illicit drug use (in the past month) by age group occurred among young adults (24.4 percent of all Alaskans age 18-25). Alaskans age 12 or older are more likely to use illicit drugs (13.2 percent) than nationally (9.8 percent).

Table 10. Illicit Drug Use in the Past Month Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014

	Alaska		United States	
Age Group	Percent	95% Confidence Interval	Percent	95% Confidence Interval
12-17 years	9.8%	7.9 – 12.1%	9.1%	8.7 – 9.5%
18-25 years	24.4%	21.1 – 28.1%	21.8%	21.2 – 22.4%
12+ years	13.2%	11.5 – 15.2%	9.8%	9.5 – 10.0%
18+ years	13.6%	11.7 – 15.8%	9.8%	9.6 – 10.1%
26+ years	11.6%	9.6 – 13.9%	7.8%	7.5 – 8.1%

Source: National Survey of Drug Use and Health, SAMHSA.

Figure 4. Illicit Drug Use in the Past Month Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

Marijuana

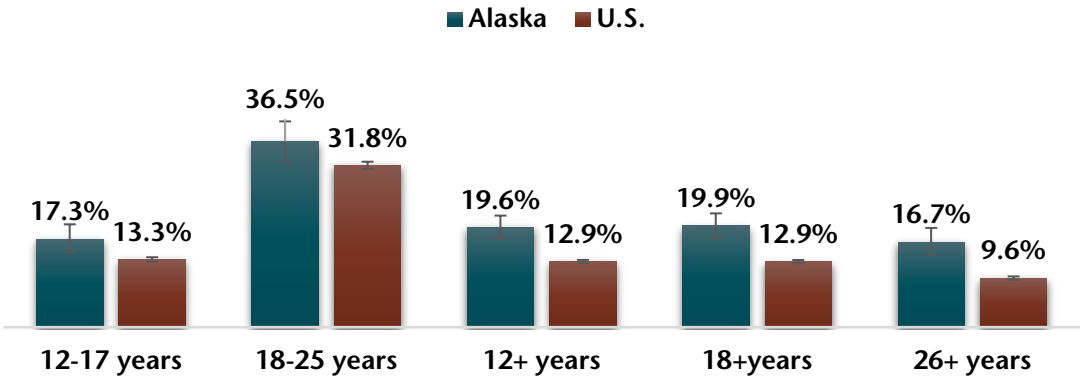
The highest percent of marijuana use (in the past year) by age group occurred with young adults (36.5 percent of all Alaskans age 18-25). Alaskans age 12 or older are more likely to use marijuana (19.6 percent) than nationally (12.9 percent).

Table 11. Marijuana Use in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014

	Alaska		United States	
Age Group	**Percent**	**95% Confidence Interval**	**Percent**	**95% Confidence Interval**
12-17 years	17.3%	14.7 – 20.2%	13.3%	12.8 – 13.7%
18-25 years	36.5%	32.7 –40.4%	31.8%	31.1 – 32.5%
12+ years	19.6%	17.5 -21.9%	12.9%	12.6 – 13.2%
18+ years	19.9%	17.6 – 22.3%	12.9%	12.6 – 13.2%
26+ years	16.7%	14.2 – 19.5%	9.6%	9.3 – 10.0%

Source: National Survey of Drug Use and Health, SAMHSA

Figure 5. Marijuana Use in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

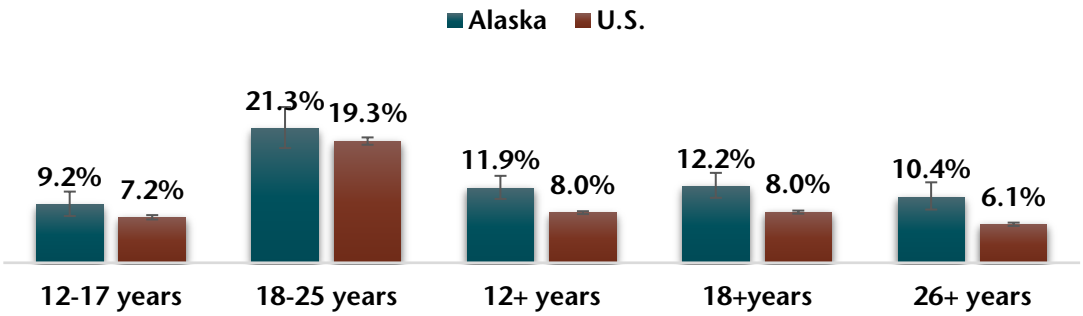
The highest percent of marijuana use (in the past month) by age group occurred with young adults (21.3 percent of all Alaskans age 18-25). Alaskans age 12 or older are more likely to use marijuana (11.9 percent) than nationally (8.0 percent).

Table 12. Marijuana Use in the Past Month Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014

	Alaska		United States	
Age Group	**Percent**	**95% Confidence Interval**	**Percent**	**95% Confidence Interval**
12-17 years	9.2%	7.4 – 11.3%	7.2%	6.9 – 7.6%
18-25 years	21.3%	18.2 – 24.7%	19.3%	18.7 – 19.9%
12+ years	11.9%	10.1 – 13.8%	8.0%	7.7 – 8.2%
18+ years	12.2%	10.3 – 14.3%	8.0%	7.8 – 8.3%
26+ years	10.4%	8.5 – 12.8%	6.1%	5.9 – 6.4%

Source: National Survey of Drug Use and Health, SAMHSA.

Figure 6. Marijuana Use in the Past Month Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

Other Illicit Drugs

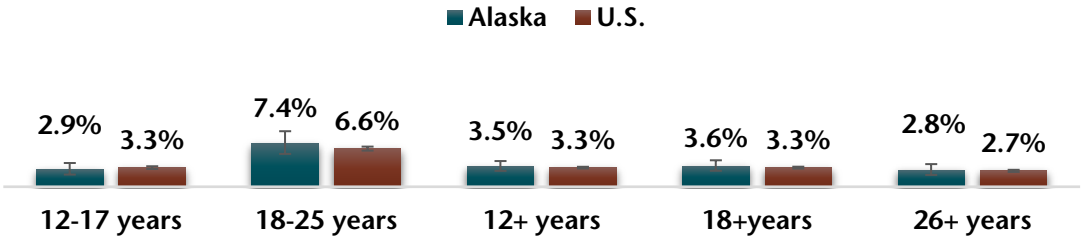
The highest percent of other illicit drug use (not including marijuana) in the past month, by age group, occurred among young adults (7.4 percent of all Alaskans age 18-25).

Table 13. Illicit Drug Use in the Past Month Other than Marijuana Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014

	Alaska		United States	
Age Group	**Percent**	**95% Confidence Interval**	**Percent**	**95% Confidence Interval**
12-17 years	2.9%	2.1 – 4.1%	3.3%	3.1 – 3.5%
18-25 years	7.4%	5.7 – 9.6%	6.6%	6.2 – 6.9%
12+ years	3.5%	2.7 – 4.4%	3.3%	3.1 – 3.4%
18+ years	3.6%	2.8 – 4.6%	3.3%	3.1 – 3.5%
26+ years	2.8%	2.0 – 3.95	2.7%	2.6 – 2.9%

Source: National Survey of Drug Use and Health, SAMHSA.

Figure 7. Illicit Drug Use in the Past Month Other than Marijuana Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

Cocaine

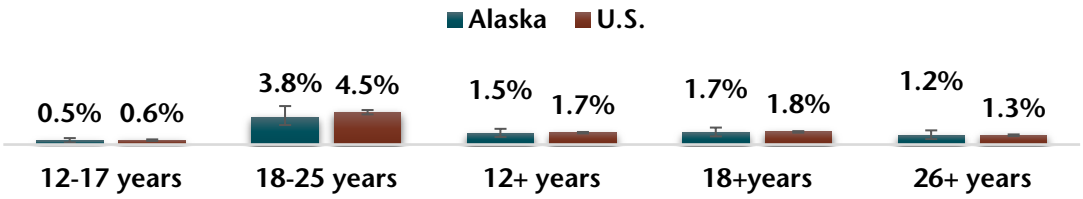
The highest percent of cocaine use (in the past year) by age group occurred among young adults (3.8 percent of all Alaskans age 18-25).

Table 14. Cocaine Use in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014

	Alaska		United States	
Age Group	Percent	95% Confidence Interval	Percent	95% Confidence Interval
12-17 years	0.5%	0.3 – 0.9%	0.6%	0.5 – 0.7%
18-25 years	3.8%	2.7 – 5.4%	4.5%	4.2– 4.8%
12+ years	1.5%	1.1 – 2.2%	1.7%	1.6 – 1.8%
18+ years	1.7%	1.1 – 2.4%	1.8%	1.7 – 1.9%
26+ years	1.2%	0.8 – 2.0%	1.3%	1.2 – 1.4%

Source: National Survey of Drug Use and Health, SAMHSA.

Figure 8. Cocaine Use in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

Nonmedical Use of Pain Relievers

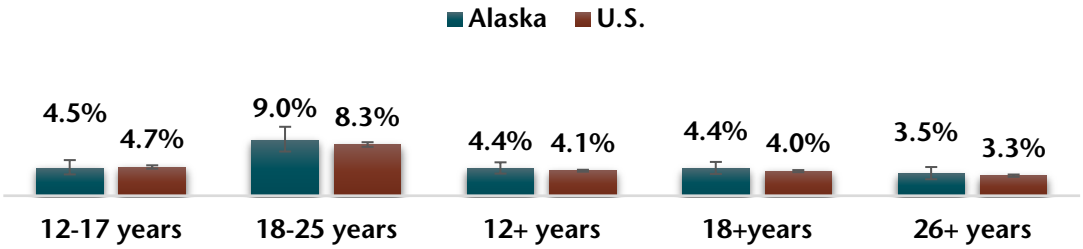
The highest percent of nonmedical use of pain relievers (in the past year) by age group occurred among young adults (9.0 percent of all Alaskans age 18-25).

Table 15. Nonmedical Use of Pain Relievers in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014

	Alaska		United States	
Age Group	Percent	95% Confidence Interval	Percent	95% Confidence Interval
12-17 years	4.5%	3.5 – 5.8%	4.7%	4.4 – 4.9%
18-25 years	9.0%	7.2 – 11.2%	8.3%	8.0 – 8.7%
12+ years	4.4%	3.6 – 5.4%	4.1%	3.9 – 4.2%
18+ years	4.4%	3.5 – 5.5%	4.0%	3.8 – 4.2%
26+ years	3.5%	2.7 – 4.7%	3.3%	3.1 – 3.5%

Source: National Survey of Drug Use and Health, SAMHSA.

Figure 9. Nonmedical Use of Pain Relievers in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

Drug Dependence or Abuse

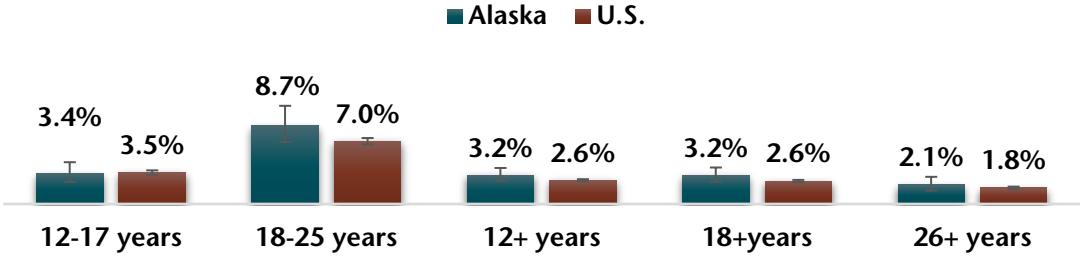
The highest percent of illicit drug dependence or abuse (in the past year) by age group occurred among young adults (8.7 percent of all Alaskans age 18-25).[3]

Table 16. Illicit Drug Dependence or Abuse in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014

	Alaska		United States	
Age Group	**Percent**	**95% Confidence Interval**	**Percent**	**95% Confidence Interval**
12-17 years	3.4%	2.5 – 4.7%	3.5%	3.3 – 3.8%
18-25 years	8.7%	6.9 – 11.0%	7.0%	6.6 – 7.4%
12+ years	3.2%	2.6 – 4.0%	2.6%	2.5 – 2.8%
18+ years	3.2%	2.5 – 4.1%	2.6%	2.4 – 2.7%
26+ years	2.1%	1.5 – 3.0%	1.8%	1.7– 1.9%

Source: National Survey of Drug Use and Health, SAMHSA.

Figure 10. Illicit Drug Dependence or Abuse in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

[3] Based on criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV), including such symptoms as withdrawal, tolerance, use in dangerous situations, trouble with the law, and interference with major obligations at work, school, or home during the past year.

Drug Dependence Only

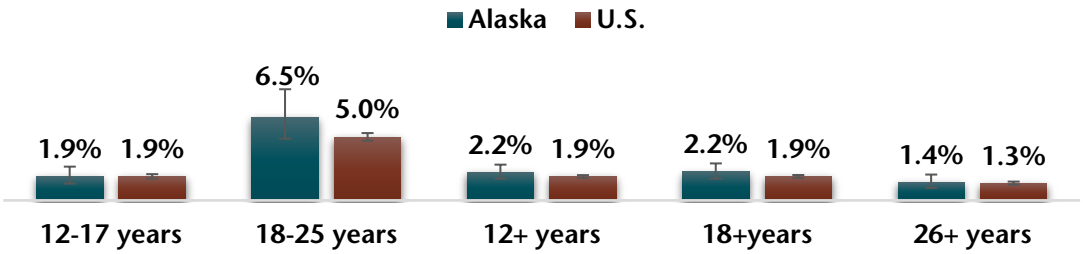
The highest percent of illicit drug dependence only (in the past year) by age group occurred among young adults (6.5 percent of all Alaskans age 18-25).

Table 17. Illicit Drug Dependence in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014

	Alaska		United States	
Age Group	Percent	95% Confidence Interval	Percent	95% Confidence Interval
12-17 years	1.9%	1.3 – 2.7%	1.9%	1.7 – 2.1%
18-25 years	6.5%	4.9 – 8.7%	5.0%	4.7 – 5.3%
12+ years	2.2%	1.7 – 2.8%	1.9%	1.8 – 2.0%
18+ years	2.2%	1.7 – 2.9%	1.3%	1.2 – 1.5%
26+ years	1.4%	1.0 – 2.0%	1.9%	1.8 – 2.0%

Source: National Survey of Drug Use and Health, SAMHSA.

Figure 11. Illicit Drug Dependence in the Past Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2013-2014



Source: National Survey of Drug Use and Health, SAMHSA.

Co-Occurring Disorders

While substance use disorders (SUD) have been documented as a problem in Alaska and nationwide, not often mentioned are individuals with SUDs who also have a mental health issue, defined as a co-occurring disorder. Research has shown individuals with co-occurring disorders display higher rates of substance dependence or abuse than the population as a whole. Further, they are likely to receive treatment only for their mental illness rather than for substance dependence or abuse.

According to the National Alliance on Mental Illness (NAMI), people with co-occurring disorders are far more prone to violence, medication noncompliance, and failure to respond to treatment. The poor response is because they are normally undergoing treatment for only one disorder, not both. Further, individuals with co-occurring disorders not only suffer from poorer overall functioning, they also have a significantly greater chance of relapse to substance use. Finally, people with co-occurring disorders are more likely to live in high-risk locations such as marginal neighborhoods with high substance usage, and they have a more difficult time forming social relationships and becoming involved in their communities.

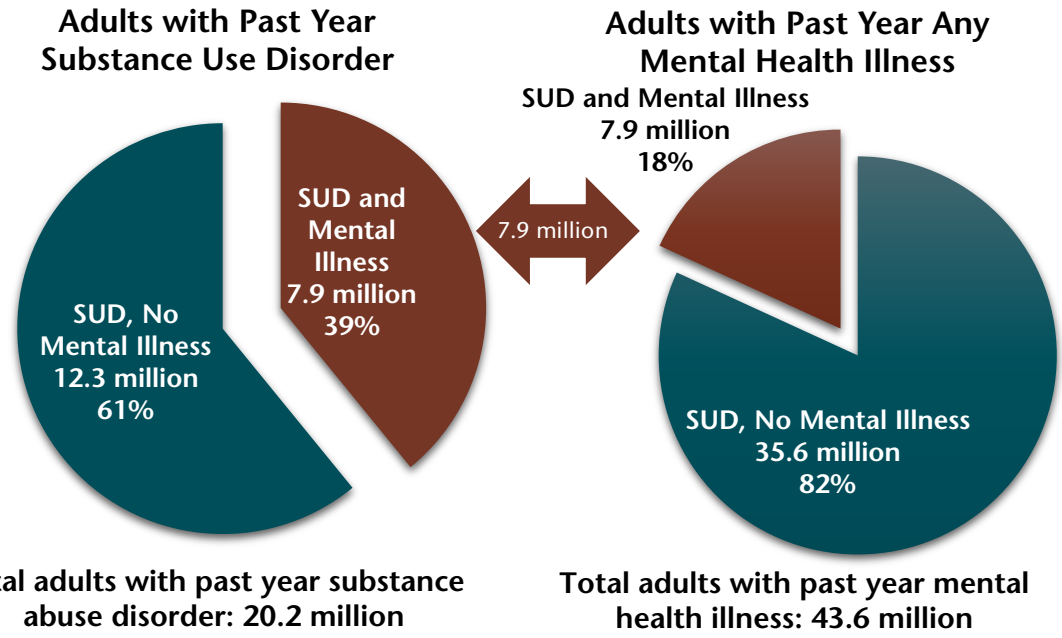
This means people with co-occurring disorders are highly likely to be homeless. In 2011, SAMHSA estimated 50 percent of homeless persons with serious mental illness (SMI) have a co-occurring SUD.[4]

In 2000, DHSS partnered with what was then the Alaska Mental Health Board and the Advisory Board on Alcoholism and Drug Abuse to identify challenges and barriers in caring for individuals with co-occurring mental health and substance use disorders. The goals of the project were to improve treatment outcomes, to improve accessibility of services and quality of care, and to improve efficiency in administration to minimize costs and facilitate greater use of funds for client services. As part of the program, the project team administered a survey of substance use disorder and mental health providers. Mental health providers reported up to three-quarters of their clients experienced co-occurring disorders, compared to 42 percent of substance abuse providers.[5] DHSS's DBH was a product of this project and continues to work towards integration and improvement of services.

Co-Occurring Disorders in the U.S.

According to NSDUH data from "*Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health,*" in 2014, there were 20.2 million adults (age 18 or older) with a past year SUD, and an additional 43.6 million adults who had any mental illness (AMI). Among these two groups, there were 7.9 million adults who had both an SUD and AMI (39 percent of the 20.2 million who have an SUD plus 18 percent of the 43.6 million who have AMI). The 7.9 million adults with co-occurring disorders represents 3.3 percent of the total U.S. population, with 2.3 million experiencing the co-occurrence of an SUD and a serious mental health illness (SMI) (1.0 percent of the total U.S. population).

Figure 12. Past Year Co-Occurring Mental Health and Substance Use Disorders, Adults Age 18+, 2014

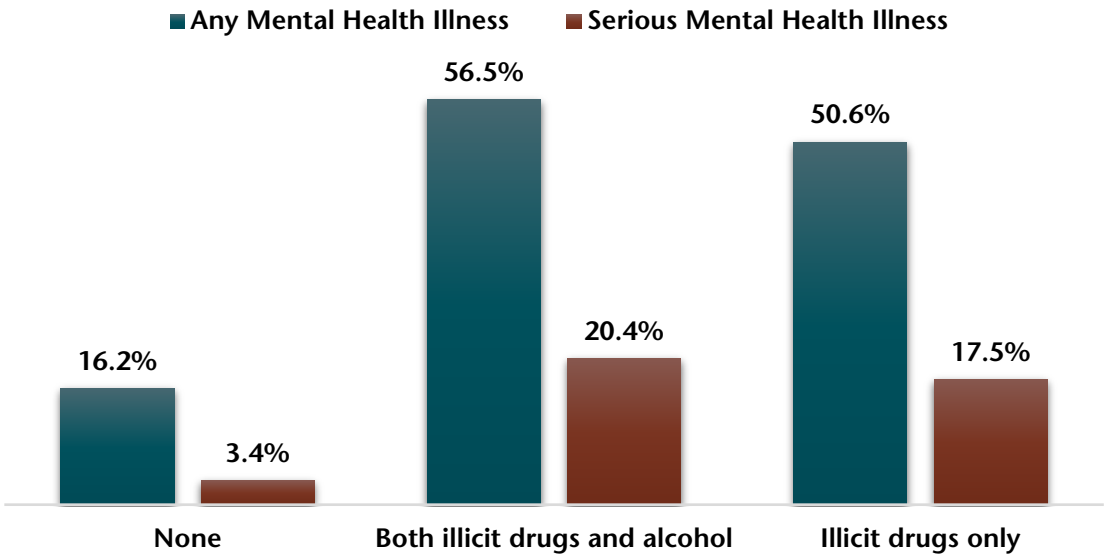


Source: U.S. Department of Health and Human Services, SAMHSA NSDUH, "*Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*" (2015).

[4] National Alliance on Mental Illness (NAMI), *Dual Diagnosis and Integrated Treatment of Mental Illness and Substance Abuse Disorder*, http://www.nami.org/Template.cfm?Section=By_Illness&Template=/TaggedPage/TaggedPageDisplay.cfm&TPLID=54&ContentID=23049.
[5] DHSS, *Final Report of the Steering Committee, Substance Abuse/Mental Health Integration Project*, http://www.hss.state.ak.us/abada/pdf/itfinal.pdf.

In 2014, among adults with AMI, only 16 percent had no drug abuse. However, 57 percent were dependent on or abusing both illicit drugs and alcohol, and 51 percent were dependent on or abusing illicit drugs only. Among adults with serious mental illness, only 3 percent had no substance dependence or abuse. However, 20 percent were dependent on or abusing both illicit drugs and alcohol, and 18 percent were dependent or abusing illicit drugs only.

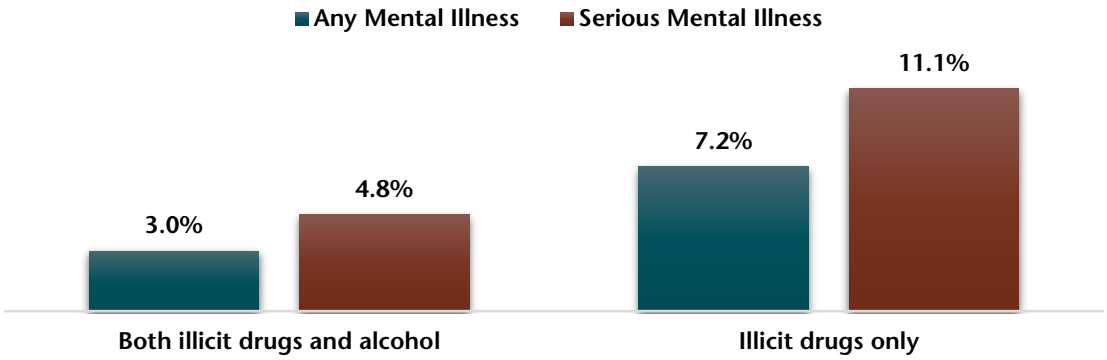
Figure 13. Percentage of Adults (18+ Years) with Mental Illness in the Past Year, by Past Year Drug Only or Both Alcohol and Drug Dependence or Abuse, 2014



Source: SAMHSA's NSDUH, *"Results from the 2014 National Survey on Drug Use and Health: Mental Health Detailed Tables"* (2015).

In 2014, among adults with SUDs, 3 percent of those with AMI were dependent on or abusing both illicit drugs and alcohol, and 7 percent were dependent on or abusing illicit drugs only. For those with past year SMI, 5 percent were dependent on or abusing both illicit drugs and alcohol, and 11 percent were dependent on or abusing illicit drugs only.

Figure 14. Percentage of Adults (18+ Years) with Drug Only or Both Alcohol and Drug Dependence or Abuse in the Past Year, by Past Year Mental Illness, 2014



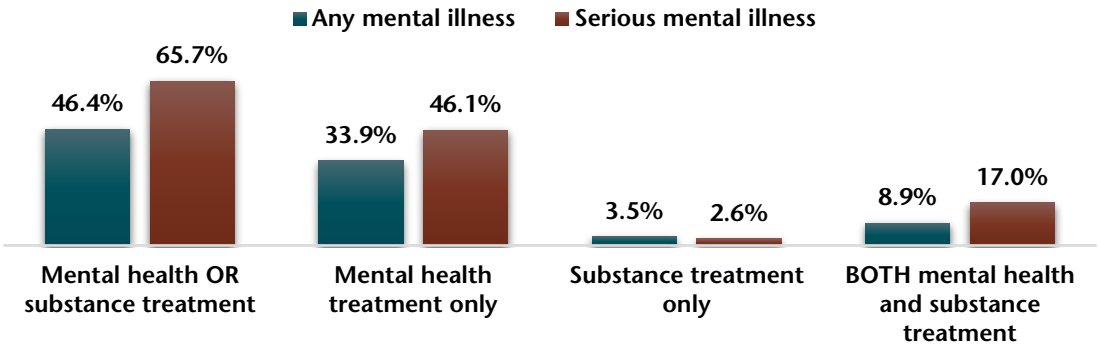
Source: SAMHSA's NSDUH, *"Results from the 2014 National Survey on Drug Use and Health: Mental Health Detailed Tables"* (2015).

Mental health and substance use co-occurring disorders are not limited to adults. While NSDUH does not estimate overall mental health among adolescents age 12-17, it does provide estimates of adolescents having a past year major depressive episode (MDE). MDE is defined as a period of two or more weeks in the past year when an individual experiences a depressed mood or loss of interest or pleasure in daily activities, with at least four out of seven qualifying symptoms (i.e. problems with sleep, eating, energy, concentration, and self-worth). In 2014, there were an estimated 271,000 adolescents in the U.S. who had an SUD and an MDE, approximately 1.1 percent of all U.S. adolescents.

TREATMENT

In 2014, among adults who had substance abuse or dependence in the past year and received some form of treatment, 46 percent with AMI received mental health or substance treatment, 34 percent with AMI received mental health treatment only, 4 percent with AMI received substance treatment only, and 9 percent with AMI received both mental health and substance treatment. Of adults who had a past year substance abuse or dependence and received some form of treatment, 66 percent of those with SMI received mental health or substance treatment, 46 percent of those with SMI received mental health treatment only, 3 percent of those with SMI received substance treatment only, and 17 percent of those with SMI received both mental health and substance treatment.

Figure 15. Percentage of Substance Abuse or Dependence in the Past Year Who Received Mental Health Treatment/Counseling and/or Illicit Drug or Alcohol Treatment in the Past Year, Age 18+, 2014

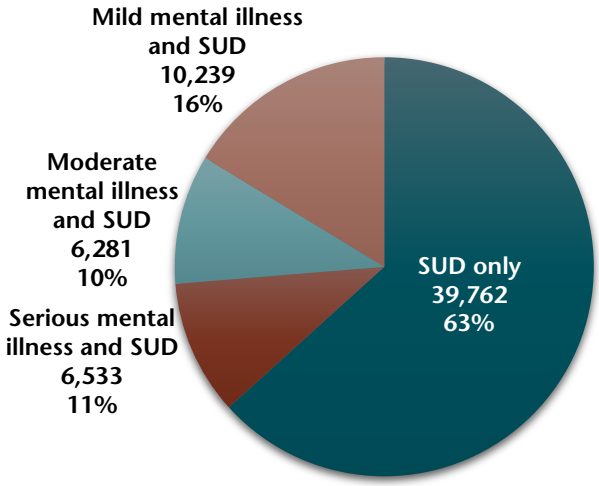


Source: SAMHSA's NSDUH, *"Results from the 2014 National Survey on Drug Use and Health: Mental Health Detailed Tables"* (2015).

Co-Occurring Disorders in Alaska

According to the report "*Alaska Behavioral Health Systems Assessment Final Report,"* in 2013, there were approximately 62,815 adults in Alaska who needed treatment for an SUD. Of those who needed treatment, 22,990 were estimated to have AMI (37 percent of those needing SUD treatment), approximately 3.1 percent of the total Alaska population. Of those with AMI and an SUD, 16 percent had SUD and mild mental illness, 10 percent had moderate mental illness and SUD, and 11 percent had SMI and SUD.

Figure 16. Alaska Adult Past Year Mental Health Prevalence Among Persons Needing Treatment for Illicit Drug or Alcohol Use, 2013



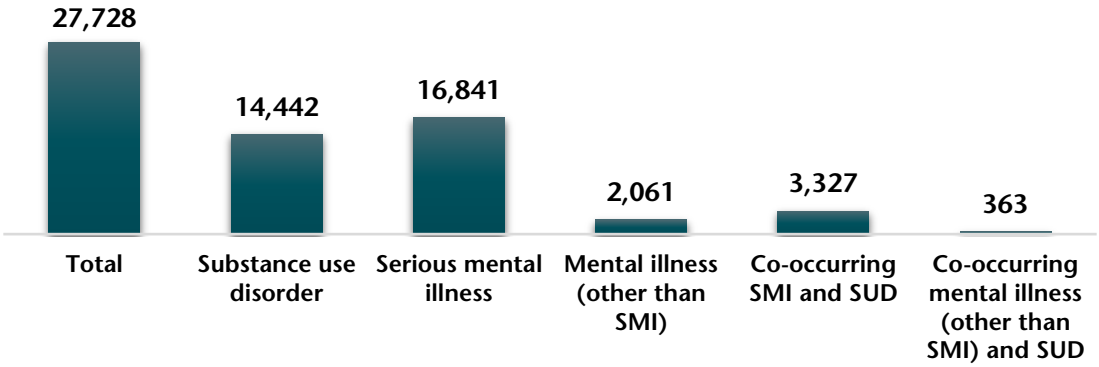
Source: Alaska Mental Health Trust Authority, "*Alaska Behavioral Health Systems Assessment Final Report*" (2016).

TREATMENT

According to SAMHSA's National Survey of Substance Abuse Treatment Services (N-SSATS), in 2013, Alaska had 91 treatment facilities; of which 83 offered treatment services for co-occurring disorders.[6]

Per a report produced for the Alaska Mental Health Trust Authority, in SFY 2013, Alaska behavioral health services served 27,728 unique adult clients with support from State Medicaid and/or behavioral health funds. There were 14,442 individuals with SUD, 16,641 with SMI, 2,061 with mental illness other than SMI, 3,327 with co-occurring SMI and SUD, and 363 with co-occurring SUD and mental illness other than SMI. Adults with SUD or SMI make up 61 percent of the total, and co-occurring disorders comprise 13 percent of the 27,728 Alaska adults.

Figure 17. Total Number of Alaska Adults Served with Support from State Medicaid and Behavioral Health Funds by Diagnosis, FY2013



Notes: Alcohol and/or Related Deaths, as defined, with 100 percent alcohol or drug-attributable ICD-10 codes listed in at least one contributing cause of death, as coded in the International Classification of Diseases, 10th Revision.
Source: Alaska Mental Health Trust Authority, "*Alaska Behavioral Health Systems Assessment Final Report*" (2016).

[6]http://www.samhsa.gov/data/sites/default/files/2013_N-SSATS/2013_NSATS_National_Survey_of_Substance_Abuse_Treatment_Services.pdf

Chapter 2: Productivity Losses

Summary

- From 2010 to 2014, there were 908 deaths in Alaska that had an ICD-10 code potentially linked to drugs. By applying the attributable fractions, 792 (87 percent) of the deaths were attributable to drug abuse. Between 2010 and 2014, there was an average of 158 drug-related deaths per year.
- There are two ways to measure productivity loss due to drug-related deaths: 1) deaths where the primary (or underlying) causes of death are linked to drugs or 2) deaths where drugs were not linked to the primary cause but were a subsequent cause with an attributable fraction assigned to that cause of 100 percent due to drugs (see Tables 58-60 in the appendix for details on which causes are 100 percent attributable). These two measures cannot be combined because there will be overlap between deaths where both primary and subsequent causes were attributable to drug abuse. However, both measures are useful as indicators of the productivity loss associated with drug abuse.
- Productivity loss due to deaths where drugs are the primary cause of death totaled approximately $391 million in Alaska in 2014.
    - An average of 58 women and 100 men died per year from drug abuse.
    - Female deaths attributed to drugs caused a productivity loss of $107.5 million (27 percent of the total), while male deaths caused the remaining $284.0 million productivity loss.
    - The age group with the highest productivity loss was ages 25-34, followed by 35 to 44 years, and 45 to 54 years.
- The estimated cost of lost productivity due to drug abuse-related incarceration in Alaska in 2014 was about $29.7 million, including $4.4 million for women (15 percent) and $25.4 million for men (85 percent).
- In 2014, productivity losses due to drug dependence were an estimated $81.4 million.
    - Men had an estimated loss of $48 million (59 percent) while women were estimated to have a loss of $33 million (41 percent).
- In 2014, productivity losses due to drug dependence or abuse were approximately $119.3 million.
    - Men had an estimated loss of $70 million (59 percent) and women were estimated to have a loss of $49 million (41 percent).
- In SFY 2015, admission to 24-hour detoxification and residential treatment services resulted in an estimated loss $1 million in potential earnings associated with drug abuse/dependence. These lost earnings were associated with approximately 42,000 bed days for drug treatment.
- In SFY 2015, 3,197 lost days of work for medical treatment of diseases and conditions attributable to drug abuse resulted in an estimated $613,824 in lost earnings.
- In 2015, in total, drug abuse resulted in $775 million in lost productivity in Alaska.

Lost Productivity Due to Mortality

One of the largest economic costs to Alaska due to drug abuse results from premature death. Various causes of death can be attributed to drug abuse either directly or indirectly, such as motor vehicle collisions, diabetes, or homicide. In all such cases, premature death results in the loss of the person's potential productivity. Total lost productivity as a result of death makes up the largest drug abuse-attributable cost to the Alaska economy.

Since each individual has the potential to join the workforce and contribute to the economy, premature death costs the economy in the form of lost production of goods and services as well as the circulation of earned wages back into the local economy. While some individuals may not join the workforce, they nevertheless have the potential to create societal value by performing household services, such as raising children and maintaining the household.

According to DHSS' BVS, 908 deaths occurred in Alaska from 2010 to 2014 that included an ICD-10 code that could be linked to drugs. By applying the attributable fractions, it was estimated 792 of these deaths (87 percent) were attributable to drugs. There was an annual average of 158 drug-related deaths between 2010 and 2014.

Table 18. Alaska Drug-Related Deaths, 2010-2014

	Deaths Caused by Selected ICD-10 Diagnoses 2010-2014	Estimated Drug Attributable Deaths 2010-2014	Annual Average Drug Attributable Deaths Per Year
Directly attributable (100 percent)	756	756	151
Partially attributable <100 percent	152	36	7
Total	**908**	**792**	**158**

Notes: Due to rounding columns may not add to totals. See the Appendix for ICD-10 codes used and drug attribution rates, along with estimations by cause of death.
Source: Death counts provided by DHSS' Division of Public Health Bureau of Vital Statistics' (BVS) unpublished data and McDowell Group calculations. Drug attribution rates from CDC's Vital Statistics; Patra et al. *"Substance-attributable morbidity and mortality changes to Canada's epidemiological profile: Measurable differences over a ten-year period;"* and Rogers et. al. *"The Costs of Alcohol and Drug Abuse in Maine."*

Estimated Productivity Losses for Primary (Underlying) Cause of Death

The table below shows the annual average number of drug-attributable deaths by age and gender from 2010 to 2014 where drugs were the primary cause of death. The table includes estimates of the inflation-adjusted future earnings for each age group and gender and the estimated economic loss by age group and gender.[7]

The primary causes of drug-related deaths with the highest annual costs were accidental poisoning by and exposure to drugs, medicaments, and biological substances (96 deaths per year); suicide by and exposure to drugs, medicaments, and biological substances (11 deaths per year); and hepatitis C (6 deaths per year). (A full list of deaths by primary cause and counts are in the appendix.)

[7] Please note, the totals in this section may differ slightly than totals in other sections in this chapter due to the removal of deaths where the age of the person is unknown.

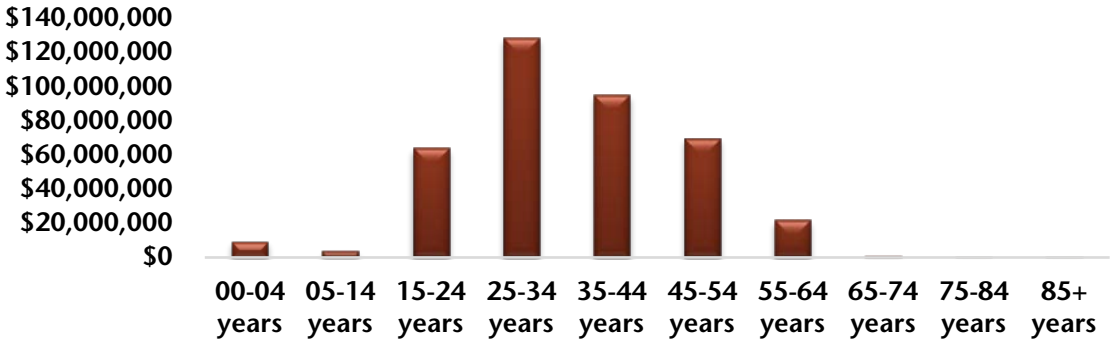
Total productivity loss due to drug-attributable deaths is estimated at $391.4 million. About 27 percent of the productivity loss attributed to drugs ($107.5 million) is associated with female deaths. The remaining 73 percent ($284.0 million) is associated with male deaths).

Table 19. Estimated Productivity Loss in Alaska, Primary Cause Drug-Attributable Mortality, by Age and Gender, Annual Average Deaths 2010-2014, $2014

	Annual Ave. Drug Attributable Deaths	Net Present Value of Future Earnings (3% Discount Rate)	Estimated Loss Due to Drugs ($)
Females			
0-4 years	1.6	$2,240,253	$3,584,405
5-14 years	0.6	$2,641,089	$1,584,653
15-24 years	6.2	$3,056,355	$18,949,401
25-34 years	10.8	$2,847,565	$30,782,178
35-44 years	13.3	$2,185,690	$29,161,476
45-54 years	13.3	$1,343,687	$17,825,352
55-64 years	10.0	$532,092	$5,306,021
65-74 years	2.2	$122,750	$272,996
75-84 years	0.5	$22,338	$11,437
85+ years	0.2	$1,113	$223
Females Total	**58**	**-**	**$107,478,142**
Males			
0-4 years	1.8	$3,028,719	$5,451,694
5-14 years	0.6	$3,572,336	$2,143,402
15-24 years	10.6	$4,225,625	$44,791,625
25-34 years	23.3	$4,185,264	$97,374,352
35-44 years	19.3	$3,390,101	$65,537,433
45-54 years	23.3	$2,214,940	$51,581,523
55-64 years	17.2	$960,192	$16,492,258
65-74 years	2.2	$250,985	$547,147
75-84 years	0.9	$48,252	$41,304
85+ years	0.4	$4,054	$1,622
Males Total	**100**	**-**	**$283,962,359**
Overall Total	**158**	**-**	**$391,440,502**

Note: Due to rounding columns may not add to totals. For universal understanding, the term, "primary" is substituted for the official term, "underlying."
Source: Death counts provided by DHSS' BVS' unpublished data, and McDowell Group calculations. Drug attribution rates from CDC's Vital Statistics; Patra et al., and Rogers et. al. Net present value of future earnings from Wendy Max, Dorothy Rice, Hai-Yen Sung, Martha Michel, *"Valuing Human Life: Estimating the Present Value of Lifetime Earnings, 2000"* (2004). Values have been adjusted for inflation from ADOLWD Research and Analysis, http://laborstats.alaska.gov/cpi/cpi.htm.

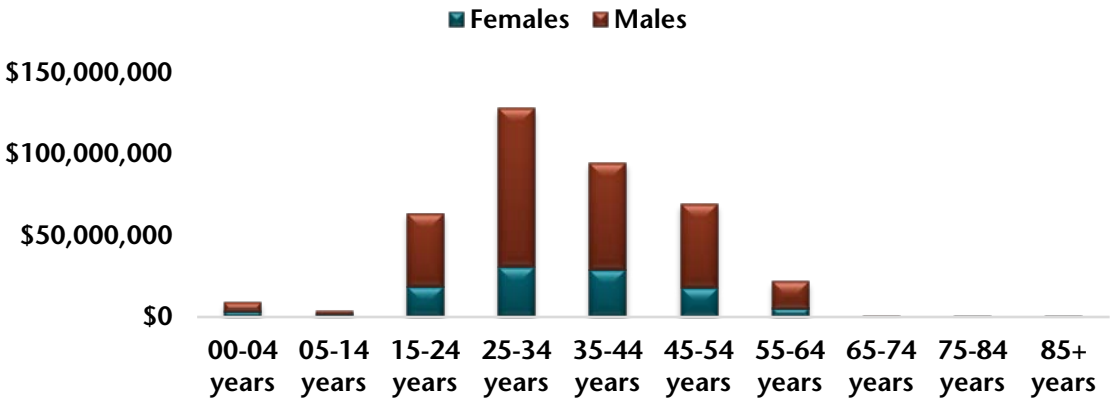
Figure 18. Estimated Productivity Loss in Alaska, Primary Cause Drug-Attributable Mortality, by Age Group and Gender, Annual Average Deaths, 2010-2014, $2014



Note: The term, "primary" is substituted for the official term, "underlying" because it is more commonly understood.
Source: DHSS' BVS' unpublished data, McDowell Group calculations, CDC's Vital Statistics, Patra et al., Rogers et al., Max et al., and DOLWD.

In 2014 dollars, the age group with the largest loss was 25 to 34 years, followed by 35 to 44 years, and 45 to 54 years.

Figure 19. Estimated Productivity Loss in Alaska, Primary Cause Drug-Attributable Mortality, by Age Group and Gender, Annual Average Deaths, 2010-2014, $2014



Note: The term, "primary" is substituted for the official term, "underlying" because it is more commonly understood.
Source: DHSS' BVS' unpublished data, McDowell Group calculations, CDC's Vital Statistics, Patra et al., Rogers et al., Max et al., and ADOLWD.

Estimated Productivity Losses for Contributing (Not Primary) Cause of Death

Another way to estimate productivity loss is to consider substance abuse-related deaths when the primary cause of death was not alcohol and/or drug-attributable, but rather a contributing cause and the attributable fraction assigned to that cause is 100 percent (see Tables 58-60 in the appendix for details on which causes of death are 100 percent attributable).

For the purposes of this study, deaths attributed to drugs was not separated from those attributed to alcohol. Based on this methodology, the number of substance abuse-attributable deaths between 2010 and 2014 is 1,970, for an annual average of 394 alcohol and/or drug-related deaths per year from 2010-2014.

For all deaths where alcohol and/or drugs were a contributing cause and where the attribution rate assigned to the cause was 100 percent due to alcohol or drugs, there was an estimated productivity loss of $708.9 million.

Females had an annual average of 152 deaths per year for a productivity loss of $211.5 million (30 percent of total), while males averaged 242 deaths per year for a productivity loss of $497.4 million (70 percent of total). The age group with the highest productivity loss was ages 45-54, followed by ages 25-34, and 35-44.

Estimated Value of Potential Years of Life Lost (PYLL)

Yet another way to see the impact of mortality due to drugs is by calculating the potential years of life lost (PYLL). These estimates are based on an average 75-year lifespan for both males and females, and are based on a person's age at the time of their death and how many years they would have been expected to live if drugs had not been a factor in their deaths.

Using the PYLL method, between 2010 and 2014, there were 618 deaths attributable to drugs for a total of 20,067 PYLL per year. No attempt was made to calculate a monetary value for PYLL.

Table 20. Estimated PYLL (Potential Years of Life Lost) Due to Drug-attributable Causes in Alaska, 2010-2014

Cause	Total Number of Drug Attributable Deaths	PYLL Attributable to Drugs	Average PYLL Per Year
Directly attributable (100 percent)	557	18,391	3,678
Partially attributable <100 percent	61	1,636	327
Total	**618**	**20,027**	**4,005**

Note: Due to rounding columns may not add to totals.
Source: Death counts provided by DHSS' BVS' unpublished data, and McDowell Group calculations. Drug attribution rates from CDC's Vital Statistics; Patra et al., and Rogers et. al.

Lost Productivity Due to Incarceration

Alaska also experiences lost productivity from people incarcerated because of drugs. Incarcerated individuals may commit a crime directly related to drug use, such as driving while intoxicated or selling narcotics. They may also commit crimes when they are under the influence of a drug or to obtain more drugs. It is assumed incarcerated adults could otherwise be productive members of the workforce or in households. Therefore, their absence from society due to incarceration is an economic loss for Alaska.

The table below shows the number of inmates in Alaska by offense category, the percentages of crimes attributable to drugs, the estimated numbers of inmates attributed to drugs, and the estimated total number of inmates attributed to drug abuse. In 2014, there were 3,302 inmates incarcerated in Alaska for the specified offenses. Of those inmates incarcerated 734 were attributed to drugs (22 percent of inmates incarcerated for these specific offenses).

(See table next page.)

Table 21. Incarcerations Attributed to Drug Abuse by Offense in Alaska, 2014

Type of Offense	2014 Alaska Inmates by offense category [1]	Percent Attributed to Drugs [2]	Estimated Number Attributed to Drugs
Alcohol offenses	340	0%	0
Assault	749	6%	48
Burglary	108	34%	36
Drug offenses	433	100%	433
Homicide/murder/ manslaughter	429	7%	31
Larceny-theft	286	39%	112
Motor vehicle theft	49	18%	9
Prostitution	2	12%	0
Robbery	130	28%	36
Sexual offenses	776	4%	29
Total	**3,302**		**734**

[1] Alaska Department of Corrections (DOC), *"Alaska Offender Profile, 2014"* (2015). http://www.correct.state.ak.us/admin/docs/Final_2014_Profile.pdf
2 U.S. Department of Justice National Drug Intelligence Center (NDIC), *"The Economic Impact of Illicit Drug Use on American Society 2011"* (2011).

To estimate the cost of lost productivity, the study team obtained median individual annual average earnings for Alaska's population 16 or older by gender from the ACS 2010-2014 Five-Year Data. These earnings (adjusted for inflation to 2014 dollars) were $42,923 (+/-$800) for males and $30,441 (+/-$400) for females. The estimated cost of lost productivity due to incarceration related to drug abuse in Alaska in 2014 was $29.7 million; $4.4 million from women (15 percent) and $25.4 million from men (85 percent).[8]

Table 22. Cost of Lost Productivity by Gender in Alaska, 2014

Estimated Number	Attributed to Drugs[1]	Total[1]	Median Earnings[2]	Earnings Lost Due to Incarceration Due to Drugs
Females incarcerated	143	249	$30,441	$4,353,063
Males incarcerated	591	1,483	$42,923	$25,367,493
Total	**734**	**1,732**		**$29,720,556**

Source: [1] McDowell Group calculations based on DOC and NDIC drug attribution rates. [2] American Community Survey (ACS) 2010-2014 Five-Year Data.

Losses Due to Diminished Productivity

Drug dependence or abuse can impair an individual's productivity in employment (physical and/or mental impairment; ability, willingness, or motivation to work or find a job; etc.) and non-employment activities (household chores, parenting, etc.). These estimates address only workplace earnings. While non-employment impacts are important, there is no generally accepted method to compute monetary values for household activities.

[8] The large differential between men and women is partly because of men's higher earnings but mainly because men are a much larger proportion of the prison population than women.

Two different estimates of impaired productivity losses in traditional earnings are presented below. The first is for individuals who reported drug dependence in the past year, while the second is for individuals who reported drug dependence or abuse in the past year. The estimates cannot be added together as there is overlap.

In 2014, there was an estimated loss of $81.4 million in labor force earnings due to drug dependence. Males lost an estimated $48.0 million (59 percent) and females an estimated $33.4 million (41 percent).

Table 23. Alaska Labor Force Earnings Losses, Workers with a History of Drug Dependence, by Gender, 2014

	Male	Female	Total
2014 Alaska population 15+ years [1]	300,185	278,476	**578,661**
2013-2014 Annual average percentage of population 12+ years reporting past year drug dependence [3]	2.2%	2.2%	-
2014 Estimated number of Alaskans 15+ years dependent	6,574	6,099	**12,673**
2010-2014 Median Alaska individual annual average earnings [4]	$42,923	$30,441	-
Loss in productivity from drug dependence [2]	17.0%	18.0%	-
Estimated productivity loss due to drug dependence	**$47,970,262**	**$33,416,681**	**$81,386,943**

Note: Due to rounding, some columns may not sum to total.
[1] Alaska Department of Labor and Workforce Development's 2014 population estimates.
[2] U.S. Department of Justice National Drug Intelligence Center (NDIC), *"The Economic Impact of Illicit Drug Use on American Society 2011"* (2011).
[3] SAMHSA's "*National Survey on Drug Use and Health, 2013 and 2014 – Alaska*" (2014).
[4] American Community Survey (ACS) 2010-2014 Five-Year Data.

The loss in productivity for individuals who reported past year drug dependence or abuse was estimated to be $119.3 million in 2014. Males lost an estimated $70.3 million (59 percent) and females an estimated $49.0 million (41 percent).

Table 24. Alaska Labor Force Earnings Losses, Workers with a History of Drug Dependence or Abuse, by Gender, 2014

	Male	Female	Total
2014 Alaska population 15+ years [1]	300,185	278,476	**578,661**
2013-2014 Annual average percentage of population 12+ years reporting past year drug dependence or abuse [3]	3.2%	3.2%	-
2014 Estimated number of Alaskans 15+ years dependent or abusing	9,636	8,939	**18,575**
2010-2014 Median Alaska individual annual average earnings [4]	$42,923	$30,441	-
Loss in productivity from drug dependence [2]	17.0%	18.0%	-
Estimated productivity loss due to drug dependence or abuse	**$70,312,576**	**$48,980,614**	**$119,293,190**

Note: Due to rounding, some columns may not sum to total.
[1] Alaska Department of Labor and Workforce Development's 2014 population estimates.
[2] NDIC, *"The Economic Impact of Illicit Drug Use on American Society 2011"* (2011).
[3] SAMHSA's "*National Survey on Drug Use and Health, 2013 and 2014 – Alaska*" (2014).
[4] American Community Survey (ACS) 2010-2014 Five-Year Data.

Lost Productivity Due to Drug Treatments

When individuals are admitted to a medical facility for treatment of drug dependence or abuse, they may lose time that would otherwise be spent in the workforce. This results in economic loss due to reduced employment, production, and services. To estimate that loss, this report quantifies potential earnings forfeited by clients admitted to DBH Treatment and Recovery grantee agencies for 24-hour detoxification or residential services.

In SFY 2015, admission to 24-hour detoxification and residential treatment services resulted in an estimated loss of potential earnings of $1.4 million associated with drug abuse/dependence. These lost earnings were associated with 42,376 bed days for drug treatment.

Table 25. Number of 24-Hour Detoxification and Residential Bed Days and Estimated Lost Earnings from Drug-related Admissions, SFY 2015

	Number/$Amount
Number of bed days	42,376
Estimated Lost Earnings	$1,356,861

Source: Total number of bed days estimates calculated from data provided by the State of Alaska Division of Behavioral Health.

Incomes varied widely for clients receiving services at residential treatment and detoxification facilities. More than half reported annual incomes of $0 or less than $5,000. Estimates of lost earnings per day ranged from $0 to $143.

Table 26. Number of Clients Who Received 24-Hour Detoxification or Residential Treatment Services, Number of Bed Days for Those Clients, and Estimated Lost Earnings, Attributable to Drugs, by Client Income Range, SFY 2015

Income Range	# of Clients	% of Clients	Estimated # of Drug Bed Days	Estimated Earnings per Day	Estimated Lost Earnings due to Drug Abuse
<18 years	110	5.20%	2,215	$0	$0
$0-4,999	1,176	55.9	23,685	7	169,697
$5,000-9,999	147	7.0	2,961	21	63,644
$10,000-$19,999	257	12.2	5,176	43	222,509
$20,000-29,999	151	7.2	3,041	72	217,880
$30,000-39,999	70	3.3	1,410	100	141,432
$40,000-49,000	53	2.5	1,067	129	137,606
$50,000+	140	6.7	2,820	143	404,092
Total	**2,104**	**100%**	**42,376**		**$1,356,861**

Source: Estimates calculated from data provided by the State of Alaska Division of Behavioral Health.

Lost Productivity Due to Drug Abuse Related Medical Conditions

In SFY 2015, 3,197 lost days of work for medical treatment of diseases and conditions attributable to drug abuse resulted in an estimated $613,824 in lost earnings (not including drug treatment programs (see above)).

Table 27. Total Length of Stay for Inpatient and ED Treatment of Diseases and Conditions Attributable to Drug Abuse, and Subsequent Lost Potential Earnings, SFY 2015

Total Inpatient Length of Stay (days)*	Total ED Length of Stay (days)*	Total Length of Stay (days)	Average Earnings per Day**	Estimated Lost Potential Earnings
1,866	1,331	3,197	$192	$613,824

Source: *Alaska Hospital Facilities Data Reporting Program (HRFP); **Based on DOLWD wage data.

Chapter 3: Vehicle Traffic Collisions

Summary

- In 2011, 704 vehicle traffic collisions in Alaska were attributed to impaired (alcohol and/or drug) drivers, costing approximately $990.5 million.
- Impaired traffic collisions represented about 6 percent of all traffic collisions (a total of 12,576 collisions) in Alaska.
- Of the impaired collisions, 54 percent involved property damage only, 33 percent resulted in minor injuries, 9 percent resulted in major injuries, and 4 percent caused a fatality.
- 1,680 persons were involved in the 704 impaired-related collisions; 229 people had minor injuries, 64 had major injuries, and there were 30 fatalities.
- Of the $990.5 million in estimated costs due to substance abuse-related traffic collisions, approximately 40 percent (or $396.2 million) are related to drug abuse.

Impaired Traffic Collisions

DOTPF maintains records of all traffic collisions in Alaska by injury severity, including impaired (alcohol and/or drug) collisions. DOTPF data does not distinguish between alcohol and drug-related collisions. National Highway Traffic Safety Administration (NHSTA) estimates of the average costs per crash were used to develop the following table of unit costs of impaired traffic collisions in Alaska for 2011. While DOTPF maintains records of off-road vehicle collisions such as ATVs and snowmachines that occur on roadways, no record is kept of those incidences that occur off-road.

(See table next page.)

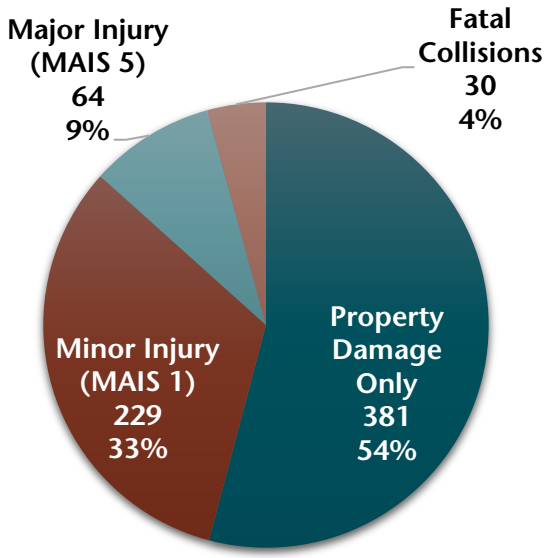
Table 28. Unit Costs of Impaired (Alcohol and/or Drugs) Traffic Collisions in Alaska, 2011

	Property Damage Only	Minor Injury	Major Injury	Fatal
Type of Cost				
Medical	$0	$4,425	$578,183	$16,704
Emergency services	$40	$126	$1,209	$1,275
Market productivity	$0	$4,158	$489,605	$1,635,627
Household productivity	$85	$1,330	$138,874	$445,824
Insurance administration	$270	$5,436	$104,769	$40,043
Workplace costs	$88	$482	$15,681	$16,659
Legal costs	$0	$1,996	$121,803	$150,558
Congestion costs	$1,523	$1,568	$2,162	$8,087
Property damage	$3,455	$7,640	$21,338	$15,852
Quality-adjusted life years (QALYs)	$0	$34,473	$7,028,039	$12,010,805
Total	**$5,460**	**$61,635**	**$8,501,664**	**$14,341,436**

Source: U.S. Department of Transportation National Highway Traffic Safety Administration (NHSTA) "T*he Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)"* (2015). http://www-nrd.nhtsa.dot.gov/pubs/812013.pdf.

In 2011, there were 704 impairment-caused traffic collisions reported in Alaska, 6 percent of the 12,576 total traffic collisions in the state. Of the impaired collisions, those with property damage only totaled 381 (54 percent of impaired collisions), 229 collisions (33 percent) resulted in minor injuries, 64 (9 percent) resulted in major injuries, and 30 collisions (4 percent) had a fatality. The figure below shows impaired-related traffic collisions by injury severity.

Figure 20. Impairment-caused (Alcohol and/or Drug) Traffic Collisions, by Type, in Alaska, 2011



Source: Alaska Department of Transportation and Public Facilities (DOTPF), "2011 Alaska Traffic Crashes" (2015). http://www.dot.alaska.gov/stwdplng/transdata/pub/accidents/2011_AK_CrashData.pdf.

The table below shows the 704 Alaska impairment-caused collisions by type and by injury, including property damage only, minor and major injuries, fatalities, and the total cost. Total cost of the impairment-caused collisions in Alaska in 2011 was $990.5 million. The highest costs resulted from fatal collisions which totaled $430.2 million.

In all, it is estimated that approximately 40 percent (or $396.2 million) of the impairment-related collisions in Alaska is related to drug abuse.

Table 29. Number of Impairment-caused Traffic Collisions and Cost of Collisions in Alaska, 2011

	Property Damage Only	Minor Injury	Major Injury	Fatal	Total
Number of Alaska Impaired Collisions[1]	**381**	**229**	**64**	**30**	**704**
Type of Costs [2]					
Medical	$0	$1,013,364	$37,003,719	$501,131	$38,518,214
Emergency services	$15,082.97	$28,816	$77,366	$38,259	$159,523
Market productivity	$0	$952,213	$31,334,749	$49,068,804	$81,355,767
Household productivity	$32,321	$304,669	$8,887,945	$13,374,724	$22,599,660
Insurance administration	$102,887	$1,244,903	$6,705,230	$1,201,293	$9,254,314
Workplace costs	$33,398	$110,406	$1,003,586	$499,782	$1,647,172
Legal costs	$0	$457,166	$7,795,412	$4,516,746	$12,769,324
Congestion costs	$580,156	$359,063	$138,354	$242,617	$1,320,189
Property damage	$1,316,528	$1,749,664	$1,365,622	$475,563	$4,907,377
Quality-adjusted life years (QALYs)	$0	$7,894,209	$449,794,521	$360,324,164	$818,012,894
Total	**$2.1 million**	**$14.1 million**	**$544.1 million**	**$430.2 million**	**$990.5 million**
Estimated portion attributed to drug abuse (40 percent)					**$396.2 million**

Note: Due to rounding, some columns may not sum to total.
[1] DOTPF, "2011 Alaska Traffic Crashes" (2015). http://www.dot.alaska.gov/stwdplng/transdata/pub/accidents/2011_AK_CrashData.pdf.
[2] NHSTA, "T*he Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)"* (2015). http://www-nrd.nhtsa.dot.gov/pubs/812013.pdf.

Lastly, while there are no cost estimates available, DOTPF also reports the number of persons who were involved in impaired (alcohol and/or drug-related) collisions. People involved include occupants of the impaired driver's car, occupants of other cars, or pedestrians. In 2011, there were 1,680 persons involved in impairment-caused collisions; 229 had minor injuries, 64 had major injuries, and 32 were fatalities.

Chapter 4: Criminal Justice and Protective Services

Summary

- In 2014, there were 9,572 drug-related offenses and arrests, representing 27 percent of all offenses. These offenses affected 12,237 victims and resulted in $277 million in criminal justice system and crime victim costs.

Table 30. Summary of Criminal Justice Costs Attributable to Drug Abuse in Alaska, 2014

	Drug-Related
Counts	
Offenses and arrests	9,572
Percentage offenses-arrests	27%
Crime victims	12,237
Percentage crime victims	29%
Costs	
Criminal justice system	$73.4 million
Crime victim – tangible costs	$28.5 million
Crime victim – intangible costs	$175.4 million
Drug Abuse Criminal Justice Costs	**$277.3 million**

Source: McDowell Group calculations.

- In SFY 2015, Office of Children Services (OCS) expenditures for child abuse and neglect attributable to drug abuse totaled an estimated $37 million.

Criminal Justice

Alaskans dependent on or abusing drugs play a role in crimes. Drug abuse can be directly attributed to crimes such as driving under the influence or the sale of illegal drugs and other violent and nonviolent crimes. Many costs accompany these crimes including the costs of the criminal justice system (police protection and law enforcement, legal and adjudication, and incarceration), and costs to crime victims (both tangible and intangible). Productivity loss due to incarceration is covered in Chapter 2.

Offenses and Arrests

In 2014, among the 11 types of offenses or arrests in the table below, 9,572 (27 percent) were attributable to drug abuse. The offenses with the highest counts attributable to drugs were larceny-theft (6,002), drug laws (1,159), and burglary (1,054).

Table 31. Offenses and/or Arrests Attributable to Drug Abuse in Alaska, 2014

Type of Offense	2014 Alaska Number of Known Offenses or Arrests	Percent Attributable to Drug Abuse [3]	Estimated Offenses/Arrests Attributable to Drug Abuse
Criminal homicide [1]	47	7%	3
Sexual assault (rape and attempted) [1]	764	4%	28
Aggravated assault [1]	3,224	5%	164
Other assault [1]	8,799	8%	669
Robbery [1]	627	28%	176
Burglary [1]	3,136	34%	1,054
Larceny-theft [1]	15,350	39%	6,002
Motor vehicle theft [1]	1,730	18%	306
Stolen goods [2]	24	27%	6
Prostitution (commercialized vice) [2]	36	12%	4
Drug laws [2]	1,159	100%	1,159
Total	**34,896**		**9,572**

1 DPS, *Crime in Alaska, 2014* (2015). http://www.dps.alaska.gov/statewide/docs/UCR/UCR_2014.pdf.
[2] FBI UCR (2015). https://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2014/crime-in-the-u.s.-2014/tables/table-69.
[3] U.S. Department of Justice National Drug Intelligence Center (NDIC), *The Economic Impact of Illicit Drug Use on American Society 2011* (2011).

Criminal Justice System Costs

The estimated cost of drug abuse to the criminal justice system in Alaska in 2014 was $73.4 million. Larceny-theft produced the largest costs, an estimated $27.0 million, followed by drug-law infractions ($19.5 million), and other assaults ($9.0 million). It should be noted that incarceration data does not include Alaska Statute Title 47 Protective Holds by the Department of Corrections.

Table 32. Criminal Justice System Costs Attributable to Drug Abuse by Offense in Alaska, 2014

Type of Offense	Estimated Alaska Offenses/Arrests Attributable to Drug Abuse	Criminal Justice System Cost per Arrest/Offense	Estimated Alaska Drug-Related Costs
Criminal homicide [1]	3	$612,035	$2,071,127
Sexual assault (rape and attempted) [1]	28	$41,305	$1,167,608
Aggravated assault [1]	164	$13,479	$2,216,306
Other assault [1]	669	$13,479	$9,013,872
Robbery [1]	176	$21,569	$3,786,640
Burglary [1]	1,054	$6,438	$6,783,444
Larceny-theft [1]	6,002	$4,491	$26,954,251
Motor vehicle theft [1]	306	$6,032	$1,847,115
Stolen goods [1]	6	$10,673	$69,161
Prostitution (commercialized vice) [2]	4	$9,085	$40,555
Drug laws [2]	1,159	$16,797	$19,468,013
Total	**9,572**		**$73.4 million**

[1] National Institute of Health (NIH), *The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation* (2010). http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2835847/pdf/nihms170575.pdf
[2] NIH National Institute on Drug Abuse (NIDA), *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992* (1998).

Crime Victimization

There were approximately 41,992 victims of the crimes in the table below in Alaska in 2014; 12,237 victims were involved in crimes associated with drug abuse, or approximately 29 percent of victims.

Table 33. Victimizations Attributable to Drug Abuse in Alaska, 2014

Type of Crime	2014 U.S. Victimization Rate per 1,000 persons 12 years or older or per 1,000 households [1]	Estimated Number of Alaska Victims [3, 4]	Percent Drug Related [5]	Estimated Number of Victims Attributable to Drug Abuse
Homicide	-	47 [2]	7%	3
Rape/sexual assault	1.1	670	5%	34
Robbery	2.5	1,523	28%	427
Aggravated assault	4.1	2,498	5%	127
Other assault	12.4	7,555	8%	574
Theft	90.8	22,852	39%	8,935
Burglary	23.1	5,814	34%	1,953
Motor vehicle theft	4.1	1,032	18%	183
Total		**41,992**		**12,237**

[1] BJS, *Criminal Victimization, 2014* (2015). http://www.bjs.gov/content/pub/pdf/cv14.pdf.
[2] DPS, *Crime in Alaska, 2014* (2015). http://www.dps.alaska.gov/statewide/docs/UCR/UCR_2014.pdf.
[3] 2014 population data from DOLWD.
[4] 2014 household data from ACS 2010-2014 Five-Year Data.
[5] NDIC, *The Economic Impact of Illicit Drug Use on American Society 2011* (2011).

Crime Victim Tangible Costs

The estimated tangible cost to victims attributable to drug abuse for Alaska in 2014 was $28.5 million. The offense with the highest cost was other assaults ($7.8 million), followed by theft ($6.7 million), and burglary ($4.2 million).

Table 34. Crime Victim Tangible Costs Attributable to Drug Abuse in Alaska, 2014

Type of Offense	Estimated Number of Victims Attributable to Drug Abuse	Crime Victim Tangible Cost Per Offense [1]	Estimated Alaska Drug-Related Tangible Costs
Homicide [2]	3	$1,150,463	$3,893,165
Rape/sexual assault	34	$8,667	$296,249
Robbery	427	$5,146	$2,194,886
Aggravated assault	127	$13,571	$1,729,040
Other assault	574	$13,571	$7,792,668
Theft	8,935	$749	$6,690,361
Burglary	1,953	$2,125	$4,150,248
Motor vehicle theft	183	$9,537	$1,741,920
Total	**12,237**		**$28.5 million**

[1] NIH, *The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation* (2010). http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2835847/pdf/nihms170575.pdf
[2] Crime victim cost for murder was calculated as the mean present value of lifetime earnings for a homicide victim.

The estimated intangible cost to victims attributable to drug abuse for Alaska in 2014 was $175.4 million. The offense with the highest cost was other assaults ($85.1 million), followed by homicide ($44.6 million), and aggravated assaults ($18.9 million).

Table 35. Crime Victim Intangible Costs Attributable to Drug Abuse in Alaska, 2014

Type of Offense	Estimated Number of Victims Attributable to Drug Abuse	Crime Victim Intangible Cost Per Offense	Estimated Alaska Drug-Related Intangible Costs
Homicide	3	$13,168,788 [2]	$44,563,180
Rape/sexual assault	34	$311,424	$10,645,019
Robbery	427	$35,215	$15,019,568
Aggravated assault	127	$148,228	$18,884,888
Other assault	574	$148,228	$85,112,954
Theft	8,935	$16	$139,383
Burglary	1,953	$501	$978,142
Motor vehicle theft	183	$409	$74,646
Total	**12,237**		**$175.4 million**

[1] NIH, *"The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation"* (2010). http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2835847/pdf/nihms170575.pdf
[2] Intangible cost for murder was calculated as the mean value of a statistical life.

Protective Services

Substance abuse is a risk factor for abuse and neglect of children and adults. A 1999 study by the National Center on Addiction and Substance Abuse at Columbia University found that substance-abusing parents were three times more likely to abuse and four times more likely to neglect their children. Likewise, an adult caregiver who struggles with substance use is more likely to abuse his or her charge. Because of alcohol and drug abuse, agencies that assist victims of abuse and neglect see more cases and incur greater costs.

The National Survey of Children and Adolescent Well-Being estimates that 61 percent of infants and 41 percent of older children in out-of-home care are from families with active alcohol or drug abuse (Wulczyn, Ernst, & Fisher, 2011). For almost 31 percent of all children placed in foster care in 2012, parental alcohol or drug abuse was the documented reason for removal and in several states that percentage surpassed 60 percent (National Data Archive on Child Abuse and Neglect, 2012)

Child Protective Services

Office of Children Services (OCS) expenditures for child abuse and neglect attributable to drug abuse are estimated at $37 million in SFY2014.

Table 36. Summary of OCS Expenditures Attributable to Drugs, SFY 2015

State Spending	Federal Spending	Total
$25,139,125	$11,493,850	$36,632,975

Source: State of Alaska 2014 Actual Expenditures

Title 47 Protective Custody

The Title 47 Protective Custody Statute allows the State of Alaska to take people who are incapacitated by drugs or otherwise at-risk to a hospital for treatment, place them in the custody of a family member, or commit them to a detention center for up to 12 hours. In SFY2013, there were a total of 3,726 protective holds; however, it is estimated by DOC personnel that most (up to 99 percent) of these holds were related to alcohol, not drugs.

Summary

- Hospital-related medical costs to treat conditions and diseases attributable to drug abuse totaled $17.8 million in 2012, including $14.6 million in inpatient charges, and $3.1 million in ED charges. Adjusted for inflation, in 2015, these costs would be $15.1million in inpatient charges and $3.2 million in ED charges, for a combined total of $18.3 million.

Table 37. Summary of Alaska Medical Charges Attributable to Drug Abuse, 2012 and 2015$

	Inpatient Charges	Emergency Department Charges	Total Medical Charges
Total (2012)	$14,603,710	$3,147,428	$17,751,138
Drug Abuse Total (2016$)	**$15,075,863**	**$3,249,187**	**$18,325,050**

- In SFY 2015, Division of Behavior Health funding for drug dependence/abuse to treatment and recovery grantee agencies accounted for an estimated $23.5 million for drug treatment.
- In 2015, an estimated $2.5 million in HIV/AIDS medical costs were attributable to injected drug use in Alaska.
- In 2015, an estimated $90 million in treatment costs were associated with 1,009 new hepatitis C cases attributable to injected-drug use.
- In total, annual drug-abuse-related health care costs totaled $134.3 million in 2015.

Medical Costs

Drug abuse leads to medical conditions and diseases that require treatment in medical settings. This section covers the costs to treat diseases and conditions that arise from the abuse of drugs. Medical costs are presented for two hospital setting types: inpatient and ED. Costs for treating addiction may be found in the *Costs of Treating Drug Dependence* section below.

Inpatient

Some of the health problems caused by drug abuse require admission to a hospital. In 2012, inpatient charges in Alaska attributable to drug abuse totaled $14.6 million. Adjusted to 2015 dollars, the total inpatient charges for drug abuse would be $18.3 million. The number of admissions attributable to drug abuse totaled 511 admissions. The total length of hospital stays resulting from those admissions was 1,866 days.

Table 38. Summary of Alaska Inpatient Hospital Admissions, Length of Stay, and Total Charges Attributable to Drug Abuse, 2012 and Adjusted 2015$

	Number of Admissions	Length of Stay (days)	Total Charges
Total	511	1,866	14,603,710
Total (2015$)			**$15,075,863**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). McDowell Group estimates.

Emergency Department (ED) Costs

Some patients with health problems caused by drug abuse receive treatment in the ED. In 2012, statewide ED charges attributable to drug abuse totaled $3.1 million. Adjusted to 2015 dollars, the total attributable to drug abuse would be $3.2 million. The number of ED visits attributable to drug abuse totaled 1,331. The number of days patients spent in the ED as a result of those visits totaled 1,331 days for drug-related treatment.

Table 39. Summary of Alaska ED Visits, Length of Stay, and Total Charges Attributable to Drug Abuse, Alaska, 2012 and Adjusted 2015$

	Number of Visits	Length of Stay (days)	Total Charges ($)
Total	1,331	1,331	3,147,428
Total (2015$)			**$3,249,187**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). McDowell Group estimates.

Table 40. Inpatient Hospital Admissions, Length of Stay, and Charges, HFDR Total and Attributable to Drugs, Alaska, 2012

Diagnosis or Condition	Age	Total Inpatient Stays # of Discharges	Total Inpatient Stays Length of Stay (days)	Total Inpatient Stays Charges	Attributable Fraction (%)	Attributable to Drugs # of Discharges	Attributable to Drugs Length of Stay (days)	Attributable to Drugs Charges
Drug mental disorders and psychoses	All	81	301	1,765,897	100%	81	301	$1,765,897
Drug dependence	All	11	39	175,106	100	11	39	175,106
Non-dependent abuse of drugs	All	12	17	152,812	100	12	17	152,812
Polyneuropathy due to drugs	All	-	-	-	100	-	-	-
Drug dependence complicating pregnancy, childbirth, or puerperium	All	19	51	316,852	100	19	51	316,852
Drugs affecting fetus or newborn via placenta or breast	All	1	6	20,934	100	1	6	20,934
Drug withdrawal syndrome in newborn	All	7	134	741,742	100	7	134	741,742
Fetal damage due to drugs	All	-	-	-	100	-	-	-
Poisoning by opiates and related narcotics	All	71	233	2,239,419	100	71	233	2,239,419
Poisoning by sedatives and hypnotics	All	17	81	667,249	100	17	81	667,249
Poisoning by CNS muscle tone depressants	All	3	3	49,896	100	3	3	49,896
Poisoning by psychotropic agents	All	129	412	3,668,507	100	129	412	3,668,507
Poisoning by CNS stimulants	All	7	29	424,183	100	7	29	424,183
Total		**358**	**1,306**	**10,222,597**		**358**	**1,306**	**$10,222,597**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). McDowell Group estimates.

Table 41. Inpatient Hospital Admissions, Length of Stay, and Charges, Total and Attributable to Drugs, Alaska, 2012

	HFDR Attributable to Drugs Total # of Admissions	HFDR Attributable to Drugs Total Length of Stay (days)	HFDR Attributable to Drugs Total Charges	Estimation Factor	Statewide Estimate # of Admissions	Statewide Estimate Length of Stay (days)	Statewide Estimate Charges
Total	358	1,306	10,222,597	÷ 0.7	511	1,866	14,603,710

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). McDowell Group estimates.

Table 42. Emergency Department Visits, Length of Stay, and Charges, Total and Attributable to Drug Abuse, Alaska, 2012

Diagnosis or Condition	Age	Total Inpatient Stays			Attributable Fraction (%)	Attributable to Drugs		
		# of Discharges	Length of Stay (days)	Charges		# of Discharges	Length of Stay (days)	Charges
Drug mental disorders and psychoses	All	60	60	142,741	100%	60	60	142,741
Drug dependence	All	145	145	213,566	100	145	145	213,566
Non-dependent abuse of drugs	All	467	467	1,006,730	100	467	467	1,006,730
Polyneuropathy due to drugs	All	-	-	-	100	-	-	-
Drug dependence complicating pregnancy, childbirth, or puerperium	All	4	4	8,239	100	4	4	8,239
Drugs affecting fetus or newborn via placenta or breast	All	-	-	-	100	-	-	-
Drug withdrawal syndrome in newborn	All	-	-	-	100	-	-	-
Fetal damage due to drugs	All	-	-	-	100	-	-	-
Poisoning by opiates and related narcotics	All	104	104	316,497	100	104	104	316,497
Poisoning by sedatives and hypnotics	All	29	29	84,752	100	29	29	84,752
Poisoning by CNS muscle tone depressants	All	1	1	5,756	100	1	1	5,756
Poisoning by psychotropic agents	All	116	116	404,983	100	116	116	404,983
Poisoning by CNS stimulants	All	6	6	19,936	100	6	6	19,936
Total		**932**	**932**	**$2,203,200**		**932**	**932**	**$2,203,200**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). McDowell Group estimates.

Table 43. ED Visits, Length of Stay, and Charges, Total and Attributable to Drug Abuse, Alaska, 2012

	HFDR Attributable to Drugs Total			Estimation Factor	Statewide Estimate		
	# of Visits	Length of Stay (days)	Charges		# of Visits	Length of Stay (days)	Charges
Total	932	932	$2,203,200	÷ 0.7	1,331	1,331	$3,147,428

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). McDowell Group estimates.

Costs of Treating Drug Dependence or Addiction

Some individuals who are drug dependent need detoxification, treatment, and/or support services. In SFY 2015, agencies receiving DBH treatment and recovery grants logged 4,295 admissions for drug abuse disorders, with 31 percent for drugs only, and 69 percent for both alcohol and drug abuse.

Table 44. Percent of Admissions for Drug Only and Both Alcohol and Drug Treatment, by Treatment Setting, SFY 2015

Substance of Abuse	# of Admissions	% of Total
Drug Only	1,318	31%
Alcohol and Drug	2,977	69%
Total	**4,295**	**100%**

Source: State of Alaska Division of Behavioral Health.

Each admission could include enrollment in more than one service type. Of the 4,721 admissions, 1,140 were associated with drugs only, and 3,311 were associated with both alcohol and drugs.

Table 45. Number of Enrollments for Drug Treatment, by Service Type, SFY 2015

Service Type	# Enrollments for Drugs	% of Total	# of Enrollments for Both Alcohol and Drugs	% of Total	Total Enrollments
24-Hr Detoxification	291	21%	576	17%	867
Residential	334	24%	728	22%	1,062
Outpatient	702	50%	2,002	60%	2,704
Outpatient-Opioid	83	3%	5	<1%	88
Total	**1,410**	**100%**	**3,311**	**100%**	**4,721**

Note: Due to rounding some columns may not total. Residential and outpatient treatment settings included 2 and 20 admissions, respectively, without information on the substance of abuse. These admissions have been added to the "Alcohol and Drug Abuse" category.
Source: State of Alaska Division of Behavioral Health

In SFY 2015, admissions to 24-hour detoxification and residential services resulted in an estimated 42,376 associated with drugs. A total of 94 percent of these bed days were through residential services.

Table 46. Bed Days at Drug Abuse Treatment, by Treatment Setting, SFY 2015

Service Type	Estimated # of Bed Days for Drug Abuse
24-Hr Detoxification	2,511
Residential	39,865
Total	**42,376**

*Note: As described in methodology, percentages are from admissions data.
Source: Estimates calculated from data provided by the State of Alaska Division of Behavioral Health.

In SFY 2015, DBH funding for drug dependence/abuse to treatment and recovery grantee agencies (including grant awards and Medicaid payments for services received in state FY2015) totaled $23.5 million, with $12.2 million from DBH grants and $11.3 million from Medicaid.

Table 47. DBH Grants and Medicaid Funding for Drug Abuse Treatment, by Service Type, SFY 2015

Treatment Setting	Treatment Costs for Drug Abuse
DBH Grants	
24-Hr Detoxification	$1,228,816
Residential	5,446,707
Outpatient	4,342,670
Outpatient-Opioid	1,163,017
DBH Grants Total	**$12,181,210**
Medicaid	
24-Hr Detoxification	$51,541
Residential	3,769,752
Outpatient	7,233,543
Outpatient-Opioid	291,924
Medicaid Total	**$11,346,759**
DBH Grant and Medicaid Total	**$23,527,969**

*Note: As described in methodology, percentages are from admissions data.
Source: State of Alaska Division of Behavioral Health.

Prescription Drugs

Prescription drugs such as buprenorphine, naltrexone, acamprosate calcium, and disulfiram play a role in treating the conditions, disorders, and diseases caused by or related to substance abuse. Prescription drugs also can be acquired illegally and then abused. Both the legal and illegal use of prescription drugs are assessed below.

Legal Use

Hepatitis C treatment contributes to prescription drug costs, especially with the advent of new medications. Those costs are addressed in the hepatitis C section of the report.

Illegal Use

Criminal justice system costs associated with prescription drug cases include costs for law enforcement, legal and adjudication fees, incarceration costs, treatment costs, and loss of productivity. The report addresses those costs elsewhere.

Beyond monetary costs, prescription drug cases place an additional burden on the time and resources of the criminal justice system, and that burden is growing. The Alaska State Troopers 2014 Annual Report marks a rise in the abuse of opiates, both heroin and prescription opioids. From 2012 to 2014, the pounds of heroin seized

rose from 4.93 to 22.42. Likewise, the dosage units of hydrocodone seized rose from 141 to 796 and of OxyContin/OxyCodone from 609 to 1,183.

The 2015 Youth Risk Behavior Survey of Alaska schools reports 6.4 percent of students at traditional high schools had taken prescription drugs (such as OxyContin, Percocet, Vicodin, Codeine, Adderall, Ritalin, or Xanax) without a doctor's prescription in the past 30 days, while 14.6 percent had taken them once or more in their lives. While those figures are worrisome enough, for students at alternative high schools, the percentages are much greater, 19.8 percent for use in the past 30 days and 37.4 percent for use once or more in their lives.

SAMHSA's NSDUH reports that, in 2014, 4.4 percent of all Alaskans age 12 or older, nearly 27,000 people, had used pain relievers in the past year for nonmedical use.

HIV and AIDS Costs

While HIV and AIDS are most often thought of as sexually transmitted diseases, a portion of cases can be attributed to intravenous drug use through the sharing of unhygienic needles. Due to advances in health care for HIV and AIDS, extensive inpatient care is not always required, nor is it as expensive as it was in the past. However, treatment remains costly.

In 2015, there were an estimated 671 people with HIV/AIDS living in Alaska. The Alaska Injection-drug use (IDU) attribution rate suggests there are approximately 132 cases of people living with HIV/AIDS in Alaska attributable to IDU. In 2011, the NDIC estimated the average annual cost of antiretroviral treatment (ART) for an individual with HIV/AIDS at $12,500. Adjusted for inflation and Alaska's medical cost-of-living differential, in 2015, Alaska had an estimated HIV/AIDS medical cost of $2.5 million attributable to injected drug use.

Table 48. Alaska Cases of HIV/AIDS and Estimated Medical Costs, 2015

	2015
Counts	
Number of cases of HIV and HIV with AIDS living in Alaska [1]	671
Alaska IDU attribution rate [1]	19.6%
Estimated number of Alaska cases attributed to IDU	132
Cost	
Annual cost of ART, adjusted for inflation and cost-of-living [2]	$19,250
Total Estimated Medical Cost of HIV/AIDS in Alaska	**$2.5 million**

[1] DHSS Division of Public Health, "*HIV Surveillance Report – Alaska, 1982-2015*" (2016).
[2] U.S. Department of Justice National Drug Intelligence Center (NDIC), *"The Economic Impact of Illicit Drug Use on American Society 2011"* (2011).

Hepatitis B and C Drug Treatment Costs

The estimated costs below pertain only to the drug treatment costs associated with hepatitis and does not include costs associated with hepatitis impacts, such as liver transplants and other impatient or outpatient expenses. These costs are included under the section on medical costs found earlier in this chapter.

Hepatitis B

Per the World Health Organization (WHO), a vaccine that is safe and 95 percent effective for Hepatitis B (HBV) has been available since 1982. However, even in the 1990s, the HBV vaccine was still relatively new, so the number of HBV cases, and subsequent medical and treatment costs, were much higher for this infectious disease than they are now.

According to the Alaska Department of Health and Social Services (DHSS) Division of Public Health's Epidemiology Section, there were three cases of HBV reported in Alaska in 2014. Per WHO, more than 90 percent of healthy adults will recover naturally from the disease, and less than 5 percent of those infected will develop a chronic illness, and costs attributable to IDU are negligible.

Hepatitis C

IDU is now the most common means of Hepatitis C virus (HCV) transmission in the United States.[9] HCV spreads easily when materials such as needles are shared among drug users.[10] Rates of infection declined in the 1990s, plateaued in the 2000s, and have risen in recent years, especially among younger populations. Increased use of heroin is linked to this rise.[11] While still highly costly, with the FDA's approval of direct-acting antiviral medication with high cure rates in 2013 and 2014, the treatment landscape and associated costs have changed considerably. In 2015, treatment of 1,009 new reported HCV cases attributable to IDU cost an estimated $90 million. It is important to recognize that new reported cases do not necessarily indicate when HCV was contracted. An analysis of the costs to Alaska to treat Hepatitis C contracted through IDU use is shown in the table below.

Table 49. Hepatitis C Cases and Estimated Drug Treatment Costs, 2015

# New Reported HCV Cases*	% Attributable to IDU**	# Cases Attributable to IDU	Estimated Cost per Treatment	Estimated Total HCV Treatment Costs
1,638*	61.6%**	1,009	$89,250***	$90,053,964

Source: *State of Alaska Infectious Disease Program, **Surveillance for Viral Hepatitis – United States, 2013, ***University of Washington Hepatitis C Online.

[9] http://www.cdc.gov/hepatitis/hcv/hcvfaq.htm
[10] Surveillance for Acute Viral Hepatitis – United States, 2007. *The Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report, 58*. http://www.cdc.gov/mmwr/pdf/ss/ss5803.pdf
[11] https://www.aids.gov/pdf/hcv-and-young-pwid-consultation-report.pdf

Chapter 6: Public Assistance and Social Services

Summary

- In federal fiscal year 2014, the federal government provided $5 million in social welfare support for people who were drug abusers.
- The State of Alaska also contributes funding to social welfare programs, such as SNAP, Adult Public Assistance, Alaska Temporary Assistance, Tribal Assistance Services, and Child Care Benefits. In SFY 2015, drug abuse accounted for $3 million of State funded social welfare.

Social Welfare Funding

Drug abuse can result in greater demand for social welfare services. For example, problems with drugs can reduce personal income or lead to disability, qualifying individuals for publicly funded social programs like food stamps, public assistance, and vocational rehabilitation. The following section addresses the portion of social welfare funding from federal and state sources that is attributable to drug abuse.

Social welfare spending includes two broad categories: administrative expenses and benefits paid to beneficiaries. This distinction is noted because benefit payments are transfer payments, representing a redistribution of money rather than an actual cost and net loss. This report presents aggregate totals including both administrative costs and benefit payments.

Federal

The federal government funds numerous social welfare benefits in Alaska. Federal programs transfer money to the State of Alaska, which then allocates funding to an array of state-run programs. *(For sources of attribution rates, please refer to the Methodology section.)* In federal fiscal year (FFY) 2014, $4.7 million of federal funds were designated for drug-abuse-related social welfare in Alaska.

Table 50. Federal Social Welfare Spending in Alaska Attributable to Drug Abuse, FFY 2014

Social Welfare Program	Federal Funding Total	% Attributable to Drug Abuse[4]	Drug Abuse[4]
OASDI	$103,133,000[1]	0.6%	$578,576
SSI	6,366,000[1]	1.0%	63,023
TANF	49,361,402[2]	1.7%	847,042
SNAP	184,438,186[3]	1.7%	3,164,959
Total	**$343,298,588**	**1.4%**	**$4,653,600**

Source: [1]Social Security Administration; [2]USDHHS Office of Family Assistance; [3]Supplemental Nutrition Assistance Program State Activity Report Fiscal Year 2014; [4]1998 NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992.*

State

The State of Alaska also contributes funding to social welfare programs. In SFY 2015, $2.6 million of State funds were designated for drug abuse-related social welfare.

Table 51. State Social Welfare Program Spending Attributable to Drug Abuse, Alaska, SFY 2015

Social Welfare Program	State Funding Total[1]	% Attributable to Drug Abuse[3]	Drug Abuse[3]
SNAP Administrative Costs	$10,674,523[2]	0.2%	$185,025
Adult Public Assistance	59,419,200	1.4%	812,062
Public Assistance Field Services	14,799,800	1.7%	256,530
Public Assistance Admin	1,256,200	1.7%	21,774
Alaska Temporary Assistance Program	15,164,300	1.7%	262,848
Work Services	3,750,000	1.4%	51,250
Tribal Assistance Services	10,084,200	1.4%	137,817
Women, Infants, and Children	10,574,400	1.1%	116,318
Energy Assistance	23,729,400	1.4%	324,302
Child Care Benefits	2,728,200	1.4%	37,285
General Relief Assistance	3,135,200	1.4%	42,848
Senior Benefits Payment Program	22,665,400	1.4%	309,760
Total	**$177,980,823**	**1.4%**	**$2,557,821**

Source: [1]Division of Public Assistance Actual Expenditures, SFY 2015, State of Alaska Office of Management and Budget; [2]Supplemental Nutrition Assistance Program State Activity Report Fiscal Year 2014; [3]1998 NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States – 1992.*

Chapter 7: Drug Abuse Impacts on the State General Fund Budget

The purpose of this chapter is to highlight the impacts of drug abuse on the State of Alaska's General Fund budget.

Summary

- In SFY 2015, the Division of Behavioral Health funded $780,391 in drug abuse prevention.
- Of the $780,391 allocated toward the prevention of drug abuse, $383,200 million (or 49 percent) was funded through Undesignated General Funds (UGF).
- In SFY 2015, $178 million supported 12 different social welfare programs administered by DHSS. Approximately $2.6 million (or 1.4 percent) funded social welfare for drug abusers, of which $1.7 million was supported with UGF.
- Based on national proportions, the State of Alaska Justice System's total spending in SFY 2015 of $655.1 million would represent 33 percent of the total justice systems budgets of an estimated $1.99 billion in Alaska (including federal and local government systems). If an estimated $73.4 million is attributed to drug abuse arrests and offenses in Alaska, then this would conservatively represent about 4 percent of total justice systems costs in Alaska. The estimated UGF portion of the state budget would be $21.5 million.

Healthcare Related Costs

Prevention Grants

The State of Alaska Division of Behavioral Health (DBH) allocates grant funding to programs that prevent mental health problems and drug abuse. Some of these programs operate at the systems level, guiding governments and communities to implement and organize services. Other programs work directly with individuals suffering from poor mental health or addiction and their families. This section of the report presents the total amount of DBH grants directed towards drug abuse.

In SFY 2015, DBH allocated an estimated total of $780,391 towards the prevention of drug abuse.

Table 52. State of Alaska DBH Prevention Grant Funding for the Prevention of Drug Abuse, SFY 2015

Grant Recipient	Total Grant Value	% for Drug Abuse	Grant Total for Drug Abuse
Reentry Program	600,000	25	150,000
Rural Human Services System	1,991,565	25	497,891
Therapeutic Court	265,000	50	132,500
Total	**$10,158,313**	**7.7%**	**$780,391**

Source: DHSS, Division of Behavioral Health.

Of the $780,391 allocated toward the grants supporting prevention of drug abuse, approximately $383,200 was funded through Undesignated General Funds (UDF).

Table 53. Undesignated General Fund Portion of DBH Prevention Grant Funding, ('000$) FY 2015

Grant Recipient	Total State Budget	UGF Portion	% UGF of Total	% for Drug Abuse	UGF Portion of Drug Abuse Grants
Reentry Program	$600.0	$600.0	100%	$150.0	$150.0
Rural Human Services System	$3,468.3	$869.4	25%	$497.9	$124.5
Therapeutic Court	$5,565.2	4,565.9	82%	$132.5	$108.7
Total	**$21,437.4**	**$14,385.8**		**$780.4**	**$383.2**

Source: DHSS, Division of Behavioral Health.

Social Welfare Related Costs

There are 12 different social welfare programs administered by DHSS. Funding for these programs in SFY 2015 was $178.0 million. Among the programs are Adult Public Assistance, Energy Assistance, Senior Benefits Payment Programs, and Alaska Temporary Assistance Program. Approximately $2.6 million funded social welfare for drug abusers, of which $1.7 million was supported with UGF.

Table 54. Undesignated General Fund Portion of State of Alaska Social Welfare Program Spending Attributable to Drug Abuse, SFY 2015

Social Welfare Program	State Funding Total[1]	% UGF Funding	Drug Abuse Spending	Portion UGF Funding
SNAP Administrative Costs	$10,674,523[2]	43.9	$185,025	$81,226
Adult Public Assistance	$59,419,200	90.2	$812,062	$732,480
Public Assistance Field Services	$14,799,800	45.7	$256,530	$117,234
Public Assistance Admin	$1,256,200	32.0	$21,774	$6,968
Alaska Temporary Assistance Program	$15,164,300	43.9	$262,848	$115,390
Work Services	$3,750,000	17.5	$51,250	$8,969
Tribal Assistance Services	$10,084,200	93.7	$137,817	$129,135
Women, Infants, and Children	$10,574,400	1.5	$116,318	$1,745
Energy Assistance	$23,729,400	47.2	$324,302	$153,071
Child Care Benefits	$2,728,200	19.5	$37,285	$7,271
General Relief Assistance	$3,135,200	100	$42,848	$42,848
Senior Benefits Payment Program	$22,665,400	100	$309,760	$309,760
Total	**$177,980,823**	**67%**	**$2,557,821**	**$1,706,095**

Source: [1]Division of Public Assistance Actual Expenditures, SFY 2015, State of Alaska Office of Management and Budget;
[2]Supplemental Nutrition Assistance Program State Activity Report Fiscal Year 2014;

Criminal Justice/Corrections Related Costs

Based on analysis of Criminal Justice impacts presented in Chapter 4, there were 9,572 offenses/arrests related to drug abuse in 2014, representing about 27 percent of total offenses/arrests. The total criminal justice systems costs associated with these offenses and arrests is estimated at $73.4 million. These costs include local, state, and federal government funds spent on police protection, legal and adjudication services, and corrections programs occurring in Alaska.

Table 55. Summary of Criminal Justice Costs Attributed to Drug Abuse in Alaska, 2014

	Drug-Related
Counts	
Offenses and arrests	9,572
Percentage offenses-arrests	27%
Costs	
Criminal justice system	$73.4 million

Source: McDowell Group calculations.

Based on a 2012 Survey, the Bureau of Justice Statistics provides a national breakout of federal, state, and local government expenditures on justice systems for police protection, judicial and legal services, and corrections. When combined, on a national basis, state government expenditures for justice systems are about 33 percent of total expenditures ($86 billion out of total national justice system spending of $265 billion).

Table 56. National Justice System Expenditures by Type of Government, Percent and in $Thousands, Federal FY2012

Category	Percent	$Thousands
Police Protection		
Federal	25%	$31,395,000
State	12%	$14,815,502
Local	66%	$84,053,185
Total		**$126,434,125**
Judicial and Legal Services		
Federal	27%	$15,894,000
State	39%	$22,770,081
Local	38%	$22,049,483
Total		**$57,935,169**
Corrections		
Federal	11%	$8,978,000
State	60%	$48,680,649
Local	33%	$26,397,777
Total		**$80,791,046**
Total Justice System		
Federal	21%	$56,267,000
State	33%	$86,266,232
Local	50%	$132,500,445
Total		**$265,160,340**

Note: Totals will not sum due to the removal of any fund duplications.
Source: Bureau of Justice Statistics (BJS) Justice Expenditure and Employment Extracts Program (JEE).

In SFY 2015, $111.9 million out of $115.7 million (or 97 percent) of the Alaska Court System was funded with Undesignated General Funds (UGF). A total of 83 percent (or $171.3 million) of the Alaska Department of Public Safety's budget was from UGF. The Department of Correction's budget was 89 percent funded with UGF (or $297.7 million). Combined, $580.9 million in UGF supported 89 percent of the combined budgets for the Alaska Court System, Department of Public Safety, and Department of Corrections.

Table 57. State of Alaska Justice System Budgets, SFY 2015

	Undesignated General Funds	Total State Budget	% UGF of Total Budget
Alaska Court System	$111.9 million	$115.7 million	96.7%
Dept. of Public Safety	$171.3 million	$206.3 million	83.0%
Dept. of Corrections	$297.7 million	$333.0 million	89.4%
Total	**$580.9 million**	**$655.1 million**	**88.7%**

Note: Columns may not add due to rounding.
Source: State of Alaska, Office of Management and Budget, McDowell Group calculations.

Using national proportions, the State of Alaska Justice System's total spending in SFY 2015 of $655.1 million would represent approximately 33 percent of the total justice system's budget in Alaska (including federal and local government systems) totaling about $1.99 billion.

If an estimated $73.4 million is attributed to drug abuse arrests and offenses in Alaska, then this would represent about 4 percent of total justice systems costs in Alaska. The portion of those costs impacting the state budget is approximately $24.2 million (33 percent of $73.4 million). The estimated UGF portion of the state budget would be $21.5 million (using the proportion of 89 percent of the total budget). Therefore, of the total UGF funding of $580.9 million in the state's justice system, approximately 4 percent is directly attributed to drug abuse-related costs. This is likely a conservative estimate. State of Alaska spending on criminal justice probably accounts for a higher percentage (than the national average) of total criminal justice spending in Alaska. For example, in Alaska there are no federal penitentiaries or correctional institutions.

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Table 58. ICD-10 Codes and Drug Attributable Fractions (DAF) by Cause of Death, Gender, and Age Group

Cause	ICD-10	DAF
Direct Causes		
Behavioral Health Disorders due to psychoactive substance	F11, F12, F13, F14, F15, F16, F17.0, F17.3-F17.9, F18, F19	100%
Accidental poisoning by and exposure to drugs, medicaments, and biological substances	X40-X44	100%
Intentional self-poisoning (suicide) by and exposure to drugs, medicaments, and biological substances	X60-X64	100%
Assault (homicide) by drugs, medicaments and biological substances	X85	100%
Poisoning by and exposure to drugs, medicaments and biological substances, undetermined intent	Y10-Y14	100%
Others		
Accidental poisoning by and exposure to narcotics and psycodysleptics, not elsewhere classified	X42	100%
Poisonings by drugs	T40.0, T40.1, T40.2, T40.3, T40.4, T40.5, T40.7, T41.3	100%
Drugs, medicament and biological substances causing adverse effects in therapeutic use; Opioids and related analgesics causing adverse effects in therapeutic use	Y45.0	100%
Indirect Causes		
Homicide	X85-Y09, Y87.1	13%
HIV/AIDS	B20-B24	5%
Hepatitis B	B16.9, B18.0, and B18.1	28%
Hepatitis C	B17.1, B18.2	28%

Source: Attribution rates from Centers for Disease Control and Prevention's (CDC) Vital Statistics; Patra et al. "*Substance-attributable morbidity and mortality changes to Canada's epidemiological profile: Measurable differences over a ten-year period,*" and Rogers et. al. *"The Costs of Alcohol and Drug Abuse in Maine."*

Table 59. Alaska Drug-Related Deaths, by Cause, 2010-2014

	Total # of Deaths	Drug Attributable Deaths	Annual Average Drug Attributable Deaths/Year
Causes of Death 100 Percent Attributable	**756**	**756**	**151**
Accidental poisoning by and exposure to drugs, medicaments, and biological substances	478	478	95.6
Assault (homicide) by drugs, medicaments and biological substances	198	198	39.6
Behavioral Health Disorders due to psychoactive substance	12	12	2.4
Drugs, medicament and biological substances causing adverse effects in therapeutic use	0	0	0.0
Intentional self-poisoning (suicide) by and exposure to drugs, medicaments, and biological substances	57	57	11.4
Poisoning by drugs	0	0	0.0
Poisoning by and exposure to drugs, medicaments and biological substances, undetermined intent	11	11	2.2
Causes of Death Partially Attributable	**152**	**36**	**7.2**
Hepatitis B	11	3	0.6
Hepatitis C	113	32	6.3
HIV/AIDS	28	1	0.3
Total	**906**	**790**	**158**

Notes: Due to rounding columns may not add to totals. See Appendix for ICD-10 codes used and drug attribution rates.
Source: Death counts from DHSS' BVS' unpublished data, and McDowell Group calculations. Attribution rates from Centers for Disease Control and Prevention's (CDC) Vital Statistics; Patra et al. *"Substance-attributable morbidity and mortality changes to Canada's epidemiological profile: Measurable differences over a ten-year period;"* and Rogers et. al. *"The Costs of Alcohol and Drug Abuse in Maine."*

Table 60. Estimated Potential Years of Life Lost (PYLL) Due to Causes of Death Attributable to Drugs in Alaska, 2010-2014

	Total # of Drug Attributable Deaths	PYLL Attributable to Drugs	Estimated Average PYLL/Year
Causes of Death 100 Percent Attributable	**557**	**18,391**	**3,678**
BH Disorders due to psychoactive substance	10	333	67
Accidental poisoning by and exposure to drugs, medicaments, and biological substances	479	16,153	3,231
Intentional self-poisoning (suicide) by and exposure to drugs, medicaments, and biological substances	57	1,677	335
Assault (homicide) by drugs, medicaments and biological substances	0	0	0
Poisoning by and exposure to drugs, medicaments and biological substances, undetermined intent	11	228	46
Poisoning by drugs	0	0	0
Drugs, medicament and biological substances causing adverse effects in therapeutic use	0	0	0
Causes of Death Partially Attributable	**61**	**1,636**	**327**
HIV/AIDS	1.4	36	7
Hepatitis B	3.1	55	11
Hepatitis C	30.8	537	107
Homicide	25.5	1,008	202
Total	**618**	**20,027**	**4,005**

Note: Due to rounding columns may not add to totals.
Source: DHSS' BVS' unpublished data, and McDowell Group calculations. Attribution rates from CDC's Vital Statistics; Patra et al., Rogers