THE ECONOMIC COSTS OF DRUG MISUSE IN ALASKA

2019 UPDATE

PREPARED FOR:

Trust

Alaska Mental Health Trust Authority

JANUARY 2020

McDowell GROUP

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McDowell Group Anchorage Office
1400 W. Benson Blvd., Suite 510
Anchorage, Alaska 99503

McDowell Group Juneau Office
9360 Glacier Highway, Suite 201
Juneau, Alaska 99801

Website: www.mcdowellgroup.net

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Executive Summary

Introduction and Purpose

The Alaska Mental Health Trust Authority contracted with McDowell Group to update prior studies of the economic costs of drug misuse in Alaska. Costs examined in this update include health care, criminal justice system, lost or reduced workplace productivity, public assistance and social services, and a range of other impacts. While important, quality of life, pain and suffering of victims of crime and others, and a spectrum of more qualitative effects related to drug misuse are not included in this analysis.

A variety of methodologies, data sources, and modeling assumptions were used for this analysis. Caution is warranted when comparing this study to previous efforts because economic modeling, data sources, definitions, and specifications may have changed over time.

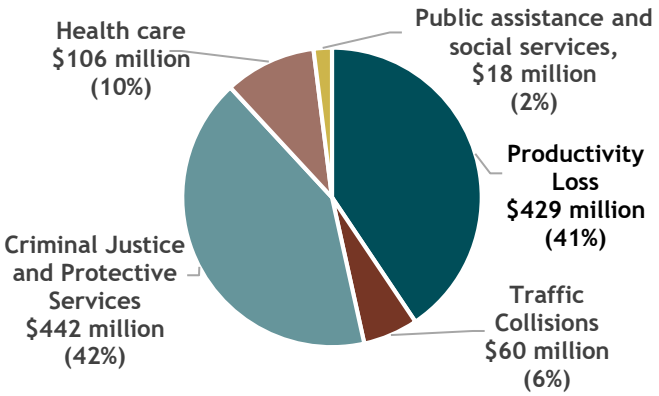
Note also that data sets often describe different time periods. In this report, years given alone, e.g., "2019" are calendar years. Other data years are specified. Alaska's state fiscal year is designated "SFY" and runs from July 1 through June 30. The U.S. federal fiscal year is designated "FFY" and runs from October 1 through September 30.

Big Picture

In 2018, the estimated costs of drug misuse borne by state and local governments, employers, and residents of Alaska was $1.1 billion. Most of the costs shown in the table below—those associated with criminal justice and protective services and public assistance and social services—are borne by the public sector. A significant portion of the health care costs are also a public expense, largely because they are covered by Medicaid. The remaining large category, productivity loss, affects individuals, families, and public and private employers across the full range of the Alaska economy.

Estimated Annual Drug-related Economic Costs to Alaska, 2018

Cost Category	Costs
Productivity loss	$429 million
Traffic collisions	$60 million
Criminal justice & protective services	$442 million
Health care	$106 million
Public assistance and social services	$18 million
Total	**$1,055 million**



Notes: Due to rounding, columns may not add to total. Does not include valuation of quality-adjusted life years due to drug-related traffic collisions ($292 million) or indirect costs related to victimization ($844 million).
Source: McDowell Group calculations

Illicit Drug Misuse

During 2016-2017, approximately 21,000 Alaskans age 12 or older (3.5%) used illicit drugs (not including marijuana) in the previous month, and 3.7% (or 22,000 Alaskans) used illicit drugs sometime in the previous year. This includes 14,000 (2.3 percent) who used cocaine, 5,000 (0.8%) who used methamphetamine, and 3,000 (0.4%) who used heroin. About 28,000 Alaskans (4.8%) used pain relievers for non-medical reasons, including 4,000 (or 0.7%) who have a pain reliever use disorder. All these prevalence patterns are similar to the nation as a whole with the one exception; illicit use of drugs in the previous year are higher in Alaska than in the U.S. (3.7% and 2.8%, respectively).

The highest percentage of illicit drug use (in the previous month) by age group occurred among young adults (7.2% of all Alaskans age 18-25). Approximately 2.4% of teenagers (age 12-17) used illicit drugs in Alaska.

MARIJUANA

Recreational use of marijuana has been legal in Alaska since 2015. In 2016-2017, 15.8% (or 93,000 Alaskans) consumed marijuana in the previous month and 22.7% (or 133,000 Alaskans) used it in the previous year. Prevalence for both are higher than in the U.S. as a whole (9.2% and 14.5%, respectively). The highest percentage of marijuana use (in the previous year) by age group was by young adults age 18-25 (39.4%).

Contributing Cost Factors

PRODUCTIVITY LOSSES

Drug misuse results in lost productivity when it affects employability or ability to perform household services such as caring for a child in the home. Lost productivity occurs as a result of premature death, reduced efficiency through physical and/or mental impairment, employee absenteeism, incarceration for criminal offenses, and medical treatment or hospitalization.

Estimated Annual Drug-related Productivity Losses, Alaska, 2018

Productivity Category	Costs	Percent of Total Costs
Premature deaths	$174 million	41
Incarceration	$50 million	12
Diminished productivity	$166 million	39
Time in Alcohol addiction treatment programs	$15 million	3
Medical conditions (primary/secondary)	$24 million	6
Total	**$429 million**	**100%**

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

The largest component of productivity loss is premature death. Between 2014 and 2018, an annual average of 137 deaths in Alaska were linked to drug misuse, resulting in an estimated annual average of 4,469 years of life lost (PYLL) per year. Productivity loss due to deaths where drugs are the primary cause of death totaled approximately $174 million in Alaska in 2018.

Reduction in traditional labor force earnings due to drug-impaired productivity were the second largest productivity-loss category. In 2018 it totaled $161 million.

Lost productivity due to incarceration in Alaska in 2018 amounted to an estimated $50.3 million, including $4.6 million from women (9%) and $45.7 million from men (91%).

In SFY2019, 2,168 individuals were admitted to 24-hour detoxification and residential treatment programs resulting in an estimated loss of $14.9 million in potential earnings due to lost time at work. Of that, $6.2 million was associated with drug-related treatment only and $7.7 million was related to individuals receiving treatment for a combination of alcohol and drug misuse.

In SFY2019, individuals with a primary or secondary diagnosis related to drug use disorders spent 158,961 days in a hospital inpatient or emergency department for treatment of diseases and conditions attributable to these diagnoses; this resulted in an estimated $24.1 million in lost earnings while receiving hospital services. For individuals with only the primary diagnosis attributable to drug use disorder, 9,033 days of lost earnings had a cost of $1 million.

Vehicle Traffic Collisions

Suspected drug misuse was involved in 2% of all traffic collisions in 2016 (175 crashes). Those crashes involved 194 Alaskans, including 29 with minor injuries, 22 with major injuries, and 19 deaths. Of all drug-suspected collisions, 29 had property damage only.

In 2016, 174 vehicle traffic collisions in Alaska were attributed to suspected drug-impaired drivers. These collisions resulted in $60 million in property damages, major and minor injuries, and fatalities. Adding impacts on quality of life brings total drug-suspected collision costs to $352 million (2018 dollars).

Number of Drug-Suspected Traffic Collisions and Cost of Collisions in Alaska, 2016 (2018$)

	Property Damage Only	Minor Injury	Major Injury	Fatal	Total
Number of Alaska Impaired Collisions[1]	**29**	**28**	**18**	**11**	**86**
Type of Costs [2]					
Medical	$0	$139,440	$11,711,754	$206,778	$12,057,972
Emergency services	$1,305	$3,976	$24,498	$15,785	$45,564
Market productivity	$0	$131,012	$9,917,496	$20,247,007	$30,295,515
Household productivity	$2,784	$41,916	$2,813,040	$5,518,744	$8,376,484
Insurance administration	$8,816	$171,276	$2,122,218	$495,682	$2,797,992
Workplace costs	$2,871	$15,176	$317,628	$206,217	$541,892
Legal costs	$0	$62,888	$2,467,260	$1,863,719	$4,393,867
Congestion costs	$49,706	$49,420	$43,794	$100,111	$243,031
Property damage	$112,752	$240,744	$432,234	$196,229	$981,959
Sub-Total	$178,234	$855,848	$29,849,922	$28,850,272	$59,734,276
Quality-adjusted life years (QALYs)	$0	$1,086,232	$142,360,830	$148,678,662	$292,125,724
Total	**$178,234**	**$1,942,080**	**$172,210,752**	**$177,528,934**	$351,860,000

Note: Possible injuries were not allocated costs.
[1] DOTPF
[2] NHSTA, *"The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)"* (2015). http://www-nrd.nhtsa.dot.gov/pubs/812013.pdf.

Criminal Justice and Protective Services

A significant number of crimes can be attributed directly to drug misuse. The crime costs include criminal justice systems costs (law enforcement, adjudication, and incarceration) and costs related to victims of crime (both direct and indirect). A portion of child protection services are also associated with drug misuse.

Of an estimated 37,762 known offenses or arrests in various categories of crimes in 2017, 14,850 (39%) were attributable to drug misuse. The cost to the criminal justice system of those crimes was $123.1 million. In 2017, of approximately 40,400 victims of various criminal offenses in Alaska, approximately 15,000 (37%) were victims of crimes attributable to drug misuse. Those victims of crime suffered estimated direct costs of $319 million and indirect costs of $844 million (2018 dollars).

Summary of Criminal Justice Costs Attributable to Drug Misuse in Alaska, 2017 (2018 dollars)

	Alcohol-Related
Drug-Related Counts	
Offenses and arrests	14,850
Percentage offenses-arrests	39%
Victims of crime	15,009
Percentage victims of crime	37%
Drug Misuse Attributable Totals	
Costs	
Criminal justice system	$123 million
Victim of crime – direct costs	$319 million
Victim of crime – indirect costs	$844 million
Drug Misuse Criminal Justice Costs	**$1,286 million**

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

In SFY2018, Office of Children Services (OCS) expenditures for child abuse and neglect attributable to drug misuse totaled an estimated $10.5 million (or 6% of OCS spending).

Health Care

A wide variety of health care costs are associated with drug use disorders, including hospitalization from injuries and illness, residential and outpatient treatment costs, and pharmaceutical costs. Hospital-related medical costs to treat conditions and diseases with a primary diagnosis only associated with drug use disorders totaled $49 million in 2018, including $30 million in inpatient charges, $10 million in emergency department charges, and $9 million in outpatient charges for services delivered in a hospital setting.

Unduplicated Alaska Hospital-related Admissions/Visits, Length of Stay, and Total Charges Drug Attributable, Primary Diagnosis Only, 2018

Location of service	Admissions/Visits	Length of Stay (days)	Total Charges
Inpatient	**627**	**3,459**	**$29,724,839**
Emergency Department	**2,953**	**3,071**	**$9,885,883**
Outpatient	**8,222**	**24,310**	**$9,380,077**
TOTAL	**11,802**	**30,840**	**$48,990,799**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). Drug-attributable Fractions (DAF) rates applied by McDowell Group.

Hospital-related medical costs to treat conditions and diseases with a primary and/or secondary diagnosis associated with drug use disorders totaled $1.6 billion in 2018, including $1.1 billion in inpatient charges, $205 million in emergency department charges, and $259 million in outpatient charges for services delivered in a hospital setting. These charges may be duplicated and should be used only to demonstrate the impact of including secondary diagnoses into the costs associated with drug use disorders.

In SFY2019, the Division of Behavioral Health awarded $5.8 million in funding for drug treatment (drugs-only or alcohol and drug combined) to treatment and recovery grantee agencies.

In 2018, treatment costs associated with 656 new cases of Hepatitis C attributed to injectable drug use in Alaska totaled an estimated $41 million, and another $2.1 million in medical costs were associated with HIV/AIDS attributed to injectable drug use.

Public Assistance and Social Services

In FFY2019, the U.S. government spent an estimated $15 million in Alaska on social welfare supports attributable to drug misuse. The largest expenditure was for Social Security, followed by the Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps.

In SFY2019, the State of Alaska spent an additional $3 million on social welfare supports attributable to drug misuse. The largest expenditures were for Adult Public Assistance, followed by Temporary Assistance for Needy Families (TANF).

Cost of Opioid Use Disorder in Alaska

Hospital-related medical costs to treat conditions and diseases with a primary diagnosis only associated with Opioid Use Disorder (OUD) totaled $12 million in 2018, including $7 million in inpatient charges, $2 million in emergency department charges, and $3 million in outpatient charges delivered in a hospital setting.

Unduplicated Alaska Hospital-related Admissions/Visits, Length of Stay, and Total Charges OUD Attributable, Primary Diagnosis Only, 2018

Location of service	Admissions/Visits	Length of Stay (days)	Total Charges
Inpatient	**135**	**809**	**$6,754,662**
Emergency Department	**736**	**766**	**$2,398,400**
Outpatient	**4,055**	**12,290**	**$3,364,551**
TOTAL	**4,926**	**13,865**	**$12,517,613**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). DAF attribution rates applied by McDowell Group.

In SFY2018, 2,667 Medicaid beneficiaries with opioid-related diagnoses had Medicaid reimbursement claims totaling $63.8 million, including $17.9 million (or 28% of total) for specific services related to opioid-related conditions. The average spending per Medicaid beneficiary with an opioid-related diagnosis was $23,918 for all services, including an average of $6,695 for opioid-related services. Alaska's opioid treatment Medicaid drug reimbursement claims paid totaled $4.8 million.

In SFY2019, agencies receiving DBH treatment and recovery grants logged 42,389 bed days; 1,845 for OUD-only and 40,544 for treatment of OUD combined with other (drugs and/or alcohol) substance use disorders (does not include OUD-only treatment). These services were delivered to 814 patients. Combined, general fund DBH payments to grantees for this care totaled approximately $2.6 million in SFY2019.

In 2017, 73 deaths in Alaska were attributed to OUD overdoses, representing an estimated future earnings cost of $104.2 million.

In 2018, the Alaska Department of Public Safety estimated there were 746 opioid-related incidents totaling $5.1 million in departmental costs.

In SFY2018, inmates with OUD represented approximately $745,000 of the Department of Correction's treatment costs.

Introduction and Methodology

Purpose

The Alaska Mental Health Trust Authority (Trust) contracted with McDowell Group to update prior studies (through 2016) of the economic costs of drug misuse in Alaska. Drug misuse can lead to greater health risks and death, impaired physical and mental abilities, crime and incarceration, greater reliance on public assistance, and a variety of other adverse effects. This study addresses quantifiable economic costs of drug misuse, such as lost earnings among the affected population and costs of government programs. Quality of life and other qualitative impacts of drug misuse, while substantial, are not addressed in this report.

Report Organization

This report contains:

- *Chapter 1. Drug Consumption in Alaska*
- *Chapter 2. Productivity Losses*
- *Chapter 3. Traffic Collisions*
- *Chapter 4. Criminal Justice and Protective Services*
- *Chapter 5. Health Care*
- *Chapter 6. Public Assistance and Social Services*
- *Chapter 7: Opioid Use Disorder*
- *Chapter 8. Taxes Generated from Marijuana Sales*
- *Chapter 9. Implications of Drug Misuse Impacts on the State General Fund Budget*
- *References*
- *Appendix A: Attrition Fractions and Mortality*

Methodology, Definitions, and Data Sources

Following are descriptions of the types of data presented in each chapter of the report.

Chapter 1. Drug Consumption in Alaska

NATIONAL SURVEY OF DRUG USE AND HEALTH (NSDUH)

This data set includes national and state-level data on substance use disorders and associated mental health conditions in the U.S., including prevalence estimates, trends in drug consumption, levels of consumption, demographic characteristics of drug users, and national and state consumption comparisons. To increase the size of the Alaska sample, results were pulled from surveys conducted in both 2016 and 2017. NSDUH includes the following definitions:

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]

Data on marijuana are presented; however, the drug is not considered illicit in Alaska. Hence, marijuana consumption data are presented separate from illicit use where possible.

OTHER DATA

Data on co-occurring disorders were compiled from the U.S. Department of Health and Human Services' Substance Abuse and Mental Health Services Administration's (SAMHSA) annual NSDUH.

Chapter 2. Productivity Losses

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

MORTALITY CAUSES

The study team requested death-count data from the DHSS, Division of Public Health, Health Analytics and Vital Statistics (HAVS). Due to small numbers for some causes, a multi-year time period (2014-2018) was used to estimate the annual number of drug-related deaths statewide. HAVS identified instances where drug-

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

related causes were the underlying cause of death. Drug-related causes include causes where death is 100% attributable or partially (<100%) attributable to drugs.

Drug-attributable fractions (DAF) are based on national data found in the health disorder codes appendix of 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.*"

Potential Years of Life Lost Due to Death from Drugs

HAVS provided the potential years of life lost (PYLL) for each underlying drug-related cause of death using the ICD-10 codes by age and gender and based on a 75-year average lifespan. Using the appropriate DAFs for each cause of death, an estimate of the total PYLL attributable to drugs was calculated. Modeling outside the scope of this analysis would be required to quantify economic costs associated with those PYLL.

INCARCERATION CAUSES

To estimate lost productivity due to incarceration, the study team applied average estimated potential earnings to the number of inmates and days absent from the workforce due to drug-related incarcerations. Statewide incarceration counts by gender and offense were gathered from the Alaska Department of Corrections (DOC) Alaska Offender Profile, 2017 — an annual report that examines the total inmate population by offense category and calendar year.

DAFs were obtained 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 national 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 *Survey of Inmates in Federal Correctional Facilities*.

DIMINISHED PRODUCTIVE CAUSES

"*The Economic Impact of Illicit Drug Use on American Society 2011"* assigns a 17% decrease in productivity attributable to drug dependence or abuse for males and an 18% decrease for females. Sources include DOLWD population estimates, ACS estimates for median individual annual average earnings by gender, and SAMHSA's 2016-2017 Alaska NSDUH incidence estimates for past year drug dependence and drug dependence or abuse.

This report provides two different estimates of impaired productivity losses from 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, as noted under "Chapter 1," above.

HOSPITALIZATION AND TREATMENT CAUSES

The Alaska Department of Labor and Workforce Development (DOLWD) publishes monthly average wage data for Alaska workers. The 2018 monthly average wage of $4,595 was converted to daily average earnings of $151.48.

The Division of Behavioral Health provided the total number of bed days at 24-hour detoxification and at residential services during SFY2019, as well as unique counts of male and female patients. The number of bed days were separated into those associated with drug-related treatment only, opioid-related treatment only, and those associated with treatment for a combination of alcohol and drug misuse (not including drug-related treatment only).

Total 2018 length of stay for all drug-attributable inpatient and emergency department (ED) visits was obtained through the Alaska Hospital Facilities Data Reporting Program (HFDR), which collects discharge data from facilities throughout the state. These data include primary and primary-and-secondary diagnoses combined. DAFs were applied to these data.

Chapter 3. Vehicle Traffic Collisions

This chapter examines nine categories of costs incurred from traffic accidents, plus a quality-adjusted life-years (QALY) cost. The National Highway Traffic Safety Administration (NHTSA), 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 lost wages and benefits over the victim's remaining theoretical 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.

In May 2015, NHTSA updated its 2010 estimates of the costs of drug-related traffic accidents. The figures in NHTSA's update were grouped by injury severity, including fatalities, property damage only (no physical injury), and the five levels of injury severity in the Maximum Abbreviated Injury Scale (MAIS). These costs were adjusted for inflation and for Alaska's cost-of-living.

The Alaska Department of Transportation and Public Facilities (DOTPF) maintains a statewide database of motor vehicle crashes. Crash reports are generated by law-enforcement personnel and through citizen reports. Both types of reports are submitted to the Division of Motor Vehicles before being passed to DOTPF for entry into the statewide crash database.[2]

Among the multiple fields related to impairment on the Alaska motor vehicle collision report form is suspected drug use by the driver. Response options for drug-suspected include *Yes*, *No*, and *Unknown*. Drug-suspected crashes may include crashes that have not been confirmed positive for driver drug use through a drug test such as blood or urine test. There are separate fields on the crash report forms for collecting data on whether a drug test was administered, what type of test was administered, and the test result. For this report, DOTPF supplied the number of incidents and the number of people involved for drug-suspected traffic crashes in Alaska in 2016, the most recent year of complete data. Missing data (null values) are removed from the counts provided in this report.

DOTPF definitions include:

> **No Apparent Injury** is used when there is no reason to believe that the person received any bodily harm from the motor vehicle crash. There is no physical evidence of injury and the person does not report any change in normal functions.
>
> **Possible Injury** is any injury reported or claimed that is not fatal, as well as suspected serious or suspected minor injury. This includes momentary loss of consciousness, claim of injuries not evident, limping, or complaint of pain or nausea. Possible injuries are those that are reported by the person or are indicated by his/her behavior, but no wounds or injuries are readily evident.
>
> **Suspected Minor Injury** is any injury that is evident at the scene of the crash other than fatal or serious injuries. Examples include lump on the head, abrasions, bruises, minor lacerations (cuts on skin surface with minimal bleeding and no exposure of deeper tissue/muscle). The category does not include limping (the injury cannot be seen).
>
> **Suspected Serious Injury** is an injury other than fatal which results in one or more of the following:
>
> - Severe laceration resulting in exposure of underlying tissues/muscle/organs or resulting in significant loss of blood
> - Broken or distorted extremity (arm or leg)
> - Crush injuries
> - Suspected skull, chest or abdominal injury other than bruises or minor lacerations
> - Significant burns (second and third degree burns over 10% or more of the body)
> - Unconsciousness when taken from crash scene
> - Paralysis

[2] Alaska Motor Vehicle Collision Report (12-200) Instruction Manual, 2014. Retrieved from: https://one.nhtsa.gov/nhtsa/stateCatalog/states/ak/alaska.html

Fatal Injury (Killed) is any injury that results in death within 30 days after the motor vehicle crash in which the injury occurred. For deaths that occur within this time period, the injury classification is changed from that previously assigned.

Died Prior to Crash refers to non-motor vehicle fatalities associated with a motor vehicle crash, e.g., a heart attack victim, a homicide victim, a suicide or person who dies during a legal intervention where the death is followed by a motor vehicle traffic crash.

Unknown is used when the injury status of an involved person is not known (e.g., left the scene of the accident).

Null means that no option was chosen

Non-vehicular property damage: This term refers to damage occurred to property such as streetlight poles, traffic signal poles, guardrail, signs, trees, fences, mailboxes, etc.

Due to differences in injury reporting between NHTSA and DOTPF, NHTSA's MAIS Level 1 was matched to DOTPF's "suspected minor injury" category and MAIS Level 5 was matched to DOTPF's "suspected serious injury" category. Both sources report "fatal" and "property damage only" incidences.

Chapter 4. Criminal Justice and Protective Services

OFFENSES AND ARRESTS

Estimates of costs related to the criminal justice system were based on arrest and offense data from the Alaska Department of Public Safety (DPS) Uniform Crime Reporting document, *Crime in Alaska, 2017*. As part of the nationwide Uniform Crime Reporting program, DPS reports offenses annually. The data shows 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, motor vehicle theft, and other sex offenses (including prostitution and commercialized vice).

Drug attribution rates were gathered from the NDIC report, *The Economic Impact of Illicit Drug use on American Society 2011*. Drug-law offenses were 100% attributed to drugs. For other offenses, the NDIC's drug attributable rates were based on the BJS *Survey of Inmates in Local Jails*, *Survey of Inmates in State Correctional Facilities*, and *Survey of Inmates in Federal Correctional Facilities*.

CRIMINAL JUSTICE SYSTEM

The primary source used to estimate criminal justice system costs for specified crimes was 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." Cost estimates based on the study address criminal homicide, rape and other sexual offenses, assaults, robbery, burglary, larceny-theft, and motor vehicle theft.

CRIME VICTIMIZATION

BJS publishes national data on victimization rates per 1,000 people age 12 and older, as well as per 1,000 households, in the annual *National Criminal Victimization Survey* (NCVS) report. The NCVS collects information from a nationally representative sample of U.S. households on nonfatal crimes reported and not reported to police. The 2018 victimization rates were applied to Alaska's 2018 population age 12 and older (published by DOLWD). Drug attribution rates from the NDIC were then applied to estimate the number of crime victimizations attributed to drug misuse in Alaska.

The 2010 NIH report was used to estimate direct costs related to victims of crime, defined as "economic losses suffered by victims of crime, including medical care costs, lost earnings, and property loss/damage." Costs related to victims of crime were estimated for homicide, assaults, rape/sexual assault, robbery, burglary, theft, and motor vehicle theft. These were adjusted to 2018 dollars and Anchorage's health care cost-of-living differential.

The 2010 NIH report was also used to estimate indirect costs, which include "losses suffered by victims of crime, including pain and suffering, decreased quality of life, and psychological distress." These indirect costs include the probability of being killed while a crime is occurring (corrected risk-of-homicide costs). Indirect costs related to victims of crime were estimated for homicide, assaults, rape/sexual assault, robbery, burglary, theft, and motor vehicle theft. The costs were adjusted to 2018 dollars.

PROTECTIVE SYSTEMS

The National Archive on Child Abuse and Neglect, 2012, provided an estimate of 31% for the proportion of children in foster care and protective services attributable to substance-use disorders. SFY2019 actual spending data indicated this percent represented $50.2 million of Office of Children Services (OCS) budget. Incorporating the findings from the companion study, *The Economic Costs of Alcohol Misuse in Alaska, 2019*, the estimated cost attributed to drug misuse was the portion of OCS spending for substance misuse remaining after deducting $39.7 million attributed to alcohol misuse.

Costs for adult protective services related to drug misuse are not estimated in this report because data about the percent of cases related to drug misuse were not available from the Division of Disability and Senior Services.

Chapter 5. Health Care

INPATIENT, EMERGENCY DEPARTMENT, AND OUTPATIENT COSTS

Alaska Hospital Facilities Data Reporting Program (HFDR) collects discharge data for inpatient, Emergency Department (ED), and outpatient services for health care facilities in Alaska. The most recent data available is for 2018. It shows the number of admissions, length of stay, and hospital charges for each diagnosis or condition attributable to drug use disorders. When only a portion of an outcome was attributed to drug misuse, that DAF of the measure was added to the total for that category. Charges presented by HFDR represent the amount charged by a facility for services, not the final amount paid. These data include primary, and primary-and-secondary diagnoses combined.

Treatment for Drug Misuse

Alaska Division of Behavioral Health provided number of bed use days and patient counts, by gender, for treatment related to drug only, opioid only, and alcohol and drugs combined (not including drug only or alcohol only treatment). Drug misuse included cocaine/crack, cannabis, marijuana-hashish, heroin, non-prescription methadone, other opiates/synthetics, oxycodone, oxycontin, PCP, other hallucinogens, methamphetamines, other amphetamines, other stimulants, benzodiazepines, other tranquilizers, barbiturates, other sedative/hypnotic, inhalants, over-the-counter meds, designer drugs, nicotine, and others.

HIV and AIDS Costs

The DHSS Division of Public Health Epidemiology Section compiles and reports data on infectious disease cases reported in Alaska. Since 1982, the state has tracked all known cases in the state and cases first diagnosed in the state for HIV (non-AIDS) and HIV with AIDS. The Alaska rate of cases attributed to injectable drug use (19.2%) was used to represent the active HIV/AIDS cases in Alaska. Estimated annual medical costs for each of these cases was based on costs reported in the U.S. Department of Justice, National Drug Intelligence Center (NDIC), *The Economic Impact of Illicit Drug Use on American Society 2011* (2011), adjusted to 2018 dollars.

Hepatitis Drug Costs

The State of Alaska Infectious Disease Program tracks new cases of Hepatitis A, Acute Hepatitis B, and Hepatitis C virus (HCV); however, it does not track the number of patients receiving treatment. This makes it difficult to estimate changes in the overall cost and effectiveness of treatment over time.

The costs examined pertain only to the drug treatment costs associated with hepatitis and do not include costs associated with hepatitis impacts, such as liver transplants and other inpatient or outpatient expenses. Estimated ranges of Hepatitis B and HCV cases attributed to injectable drug use were obtained from DHSS Division of Public Health epidemiological bulletins. The Division's mid-range costs for direct-acting antiviral therapy for HCV were used to estimate costs for new HCV cases in 2018 attributed to injectable drug use.

Chapter 6. Public Assistance and Social Services

Federal Government Costs

Cost estimates for public assistance and social services are based on federal funding from FFY2019 or the most recent year available for the following programs: Old Age, Survivors, and Disabilities Insurance (OASDI); Supplemental Security Income (SSI); Temporary Assistance for Needy Families (TANF); Supplemental Nutrition Assistance Program (SNAP); Child Care benefits; Head Start; and Vocational Rehabilitation.

A NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States,* updated in 1998, compiled the national prevalence of drug misuse among beneficiaries of different social welfare programs. The study team applied those prevalence rates to the federal funding allocated to Alaska for the programs listed above using the NIDA estimate that one-third of total funding is attributable to drug misuse.

State Government Costs

One third of Division of Public Assistance (DPA) funding is attributable to drug misuse, based on prevalence rates from the 1998 NIDA study. Total DPA funding for SFY2019 was published by the State of Alaska Office of Management and Budget

Chapter 7. Opioid Use Disorder

Inpatient, Emergency Department, and Outpatient Costs

Alaska Hospital Facilities Data Reporting Program (HFDR) collects discharge data for inpatient, Emergency Department (ED), and outpatient services for health care facilities in Alaska. The most recent data available is for 2018. It shows the number of admissions, length of stay, and hospital charges for each diagnosis or condition attributable to drug use disorders (see Appendix A). The portion attributed to opioid-related diagnoses was added to the total for that category. Charges recorded in that HFDR represent the amount charged by a facility for services, not the final amount paid. These data include primary, and primary-and-secondary diagnoses combined.

Medicaid Costs

DHSS Medicaid data was obtained through a special data request using opioid-related ICD10 codes. Data were based on an analysis of claim level data for SFY2018 based on the date of service. Claims with an SFY date of service were paid in SFY2018 or SFY2019. Not all claims contain an ICD10 diagnosis code. Claims without a diagnosis code include pharmacy, transportation, hospice, personal care, (most) dental, and other claims. ICD10 codes were used to identify the following chronic conditions: cancer, diabetes, heart, injuries, lung, mental health, obesity stroke, and tobacco.

Treatment for Drug Misuse

Alaska Division of Behavioral Health provided number of bed use days and patient counts, by gender, for treatment related to opioid only, and opioid and other drugs and/or alcohol combined (not including opioid only). Opioid misuse included heroin, non-prescription methadone, other opiates/synthetics, oxycodone, and oxycontin. Other drug misuse included cocaine/crack, cannabis, marijuana-hashish, PCP, other hallucinogens, methamphetamines, other amphetamines, other stimulants, benzodiazepines, other tranquilizers, barbiturates, other sedative/hypnotic, inhalants, over-the-counter meds, designer drugs, nicotine, and others. Categories of alcohol misuse include any use of alcohol in the last 30 days, more than 1 drink per day, intoxication, and non-beverage alcohol.

Data for treatment costs by the Department of Corrections for inmates reporting opioid misuse were estimated based on data presented in *Addressing Alaska's Poly-Substance Epidemic Comprehensive Presentation* (http://www.akleg.gov/basis/get_documents.asp?docid=10674).

Productivity Losses Due to Mortality

Based on 2018 opioid overdose deaths and demographic data reported in the Alaska Opioid Data Dashboard and estimated losses of future earnings by gender and age (*See methodology above for Chapter 2: Productivity Losses*), future earnings losses for individuals dying from opioid overdoses were estimated.

Chapter 8. Taxes Generated from Marijuana Use

Data on the revenues generated from the Marijuana Tax were provided by Alaska Department of Revenue.

Chapter 9. Implications of Drug Misuse Impacts on the State General Fund Budget

MEDICAID

DHSS Medicaid data was obtained through a special data request using opioid and other drug-related ICD10 codes. Data were based on an analysis of claim level data for SFY2018 based on the date of service. Claims with an SFY date of service were paid in SFY2018 or SFY2019. Not all claims contain an ICD10 diagnosis code. Claims without a diagnosis code include pharmacy, transportation, hospice, personal care, (most) dental, and other claims. ICD10 codes were used to identify the following chronic conditions: cancer, diabetes, heart, injuries, lung, mental health, obesity stroke, and tobacco.

PREVENTION GRANTS

Data on prevention grants comes from the Alaska Department of Health and Social Services SFY2019 Grant Book, Division of Behavioral Health section. Some grants include federal sources; these sources were not included in the analysis. The study team assigned rates of attribution consistent with the 2016 Update or based on grant descriptions.

SOCIAL WELFARE RELATED COSTS

State social welfare costs attributable to drug misuse are taken from *Chapter 7, Public Assistance and Social Services*.

JUSTICE SYSTEM

State justice system spending comes from State of Alaska Office of Management and Budget SFY2019 documents. The proportions of total justice system spending borne by federal, state, and local governments are derived from U.S. Bureau of Justice Statistics figures inflation-adjusted from 2013 dollars, the most recent available update. Alaska justice system costs attributable to drug misuse are taken from *Chapter 4, Criminal Justice and Protective Services*.

Abbreviations

ACS	American Community Survey
AIDS	Acquired Immunodeficiency Syndrome
AMI	Any mental health illness
ART	Antiretroviral treatment
BJS	Bureau of Justice Statistics
CDC	Centers for Disease Control and Prevention
DAA	Direct-acting antiviral therapy

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
FFY	Federal Fiscal Year
GF	General Fund
HAVS	Health Analytics and Vital Statistics
HFDR	Alaska Hospital Facilities Data Reporting Program
LTC	Long term care
MDE	Major depressive episodes
NAMI	National Alliance on Mental Illness
NCVS	National Criminal Victimization Survey
NHTSA	National Highway Traffic Safety Administration
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NIH	National Institute of Health
NSDUH	National Survey of Drug Use and Health
OASDI	Old Age, Survivors, and Disabilities Insurance
OSC	Office of Children Services
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

- In 2016-2017, approximately 21,000 Alaskans age 12 or older (3.5%) used illicit drugs (not including recreational marijuana) in the previous month. A slightly higher percentage, 3.7% (or 22,000 Alaskans), used illicit drugs in the previous year, including 14,000 (2.3 percent) using cocaine, 5,000 (0.8%) using methamphetamine and 3,000 (0.4%) using heroin.
- Additionally, 28,000 Alaskans (4.8%) used pain relievers for non-medical reasons, including 4,000 (or 0.7%) who have a pain reliever use-disorder.
- Alaska drug-use patterns are similar to U.S. patterns with the one exception, illicit drug use disorders are higher in Alaska than in the U.S. (3.7% and 2.8%, respectively).
- The highest percentage of illicit drug misuse (in the past month) by age group occurred among young adults (7.2% of all Alaskans age 18-25). Approximately 2.4% of Alaska teenagers (age 12-17) used illicit drugs.
- In 2016-2017, 15.8% (or 93,000 Alaskans) consumed marijuana in the previous month and 22.7% (or 133,000 Alaskans) used it in the previous year. Prevalence for both are higher than for the U.S. as a whole (9.2% and 14.5%, respectively).
- The highest percentage of marijuana use (in the past year) by age group was by young adults age 18-25 (39.4%).

Illicit Drug Consumption in Alaska

In 2016-2017, approximately 21,000 Alaskans age 12 or older (3.5%) used illicit drugs (not including marijuana) in the previous month. In the previous 12 months, 3.7% or 22,000 Alaskans used illicit drugs, including 14,000 (2.3 percent) using cocaine, 5,000 (0.8%) using methamphetamine and 3,000 (0.4%) using heroin.

Additionally, 28,000 Alaskans (4.8%) used pain relievers for non-medical reasons. Of these 28,000 pain reliever drug users, 4,000 (or 0.7%) have a pain reliever use disorder.

These usage patterns are similar to U.S. patterns with the one exception, illicit drug-use disorders are more prevalent in Alaska than in the U.S. (3.7% and 2.8%, respectively).

Table 1. Illicit Drug Prevalence Estimates with Alaska Model-Based Population Estimates, Age 12+, 2016-2017

	Alaska		United States
Drug Indicator, Ages 12+	Percent (95% Confidence Interval)	# of Alaskans (95% Confidence Interval)	Percent (95% Confidence Interval)
Illicit Drug Use in the Previous Month	3.5 (2.9-4.4)	21,000 (17,000-26,000)	3.4 (3.2-3.5)
Illicit Drug Use in the Previous Year	3.7 (3.0-4.6)	22,000 (17,000-27,000)	2.8 (2.6-2.9)
Cocaine Use in the Previous Year	2.3 (1.8-3.1)	14,000 (10,000-18,000)	2.0 (1.9-2.1)
Heroin Use in the Previous Year	0.4 (0.2-0.8)	3,000 (1,000-5,000)	0.3 (0.3-0.4)
Methamphetamine Use in the Previous Year	0.8 (0.5-1.4)	5,000 (3,000-8,000)	0.6 (0.5-0.6)
Pain Reliever Misuse in the Previous Year	4.8 (4.0-5.7)	28,000 (24,000-34,000)	4.2 (4.0-4.3)
Pain Reliever Use Disorder in the Previous Year	0.7 (0.5-0.9)	4,000 (3,000-5,000)	0.6 (0.6-0.7)

Source: National Survey on Drug Use and Health, SAMHSA

The highest percentage of illicit drug use (in the previous month) by age group occurred among young adults (7.2% of all Alaskans age 18-25). Approximately 2.4% of teenagers (age 12-17) used illicit drugs in Alaska.

Table 2. Illicit Drug Use in the Previous Month Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2016-2017

Age Group	Alaska	United States
	Percent (95% Confidence Interval)	Percent (95% Confidence Interval)
12+ years	3.5 (2.9-4.4)	3.4 (3.2-3.5)
12-17 years	2.4 (1.7-3.5)	2.4 (2.2-2.6)
18-25 years	7.2 (5.4-9.5)	7.1 (6.7-7.5)
26+ years	3.1 (2.3-4.0)	2.9 (2.7-3.1)
18+ years	3.7 (2.9-4.6)	3.5 (3.3-3.6)

Source: National Survey on Drug Use and Health, SAMHSA

Illicit drug use in the previous year is higher in Alaska than in the U.S. as a whole, including the population age 12 and older (3.7% and 2.8%, respectively), for teenagers age 12-17 (4.6% and 3.1%, respectively), as well as for adults 18 and older (3.6% and 2.7%, respectively).

Table 3. Illicit Drug Use in the Previous Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2016-2017

Age Group	Alaska	United States
	Percent (95% Confidence Interval)	Percent (95% Confidence Interval)
12+ years	3.7 (3.0-4.6)	2.8 (2.6-2.9)
12-17 years	4.6 (3.4-6.0)	3.1 (2.8-3.3)
18-25 years	7.9 (6.1-10.1)	7.2 (6.8-7.6)
26+ years	2.9 (2.1-3.9)	2.0 (1.9-2.1)
18+ years	3.6 (2.9-4.5)	2.7 (2.6-2.8)

Source: National Survey on Drug Use and Health, SAMHSA

Other Illicit Drug Use

For all age groups, young adults (age 18-25) have the highest percentage of nonmedical use of pain relievers (in the previous year) (8.0%), as well as for cocaine use (in the previous year) (5.8%). Cocaine use is consistent with the national rate of 5.8%. This same age group has the highest percentage of methamphetamine use (1.1%). Methamphetamine use among Alaskans is well above national rates in all age groups.

Table 4. Cocaine Use in the Previous Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2016-2017

Age Group	Alaska	United States
	Percent (95% Confidence Interval)	Percent (95% Confidence Interval)
12+ years	2.3 (1.8-3.1)	2.0 (1.9-2.1)
12-17 years	0.7 (0.4-1.1)	0.5 (0.4-0.6)
18-25 years	5.8 (4.2-7.9)	5.9 (5.5-6.3)
26+ years	2.0 (1.4-2.7)	1.6 (1.5-1.7)
18+ years	2.5 (1.9-3.3)	2.2 (2.1-2.3)

Source: National Survey on Drug Use and Health, SAMHSA

Table 5. Methamphetamine Use in the Previous Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2016-2017

Age Group	Alaska Percent (95% Confidence Interval)	United States Percent (95% Confidence Interval)
12+ years	0.84 (0.51-1.38)	0.56 (0.51-0.62)
12-17 years	0.24 (0.10-0.56)	0.16 (0.12-0.22)
18-25 years	1.10 (0.61-1.98)	0.93 (0.80-1.08)
26+ years	0.87 (0.49-1.55)	0.55 (0.48-0.61)
18+ years	0.90 (0.54-1.49)	0.60 (0.54-0.66)

Source: National Survey on Drug Use and Health, SAMHSA

Table 6. Pain Reliever Misuse in the Previous Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2016-2017

Age Group	Alaska	United States
	Percent (95% Confidence Interval)	Percent (95% Confidence Interval)
12+ years	4.8 (4.0-5.7)	4.2 (4.0-4.3)
12-17 years	3.7 (2.7-4.9)	3.3 (3.1-3.5)
18-25 years	8.0 (6.4-10.0)	7.1 (6.8-7.5)
26+ years	4.4 (3.5-5.5)	3.8 (3.6-4.0)
18+ years	4.9 (4.1-5.9)	4.3 (4.1-4.4)

Source: National Survey on Drug Use and Health, SAMHSA

Marijuana Consumption in Alaska

It is legal for people age 21 and older to consume marijuana in Alaska. In 2016-2017, 15.8% (or 93,000 Alaskans) consumed marijuana in the previous month, and 22.7% (or 133,000 Alaskans) used it in the previous year. Prevalence for both are higher than in the U.S. as a whole (9.2% and 14.5%, respectively).

Table 7. Marijuana Use Prevalence Estimates with Alaska Model-Based Population Estimates, Age 12+, 2016-2017

Drug Indicator, Ages 12+	Alaska		United States
	Percent (95% Confidence Interval)	# of Alaskans* (95% Confidence Interval)	Percent (95% Confidence Interval)
Marijuana Use in the Previous Month	15.8 (13.9-18.0)	93,000 (81,000-105,000)	9.2 (9.0-9.5)
Marijuana Use in the Previous Year	22.7 (20.5-25.1)	133,000 (120,000-147,000)	14.5 (14.2-14.8)

Source: National Survey on Drug Use and Health, SAMHSA

The highest percentage of marijuana use in the previous month and in the previous year, by age group, was by young adults age 18-25 (26.3% and 39.4%, respectively).

Table 8. Marijuana Use in the Previous Month Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2016-2017

Age Group	Alaska	United States
	Percent (95% Confidence Interval)	Percent (95% Confidence Interval)
12+ years	15.8 (13.9-18.0)	9.2 (9.0-9.5)
12-17 years	8.8 (7.1-10.9)	6.5 (6.1-6.8)
18-25 years	26.3 (22.7-30.2)	21.5 (20.8-22.1)
26+ years	15.0 (12.7-17.6)	7.6 (7.3-7.8)
18+ years	16.6 (14.5-18.9)	9.5 (9.3-9.8)

Source: National Survey on Drug Use and Health, SAMHSA

Table 9. Marijuana Use in the Previous Year Prevalence Estimates, by Age Group, Alaska and U.S. Comparisons, 2016-2017

Age Group	Alaska	United States
	Percent (95% Confidence Interval)	Percent (95% Confidence Interval)
12+ years	22.7 (20.5-25.1)	14.5 (14.2-14.8)
12-17 years	16.5 (14.0-19.4)	12.2 (11.8-12.6)
18-25 years	39.4 (35.4-43.7)	33.9 (33.2-34.7)
26+ years	20.7 (18.2-23.5)	11.6 (11.3-11.9)
18+ years	23.4 (21.1-26.0)	14.7 (14.4-15.1)

Source: National Survey on Drug Use and Health, SAMHSA

Co-Occurrence Disorders

Substance use disorders (SUD) (both drugs and alcohol) have been documented as a problem in Alaska and nationwide, but less frequently noted are individuals with SUDs who also have a mental health issue, defined as a co-occurring disorder. Individuals with co-occurring disorders display higher rates of substance dependence or misuse than the population as a whole. Further, they often receive treatment only for their mental illness rather than for substance dependence or misuse.

According to the National Alliance on Mental Illness (NAMI), people with co-occurring disorders are prone to violence, medication noncompliance, and failure to respond to treatment. However, the poor treatment response is often because they are treated for only one disorder. 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 have a more difficult time forming social relationships and becoming involved in their communities, a situation made worse because they are more likely to live in high-risk locations such as neighborhoods with high substance usage.

Co-Occurring Disorders in the U.S.

In 2017, there were approximately 18.7 million adults in the U.S. (age 18 and older) with a substance use disorder (SUD) and 46.6 million adults who had any mental illness (AMI). Among these two groups were 8.5 million adults who had both an SUD and AMI. These adults represent 45% of people who have an SUD and 18% of people with AMI.

Table 10. Previous Year Co-Occurring Mental Health and Substance Use Disorders, U.S. Adults Age 18+, 2017

Category	Count (In Millions)
Adults with Previous Year Substance Use Disorder	
Substance Use Disorder	18.7
Substance Use Disorder, No Mental Illness	10.2
Adults with Previous Year Mental Illness	
Mental Illness	46.6
Mental Illness, No Substance Use Disorder	38.1
Mental Illness & Substance Use Disorder	**8.5**

Source: National Survey of Drug Use and Health, SAMHSA

Mental health and substance-use co-occurring disorders are not limited to adults. In 2018, adolescents (age 12-17) who had a major depressive episode (MDE) in the previous year were more likely than adolescents without an MDE to have experienced binge drinking in the past month (8.5% compared to 4.1%, respectively).[3] 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).

Treatment

In 2017, among adults in the U.S. who had an SUD in the previous year and received some form of treatment, 51% with AMI received mental health or SUD treatment, 38% with AMI received mental health services treatment only, 4% with AMI received SUD treatment only, and 8% with AMI received both mental health and SUD treatment.

Among adults who had an SUD in the past year and received some form of treatment, 64% with SMI received mental health or SUD treatment, 50% with SMI received mental health services treatment only, 3% with SMI received SUD treatment only, and 12% with SMI received both mental health and SUD treatment.

[3] SAMHSA, *Key Substance Use and Mental Health Indicators in the United States: Results from the 2018 National Survey of Drug Use and Health.* August 2019. https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHNationalFindingsReport2018/NSDUHNationalFindingsReport2018.pdf (Accessed October 15,2019)

Table 11. Percentage of Adults (18+ Years) in the U.S. with Previous Year Substance Use Disorder Received Substance Use Treatment and/or Mental Health Services in the Previous Year, by Previous Year Level of Mental Illness, 2017

Services and Treatment	Any Mental Illness	Serious Mental Illness
	Percentage	Percentage
Mental Health Services or Substance Use Disorder Treatment	51.0	64.0
Mental Health Services Treatment Only	38.2	49.6
Substance Use Disorder Treatment Only	4.4	2.6
Both Mental Health Services and Substance Use Disorder Treatment	8.3	11.8

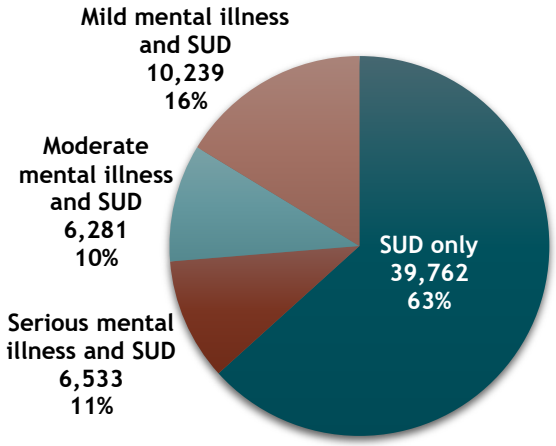
Source: National Survey of Drug Use and Health – Detailed Tables, SAMHSA

Co-Occurring Disorders in Alaska

In 2018, 7,666 Alaska youths and adults had a substance use disorder (SUD) and received community-based behavioral health services and 12,905 individuals received services for any mental illness (AMI).[4]

The most recent data available on individuals with an SUD who also received services for AMI is from 2013 and may be found in the report, "*Alaska Behavioral Health Systems Assessment Final Report.*" The report estimated that 37% of people who needed treatment for an AMI also needed SUD treatment, or approximately 3.1% of the Alaska population in 2013. Of those with AMI and an SUD, 16% had SUD and mild mental illness, 10% had moderate mental illness and SUD, and 11% had serious mental illness and SUD.

Figure 1. Alaska Adult Past Year Mental Health Prevalence Among Persons Needing Treatment for Illicit Drug or Alcohol Use, 2013



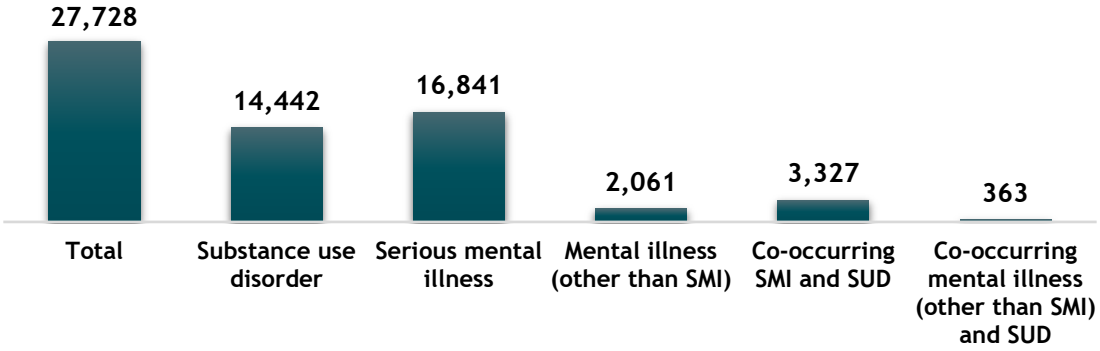
Source: Alaska Mental Health Trust Authority, "*Alaska Behavioral Health Systems Assessment Final Report*" (2016).

[4] Alaska Automated Information Management System (AKAIMS/EDI), DBH Uniform Reporting (UR) Client Profile Tables. Received from Patrick Swiger, Alaska DHSS (email October 17, 2019).

TREATMENT

According to SAMHSA's National Survey of Substance Abuse Treatment Services (N-SSATS), in 2018 Alaska had 91 treatment facilities, of which 44 (or 48%) offered treatment services for co-occurring disorders.[5] According to a report produced for The Trust, 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% of the total, and co-occurring disorders comprise 13% of the 27,728 Alaska adults.

Figure 2. Total Number of Alaska Adults Served with Support from State Medicaid and Behavioral Health Funds by Diagnosis, FY2013



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

[5] https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSSATS-2018.pdf. (Accessed October 15, 2019)

Chapter 2: Productivity Losses

- From 2014 to 2018, there were 687 deaths in Alaska linked to drugs, or an annual average of 137 deaths. These 687 deaths resulted in an estimated 22,346 potential years of life lost (PYLL) due to drug misuse and an annual average of 4,469 PYLL.
- Productivity loss due to deaths where drugs are the primary cause of death totaled approximately $174 million in Alaska in 2018.
    - An average of 53 women and 84 men died per year from drug misuse.
    - Female deaths attributed to drugs caused a productivity loss of $51 million, while male deaths caused the remaining $124 million productivity loss.
- The estimated cost of lost productivity due to incarceration in Alaska in 2018 was $50.3 million; $4.6 million from women (9%) and $45.7 million from men (91%).
- The estimated traditional labor force earnings loss for individuals with a drug disorder in 2018 was $166.1 million.
- In SFY2019, admission to 24-hour detoxification and residential treatment services resulted in an estimated loss of potential earnings of $14.9 million for 2,168 individuals; $6.2 million associated with drug-related treatment only and $7.7 million related to individuals receiving treatment for a combination of alcohol and drug misuse.
- In SFY2019, individuals with a primary or secondary diagnosis related to drug use disorders spent 158,961 days in hospital inpatient services and/or emergency departments for treatment of diseases and conditions attributable to these diagnoses, resulting in an estimated $24.1 million in lost earnings while receiving care. Individuals whose only primary diagnosis was attributed to drug use disorders had 9,033 days of lost earnings with a total cost of $1 million.

Lost Future Earnings Due to Mortality

Premature death due to drug misuse imposes a significant economic cost on Alaska. Various causes of death may be attributable to drug misuse either directly or indirectly, such as motor vehicle collisions, or homicide. Productivity losses from these drug-related, premature deaths are the largest category of drug-attributable economic impacts on Alaska's economy.

Premature death costs to the economy result from lost production of goods and services, including loss of wages that would have been circulated back into the economy. For individuals who would not have engaged in paid work, there is nevertheless a potential loss of societal value through household services such as raising children, caring for elders, and household maintenance.

A total of 774 deaths in Alaska from 2014 to 2018 included an ICD-10 code attributing them directly or partially to drugs. Adding the 659 directly attributable deaths to the drug-attributable fractions (DAF) of the partially-related deaths yields a total of 687 deaths that were drug-related, an annual average of 137 drug-related deaths between 2014 and 2018.

Table 12. Alaska Drug-Related Deaths, 2014-2018

	Deaths Caused by Selected ICD-10 Diagnoses 2014-2018	Estimated Drug Attributable Deaths 2014-2018	Annual Average Drug Attributable Deaths
Directly attributable	659	659	132
Partially attributable	115	28	6
Total	**774**	**687**	**138**

Notes: Due to rounding columns may not add to totals. See Appendix A for ICD-10 codes used and attribution rates by gender and age groups.
Source: Death counts provided by DHSS' Division of Public Health, Health Analytics and Vital Statistics (HAVS). McDowell Group calculations based on drug attribution rates CDC's Vital Statistics; Petra et al. *"Substance-attributable morbidity and mortality changes to Canada's epidemiological profile: Measurable difference over a ten-year period"*; and Rogers et. al. *"The Costs of Alcohol and Drug Abuse in Maine"*.

Estimated Future Earnings Losses for Underlying Cause of Death

The table below shows the annual average number of deaths by age and gender from 2014 to 2018 where drugs were determined to be the underlying cause of death. The term "underlying" refers to an event or condition that started the chain of events that led to 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 from time of death.

The loss of future earnings from deaths with an underlying drug-related cause totaled $174.4 million. The underlying drug-related cause of death with the highest annual costs is accidental poisoning by and exposure to drugs (105 deaths per year and $141.5 million in loss). Men make up 61% of the deaths (84 deaths per year) but represent 72% of the total lost earnings potential ($124.4 million) because of their higher average wages. The remaining $50.0 million is associated with female deaths (53 deaths per year).

Table 13. Estimated Future Earnings Loss in Alaska, Drug-Attributable Underlying Cause of Mortality by Age and Gender, Annual Average Deaths, 2014-2018, $2018

Gender/Age	Annual Avg. Attributable Deaths	Net Present Value of Future Earnings	Estimated Loss Due to Drugs
Males	**84**	**-**	**$124,375,103**
0-4 years	<1	$1,606,834	$321,367
5-14 years	0	$1,866,784	$0
15-24 years	9	$2,208,171	$20,756,805
25-34 years	19	$2,187,080	$42,551,819
35-44 years	19	$1,771,554	$33,067,819
45-54 years	16	$1,157,454	$18,750,753
55-64 years	17	$501,764	$8,543,040
65-74 years	3	$131,156	$371,959
75-84 years	<1	$25,215	$11,498
85+ years	<1	$4,237	$42
Females	**53**	**-**	**$50,016,271**
0-4 years	0	$1,188,413	$0
5-14 years	0	$1,380,145	$0
15-24 years	5	$1,597,149	$7,666,317
25-34 years	12	$1,488,042	$18,481,488
35-44 years	10	$1,142,169	$10,864,309
45-54 years	15	$702,166	$10,448,232
55-64 years	9	$278,053	$2,414,059
65-74 years	2	$64,145	$138,297
75-84 years	<1	$11,673	$3,105
85+ years	<1	$1,163	$465
Total	**137**	**-**	**$174,391,374**

Note: Due to rounding columns may not add to totals.
Source: Death counts provided by DHSS' Division of Public Health, Health Analytics and Vital Statistics (HAVS). McDowell Group calculations based on drug attribution rates CDC's Vital Statistics; Petra et al. *"Substance-attributable morbidity and mortality changes to Canada's epidemiological profile: Measurable difference over a ten-year period"*; and Rogers et. al. *"The Costs of Alcohol and Drug Abuse in Maine"*. 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 using the Urban Alaska Consumer Price Index.

Estimated Value of Potential Years of Life Lost (PYLL)

Another way to see the impact of deaths 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 calculated from the person's age at the time of death, i.e., the number of years they would have been expected to live if drugs had not been a factor in their deaths.

The 687 deaths between 2014 and 2018 attributable to drug misuse are associated with a total of 22,346 PYLL, an annual average of 4,469 PYLL per year.

Table 14. Estimated PYLL (Potential Years of Life Lost) Due to Drug-Attributable Causes in Alaska, 2014-2018

Level of Attribution	Estimated Attributable Deaths 2014-2018	Attributable PYLL 2014-2018	Avg. Annual PYLL
Directly attributable	659	21,921	4,384
Partially attributable	28	425	85
Total	**687**	**22,346**	**4,469**

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

Lost Productivity Due to Incarceration

Alaska also experiences lost productivity from people incarcerated due to drug misuse because those individuals are unable to work, either in or outside the home. Incarcerated individuals may have committed a crime directly related to drug misuse, such as drug possession or may have committed crimes when under the influence of drugs or in order to obtain more drugs.

The table below shows the number of inmates in Alaska by offense category, the percentages of crimes attributable to drugs (based on national percentages (no Alaska specific data available)), and the estimated numbers of inmates attributed to drugs. In 2017, there were 2,605 inmates incarcerated in Alaska for the specified offenses; an estimated 840 incarcerations were attributed to drug misuse (32% of the total).

Table 15. Incarcerations Attributed to Drug Misuse by Offense in Alaska, 2017

Type of Offense	2017 Alaska Prison Inmates by Offense Category [1]	Percent Attributed to Drugs[2]	Estimated Number Drug-Attributed
Violent Death			
Homicide/murder/ manslaughter	474	28	133
Forcible rape	244	18	44
Sexual offenses	546	13	71
Aggravated assault	566	24	136
Other assaults	5	23	1
Property Crime			
Robbery	120	46	55
Burglary	103	47	48
Larceny-theft	133	46	61
Motor vehicle theft	81	42	34
Forgery and fraud	24	41	10
Arson	9	28	1
Vandalism	73	23	17
Drug Crime			
Drug offenses	227	100	227
Total	**2,605**		**840**

[1] Alaska Department of Corrections (DOC), "*Alaska Offender Profile, 2017*" (2018). https://doc.alaska.gov/admin/docs/2017Profile.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 annual average earnings for Alaskans 16 or older by gender from the ACS 2018 1-year Estimates. These earnings were $61,226 for males and $49,020 for females. The estimated cost of lost productivity due to incarceration in Alaska in 2018 was $50.3 million; $4.6 million from women (9%) and $45.7 million from men (91%).

Table 16. Cost of Lost Productivity by Gender in Alaska, 2018

Estimated Number	Attributed to Drugs[1]	Median Earnings[2]	Earnings Lost Due to Incarceration Due to Drugs
Females Incarcerated	93	$49,020	4,550,036
Males Incarcerated	747	$61,226	45,720,516
Total	**840**		**$50,270,552**

Source: [1] McDowell Group calculations based on DOC, and NDIC drug attribution rates. [2] American Community Survey (ACS) 2018 American Community Survey 1-year Estimates.

Losses Due to Impaired Productivity

Drug misuse can interfere with an individual's ability to gain employment and with their productivity on the job and at home. Drugs can interfere with an individuals' ability to work (physical and/or mental impairment), ability to find a job (lack of skills, experience, or reliability), and potentially, willingness or motivation to find a job. Thus, wages and salaries among workers with excessive drug misuse may be lower than among similar workers without such problems.

It is recognized there are losses to household productivity associated with excessive drug misuse (i.e., care of children, household chores, etc.); however, data are lacking to estimate reductions in household activities and those estimates are not included in this productivity loss estimate.

Approximately 3.7% of Alaskans age 12 and older have a drug disorder. The estimated traditional labor force earnings loss for individuals with a drug disorder in 2018 was $166.1 million.

Table 17. Alaska Labor Force Earnings Losses for Individuals with a Drug Disorder, by Gender, 2018

Age Groups	Male	Female	Total
2018 Alaska population 18-64 years[1]	239,356	226,299	465,655
2017 average percent of population (male and female) age 12+ reporting a drug disorder[2]	3.7%	3.7%	3.7%
2018 estimated number of Alaskans age 18-64 reporting a drug disorder	8,856	8,373	17,229
2018 median earnings[1]	$61,226	$49,020	
Estimated potential earnings for Alaskans reporting a drug disorder	$542,217,456	$410,444,460	$952,661,916
Loss in productivity from drug disorder[3]	17%	18%	
Estimated productivity loss due to drug disorder	**$92,176,968**	**$73,880,003**	**$166,056,971**

[1] American Community Survey – One-year Average, 2018
[2] National Survey on Drug Use and Health, SAMHSA
[3] U.S. Department of Justice National Drug Intelligence Center, *The Economic Impact of Illicit Drug Use on American Society, 2011* (2011).

Lost Productivity Due to Drug Treatments

When individuals are admitted to a medical facility for treatment of drug misuse, they may lose time that would otherwise be spent in the workforce. This results in economic loss due to reduced employment, production, and services. The table below quantifies potential earnings forfeited by clients admitted to Division of Behavioral Health Treatment and Recovery grantee agencies for 24-hour detoxification or residential services.

In SFY2019, admission to 24-hour detoxification and residential treatment services resulted in an estimated loss of potential earnings of $14.9 million for 2,168 individuals, with $6.2 million associated with drug-related treatment only and $7.7 million related to individuals receiving treatment for a combination of alcohol and drug misuse. These lost earnings were associated with a total of 98,560 bed days.

Table 18. Number of 24-Hour Detoxification and Residential Bed Use and Estimated Lost Earnings from Admissions, SFY 2019

Treatment by Substance	Women (Unique Count)	Men (Unique Count)	# of Bed Days	Annual Average Earnings Daily Rate[1]	Estimated Lost Earnings
Drug Only	357	370	40,857	$151.48	$6,189,018
Combination of Alcohol and Drug Treatment	525	916	57,703	$151.48	$8,740,850
Alcohol and Drugs	**882**	**1,286**	**98,560**	**$151.48**	**$14,929,868**

[1] Average compensation per day estimated based on DOLWD QCEW 2018 wage data divided by 52 weeks and 7 days per week.
Source: Total number of bed use by day and unique counts provided by the State of Alaska Division of Behavioral Health Alaska Division of Behavioral Health. (2019) AKAIMS- Alaska's Automated Information Management System.

Lost Productivity Due to Drug-Related Medical Conditions

In SFY2019, individuals with a primary or secondary diagnosis related to drug use disorders spent 158,961 days receiving hospital inpatient and/or emergency department services for treatment of diseases and conditions attributable to these diagnoses. These lost days of work resulted in an estimated $24.1 million in lost earnings. For individuals with the primary diagnosis attributable to drug use disorders only, 9,033 days of lost work time cost $1 million.

Table 19. Total Length of Stay for Inpatient and ED Treatment of Diseases and Conditions Attributable to Drug Misuse (Primary Diagnoses) and Subsequent Lost Potential Earnings, SFY2019

Total Inpatient Length of Stay (days)	Total ED Length of Stay (days)*	Total Length of Stay (days)	Applied Drug-Attributable Fractions[1]	Annual Average Earnings Daily Rate[2]	Estimated Lost Potential Earnings
5,867	**3,166**	**9,033**	**6,530**	**$151.48**	**$989,164**

[1] McDowell Group calculations based on national DAF found in the health disorder codes appendix of 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."
[2] Average compensation per day estimated based on DOLWD QCEW 2018 wage data divided by 52 weeks and 7 days per week.
Source: Alaska Hospital Facilities Data Reporting Program (HFDR).

Table 20. Total Length of Stay for Inpatient and ED Treatment of Diseases and Conditions Attributable to Drug Misuse (Primary and Secondary Diagnoses) and Subsequent Lost Potential Earnings, SFY2019

Total Inpatient Length of Stay (days)	Total ED Length of Stay (days)	Total Length of Stay (days)	Applied Drug-Attributable Fractions[1]	Annual Average Earnings Daily Rate[2]	Estimated Lost Potential Earnings
115,362	53,721	169,083	158,961	$151.48	$24,079,412

[1] McDowell Group calculations based on national DAF found in the health disorder codes appendix of 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."
[2] Average compensation per day estimated based on DOLWD QCEW 2018 wage data divided by 52 weeks and 7 days per week.
Source: Alaska Hospital Facilities Data Reporting Program (HFDRP).

Chapter 3: Vehicle Traffic Collisions

- In 2016, 174 vehicle collisions in Alaska were attributed to suspected drug-impaired drivers, 2% of the 10,889 total traffic collisions:
  - 91 no apparent injury crashes (52% of drug-suspected crashes)
  - 29 property damage-only crashes (17%)
  - 28 minor injury crashes (16%)
  - 25 possible injury crashes (14%)
  - 18 major injury crashes (10%)
  - 11 fatal crashes (6%)
- In 2016, 194 Alaskans were involved in drug-suspected crashes:
  - 97 persons had no apparent injury
  - 29 had minor injuries
  - 22 had major injuries
  - 27 had possible injuries
  - 19 persons involved died
- The 174 drug-suspected collisions in 2016 resulted in $60 million in costs associated with property damages, major and minor injuries, and fatalities. Adding quality of life impacts brings total drug-suspected collision costs to $352 million (2018 dollars).

Drug-Suspected Collisions

DOTPF determines a crash is due to suspected drug impairment if it meets one or more of the following criteria:

- A blood or urine drug test given to the driver, pedestrian, pedal cyclists, or recreational vehicle operator was positive
- A police investigation indicated drug consumption was a contributing factor
- A citation was issued for driving while under the influence of drugs.

While DOTPF maintains records of collisions involving off-road vehicle collisions such as ATVs and snowmachines when they occur on roadways, no record is kept of those incidences if they occur off-road.

DOTPF maintains records of all traffic collisions in Alaska by injury severity, including suspected drug-impaired collisions. National Highway Traffic Safety Administration (NHTSA) estimates of the average costs per crash were used to develop a table of unit costs of drug impaired traffic collisions in Alaska for 2016.

Table 21. Unit Costs of Suspected Drug Impaired Traffic Collisions in Alaska, 2016 (2018$)

Type of Cost	Property Damage Only	Minor Injury	Major Injury	Fatal
Medical	$0	$4,980	$650,653	$18,798
Emergency services	$45	$142	$1,361	$1,435
Market productivity	$0	$4,679	$550,972	$1,840,637
Household productivity	$96	$1,497	$156,280	$501,704
Insurance administration	$304	$6,117	$117,901	$45,062
Workplace costs	$99	$542	$17,646	$18,747
Legal costs	$0	$2,246	$137,070	$169,429
Congestion costs	$1,714	$1,765	$2,433	$9,101
Property damage	$3,888	$8,598	$24,013	$17,839
Quality-adjusted life years (QALYs)	$0	$38,794	$7,908,935	$13,516,242
Total	**$6,145**	**$69,359**	**$9,567,263**	**$16,138,992**

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

In 2016, there were 174 drug-suspected crashes, 2% of the 10,889 traffic crashes recorded in Alaska in 2016. Of the drug-suspected crashes, 91 had no apparent injuries (52% of drug-suspected crashes), 29 involved property damage only (17%), 28 were minor injury crashes (16%), 25 had possible injuries (14%), 18 had major injuries (10%), and 11 involved fatalities (6%).[6]

DOTPF also reports the number of persons who were involved in drug-suspected collisions, including occupants of the impaired driver's car, occupants of other cars, pedestrians, bicyclists, and others. In 2016, there were 194 persons involved in drug-suspected crashes and 29 had minor injuries, 27 had possible injuries, 22 had major injuries, and 19 persons involved died. The table below shows traffic collisions related to suspected alcohol impaired by injury severity.

Table 22. Drug-Suspected Traffic Crashes and Persons Involved, by Type, Alaska 2016

Category	Crash Count[1]	Persons Involved
No apparent injury	91	97
Property damage only	29	*
Minor injury	28	29
Possible injury	25	27
Major injury	18	22
Fatality	11	19
Drug-suspected crashes	**174**	**194**

Note:[1]Crash count does not sum to the total of drug-suspected crashes as crashes with no apparent injury and property damage only may overlap.
Source: DOTPF

[6] Crash count does not sum to the total of drug-suspected crashes as crashes with no apparent injury and property damage only may overlap.

The table below shows estimated costs for the 86 Alaska drug-suspected collisions in the previous table that involved a confirmed loss, either through property, minor injury, major injury or death. Total cost of the drug suspected collisions in Alaska in 2016 was $352 million (2018 dollars). This includes $60 million in various medical, legal and productivity costs, and approximately $292 million in costs associated with reduced quality-adjusted life years.[7]

Table 23. Number of Drug Suspected Traffic Collisions and Cost of Collisions in Alaska, 2016 (2018$)

	Property Damage Only	Minor Injury	Major Injury	Fatal	Total
Number of Alaska Impaired Collisions[1]	**29**	**28**	**18**	**11**	**86**
Type of Costs [2]					
Medical	$0	$139,440	$11,711,754	$206,778	$12,057,972
Emergency services	$1,305	$3,976	$24,498	$15,785	$45,564
Market productivity	$0	$131,012	$9,917,496	$20,247,007	$30,295,515
Household productivity	$2,784	$41,916	$2,813,040	$5,518,744	$8,376,484
Insurance administration	$8,816	$171,276	$2,122,218	$495,682	$2,797,992
Workplace costs	$2,871	$15,176	$317,628	$206,217	$541,892
Legal costs	$0	$62,888	$2,467,260	$1,863,719	$4,393,867
Congestion costs	$49,706	$49,420	$43,794	$100,111	$243,031
Property damage	$112,752	$240,744	$432,234	$196,229	$981,959
Sub-Total	$178,234	$855,848	$29,849,922	$28,850,272	$59,734,276
Quality-adjusted life years (QALYs)	$0	$1,086,232	$142,360,830	$148,678,662	$292,125,724
Total	**$178,234**	**$1,942,080**	**$172,210,752**	**$177,528,934**	$351,860,000

Note: Possible injuries were not allocated costs.
[1] DOTPF
[2] NHSTA, *"The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)"* (2015). http://www-nrd.nhtsa.dot.gov/pubs/812013.pdf.

[7] Quality of life damages include pain, as well as suffering (emotional worry, fear, humiliation or concern). It can include inability to engage in physical activity (like walking up stairs), damage to reputation, experience of disgrace, physical mutilation or deformity, sterility, loss of an organ, the loss of enjoyment of living, a loss of companionship by the death of a loved one, or a loss of affection from another, among other examples.

Chapter 4: Criminal Justice and Protective Services

- In 2017, there were an estimated 37,762 known offenses or arrests in various categories of crimes in Alaska. Of these, 14,850 were attributable to drug misuse, 39% of the specified categories. The offenses with the highest counts attributable to drugs were larceny-theft (8,254), burglary (2,007), and motor vehicle theft (1,818). The estimated drug-related cost to the criminal justice system is $123.1 million. Motor vehicle theft was the largest component at $38.7 million, followed by aggravated assault ($17.7 million), and other assaults ($14.5 million).
- In Alaska in 2018, there were approximately 40,416 victims of the offenses described above; 15,009 victims were attributable to drug misuse, or approximately 37% of victims. The estimated drug-related direct cost to victims of crime is $319 million, with indirect costs of $844 million.
- In SFY2018, Office of Children Services (OCS) expenditures for child abuse and neglect attributable to drug misuse totaled an estimated $10.5 million (or 6% of total OCS spending).

Criminal Justice

Crimes can be directly attributed to drug misuse, such as driving under the influence, theft, and other 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 victims of crime (both direct and indirect). Productivity loss due to incarceration is covered in Chapter 2.

Offenses and Arrests

In 2017, there were an estimated 37,762 known offenses or arrests in various categories of crimes. Of these, 15,228 were attributable to drug misuse, 39% of the specified categories. The offenses with the highest counts attributable to drugs were larceny-theft (8,254), burglary (2,007), and motor vehicle theft (1,818).

Table 24. Offenses and/or Arrests Attributable to Drugs in Alaska, All Ages, 2017

Type of Offense[1]	Alaska Number of Known Offenses or Arrests	Percent Attributable to Drug Misuse [2]	Estimated Offenses/Arrests Attributable to Drug Misuse
Criminal homicide	63	28	18
Rape (rape and attempted)	1,099	18	198
Other sex offenses	259	13	34
Aggravated assault	4,353	24	1,045
Other assaults	4,478	23	1,030
Robbery	969	46	446
Burglary	4,270	47	2,007
Larceny-theft	17,943	46	8,254
Motor vehicle theft	4,328	42	1,818
Total	**37,762**		**14,850**

[1] Alaska Department of Public Safety, *Crime in Alaska, 2017*(2018). http://www.dps.alaska.gov/statewide/docs/UCR/UCR_2018.pdf.
[2] 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

Total criminal justice system costs associated with drug misuse in Alaska in 2018 are estimated at $123.1 million. Motor vehicle theft accounted for the largest costs at $38.7 million, followed by aggravated assault ($17.7 million), and other assaults ($14.5 million).

Table 25. Criminal Justice System Costs Attributable to Drug Misuse by Offense in Alaska, 2017 (2018$)

Type of Offense	Estimated Alaska Offenses/Arrests Attributable to Drug Misuse[1,2]	Criminal Justice System Cost per Arrest/Offense (Adjusted 2018$)[3]	Estimated Alaska Drug-Related Costs
Criminal homicide	18	$639,958	$11,519,244
Rape (rape and attempted)	198	$43,169	$8,547,462
Aggravated assault	1,045	$14,087	$14,720,915
Other assaults	1,030	$14,087	$14,509,610
Robbery	446	$22,542	$1,467,746
Burglary	2,007	$6,729	$13,505,103
Larceny-theft	8,254	$4,694	$10,053,732
Motor vehicle theft	1,818	$6,304	$38,744,276
Total	**14,816**[4]		**$123,061,014**

[1] Alaska Department of Public Safety (2017 data published in 2018)
[2] U.S. Department of Justice National Drug Intelligence Center (NDIC), The Economic Impact of Illicit Drug Use on American Society 2011 (2011).
[3] 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. Adjusted to $2018.
[4] While the number of "other sex offenses" is estimated (see Table 24 above), no cost estimates for this offense is available and therefore, not included in this analysis.

Crime Victimization

There were approximately 40,416 victims of various offenses in Alaska in 2018; 15,009 victims were attributable to drug misuse, or approximately 37% of victims, based on national rates.

Table 26. Victimizations Attributable to Drug Misuse in Alaska, 2018

Type of Crime	2018 U.S. Victimization Rate per 1,000 persons 12 years or older[1]	Estimated Number of Alaska Victims[3]	Percent Drug Related[4]	Estimated Number of Victims Attributable to Drug Misuse
Homicide	--	62[2]	28	17
Rape/sexual assault	2.7	1,646	18	296
Aggravated assault	3.8	2,316	24	556
Other assault	18.4	11,216	23	2,580
Robbery	2.1	1,280	46	589
Burglary	13.8	8,412	47	3,954
Larceny Theft	21.1	12,862	46	5,917
Motor vehicle theft	4.3	2,621	42	1,101
Total		**40,416**		**15,009**

[1] Bureau of Justice Statistics, *Criminal Victimization, 2018* (2019). https://www.bjs.gov/index.cfm?ty=pbdetail&iid=6686
[2] DPS, *Crime in Alaska, 2017* (2018). http://www.dps.alaska.gov/statewide/docs/UCR/UCR_2018.pdf.
[3] 2018 population (age 12+) data from DOLWD.
[4] U.S. Department of Justice National Drug Intelligence Center (NDIC), The Economic Impact of Illicit Drug Use on American Society 2011 (2011).

Victim of Crime Direct Costs

Direct victim of crime costs are defined as the "economic losses suffered by victims of crime, including medical care costs, lost earnings, and property loss/damage." The estimated direct costs related to victims of crime due to drug misuse in Alaska in 2018 were $318.8 million. Homicide was the costliest ($204 million), followed by theft ($44 million), and other assaults ($37 million).

Table 27. Victim of Crime Direct Costs Attributable to Drug Misuse in Alaska, 2018

Type of Offense	Estimated Number of Victims Attributed to Drug Misuse	Victim Direct Cost Per Offense[1]	Estimated Alaska Drug-Related Direct Costs
Homicide	17	$1,202,387[2]	$204,405,824
Rape/sexual assault	296	$9,058	$2,681,168
Robbery	589	$5,378	$3,167,642
Aggravated assault	556	$14,184	$7,886,304
Other assault	2,580	$14,184	$36,594,720
Theft	5,917	$7,483	$44,276,911
Burglary	3,954	$2,221	$8,781,834
Motor vehicle theft	1,101	$9,967	$10,973,667
Total	**15,009**		**$318,768,070**

[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. Adjusted to $2018.
[2] Crime victim cost for murder was calculated as the mean present value of lifetime earnings for a homicide victim.

Victim of Crime Indirect Costs

Indirect costs include "losses suffered by victims of crime, including pain and suffering, decreased quality of life, and psychological distress." The estimated indirect victim of crime costs related to drug misuse in Alaska in 2018 were $814 million. "Other assaults" were the costliest ($382 million), followed by homicide ($234 million), and rape or sexual assault ($92 million).

Table 28. Victim of Crime Indirect Costs Attributable to Drug Misuse in Alaska, 2018

Type of Offense	Estimated Number of Victims Attributable to Drug Misuse (2017)	Victim Indirect Cost Per Offense [1]	Estimated Alaska Drug-Related Indirect Costs
Homicide	17	$13,763,139	$233,973,363
Rape/sexual assault	296	$311,424	$92,181,504
Robbery	589	$35,215	$20,741,635
Aggravated assault	556	$148,228	$82,414,768
Other assault	2,580	$148,228	$382,428,240
Theft	5,917	$16	$94,672
Burglary	3,954	$501	$1,980,954
Motor vehicle theft	1,101	$409	$450,309
Total	**15,009**		**$814,265,445**

[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. Adjusted to $2018.
[2] Indirect cost for murder was calculated as the mean value of a statistical life.

Protective Services

Drug misuse 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 their children and four times more likely to neglect them. Likewise, an adult caregiver who struggles with substance use is more likely to abuse his or her charge. Because of drug misuse, agencies that assist victims of abuse and neglect see more cases and incur greater costs.

Child Protective Services

The *National Survey of Children and Adolescent Well-Being* indicates that 61% of infants and 41% of older children placed in out-of-home care are from families with active substance use disorders (Wulczyn, Ernst, and Fisher, 2011). Based on a national average of almost 31%, parental substance use disorder was the documented reason for removal all children and placement in foster care in 2012 (National Data Archive on Child Abuse and Neglect, 2012).[8]

Applying the estimate of 31% to total Alaska spending for foster care and protective services yields estimated spending on child protective services attributed to substance use of $50.2 million. Of that, $39.7 million is attributed to alcohol misuse; the remaining $10.5 million is attributed to drug misuse.

[8] In several states that percentage surpassed 60% (National Data Archive on Child Abuse and Neglect, 2012).

Table 29. Summary of OCS Expenditures Attributable to Substance Use ($Millions), SFY2018

	Undesignated General Fund + Designated General Fund	Other Funds	Federal Funds	Total
Formula Expenditures				
Foster Care Base Rate	$15,652,400		$4,745,900	$20,398,300
Foster Care Augmented Rate	$1,195,400		$271,500	$1,466,900
Foster Care Specialized Need	$11,693,900	$3,952,200	$988,800	$16,634,900
Subsidized Adoptions/Guardians	$19,925,100		$17,706,900	$37,631,900
Total Spending	**$48,466,800**	**$3,952,200**	**$23,713,100**	**$76,132,000**
Non-Formula Expenditures				
Children's Services Management	$6,655,700		$4,058,800	$10,715,500
Children's Services Training	$776,300		$563,800	$1,340,100
Front Line Social Workers	$36,516,500	$68,700	$23,087,400	$59,672,600
Family Preservation	$2,815,200	$3,510,000	$7,766,400	$14,121,600
Total Spending	**$46,763,700**	**$3,578,700**	**$35,476,400**	**$85,849,800**
All Spending	**$95,230,500**	**$7,530,900**	**$59,189,500**	**$161,981,800**
Total Attributable to Substance Use (31%)[1]	**$29,521,455**	**$2,334,579**	**$18,348,745**	**$50,214,358**
Total Attributable to Alcohol Misuse (25% of total)[2]	**$23,943,873**	**$1,712,605**	**$13,856,311**	**$39,718,027**
Total Attributable to Drug Misuse (6% of total)[3]	**$5,577,582**	**$621,974**	**$4,492,434**	**$10,496,331**

[1] National Data Archive on Child Abuse and Neglect, 2012 estimate for foster .
[2] McDowell Group estimated found in McDowell Group, *The Economic Costs of Alcohol Misuse in Alaska, 2019* (November 2019).
[3] McDowell Group estimates.
Source: State of Alaska 2018 Actual Expenditures, https://omb.alaska.gov/ombfiles/20_budget/HSS/Proposed/15_rdu486.pdf

Title 47 Protective Custody

The Title 47 Protective Custody Statute allows the State of Alaska to take people who are incapacitated by drugs 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. There are no state estimates of the percent of protective holds associated with drug misuse.

In SFY2017, the Adult Protective Services Program received 7,494 reports of harm and investigated 1,757 of these reports.

Chapter 5: Health Care

- Hospital-related medical costs to treat conditions and diseases with a primary diagnosis associated with drug misuse totaled $49 million in 2018, including $30 million in inpatient charges, $10 million in emergency department charges, and $9 million in outpatient charges delivered in a hospital setting.
- Hospital-related medical costs to treat conditions and diseases with a primary and/or secondary diagnosis associated with drug misuse totaled $1.6 billion in 2018, including $1.1 billion in inpatient charges, $205 million in emergency department charges, and $259 million in outpatient charges for services delivered in a hospital setting. These charges include some or all of those in the bullet above. They are provided to demonstrate the impact of including secondary diagnoses in the costs associated with drug misuse.
- In SFY2019, Division of Behavioral Health funding provided to treatment and recovery grantee agencies for drug treatment to address drugs only or alcohol and drugs combined was an estimated $5.8 million.
- In 2018, an estimated $2.1 million in HIV/AIDS medical costs were attributable to injectable drug use in Alaska.
- In 2018, an estimated $41 million in treatment costs were associated with 656 new cases of HCV attributed to injectable drug use.

Medical Costs

This section describes the costs to treat diseases and conditions that arise from drug misuse. Medical costs are presented for three hospital setting types: inpatient, ED, and outpatient. Costs associated with Opioid Use Disorder (OUD) are described in the next chapter.

Primary Diagnosis

INPATIENT

Some of the health problems caused by drug misuse require admission to a hospital. In 2018, unduplicated inpatient charges in Alaska attributable to a primary diagnosis of drug misuse totaled $29.7 million. The number of admissions attributable to drug misuse totaled 627. The total length of hospital stays resulting from those admissions was 3,459 days.

Table 30. Unduplicated Alaska Inpatient Hospital Admissions, Length of Stay, and Total Charges Drug Attributable, Primary Diagnosis Only, 2018

Attributable	Admissions	Length of Stay (days)	Charges
TOTAL	**627**	**3,459**	**$29,724,839**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). DAF attribution rates applied by McDowell Group.

Emergency Department (ED) Costs

Some patients with health problems caused by drug misuse receive treatment in the ED. In 2018, unduplicated emergency department charges in Alaska attributable to drug misuse primary diagnosis totaled $9.9 million. The number of visits attributable to drug misuse totaled 2,953. The total length of hospital stays resulting from those visits was 3,071 days.

Table 31. Unduplicated Alaska Emergency Department Visits, Length of Stay, and Total Charges Drug Attributable, Primary Diagnosis Only, 2018

Attributable	Visits	Length of Stay (days)	Charges
TOTAL	**2,953**	**3,071**	**$9,885,883**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). DAF attribution rates applied by McDowell Group.

Outpatient In-Hospital Costs (Excluding ED Costs)

Outpatient services are visits to a physician office, outpatient surgery, and other outpatient settings in the hospital (excluding the ED). In 2018, unduplicated outpatient charges in Alaska attributable to a primary diagnosis of drug misuse totaled $9.4 million. The number of visits attributable to drug misuse totaled 8,222. The total length of hospital stays resulting from those visits was 24,310 days.

Table 32. Unduplicated Alaska Outpatient (excluding Emergency Department) Visits, Length of Stay, and Total Charges Drug Attributable, Primary Diagnosis Only, 2018

Attributable	Visits	Length of Stay (days)	Charges
TOTAL	**8,222**	**24,310**	**$9,380,077**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). DAF attribution rates applied by McDowell Group.

Table 33. Inpatient Hospital Admissions, Length of Stay, and Charges, Primary Diagnosis, HFDR Total and Attributable to Drugs, Alaska, 2018

Drug Related Attribution Group	Age	Total Inpatient Stays			Attributable Fraction	Attributable to Drugs		
		# of Admissions	Length of Stay (days)	Total Charges ($)		# of Admissions	Length of Stay (days)	Total Charges ($)
Drug dependence	All	90	710	$2,921,507	100%	90	710	$2,921,507
Drug dependence complicating pregnancy, childbirth, or puerperium	All	75	197	$1,906,195	100%	75	197	$1,906,195
Drug use, mental disorders, and psychoses	All	58	501	$1,714,930	100%	58	501	$1,714,930
Drug withdrawal syndrome in newborn	All	13	250	$2,542,609	100%	13	250	$2,542,609
Endocarditis*	All	80	1,310	$10,646,947	0%	0	0	$0
Epidural abscess*	All	24	447	$3,609,870	0%	0	0	$0
Non-dependent abuse of drugs	All	50	243	$1,019,821	100%	50	243	$1,019,821
Osteomyelitis*	All	18	203	$1,370,052	0%	0	0	$0
Poisoning by CNS muscle tone depressants	All	7	21	$348,209	100%	7	21	$348,209
Poisoning by CNS stimulants	All	14	175	$2,341,150	100%	14	175	$2,341,150
Poisoning by opiates and related narcotics	All	73	237	$4,012,467	100%	73	237	$4,012,467
Poisoning by psychotropic agents	All	73	312	$4,471,773	100%	73	312	$4,471,773
Poisoning by sedatives and hypnotics	All	5	12	$198,680	100%	5	12	$198,680
Polyneuropathy due to drugs	All	2	6	$66,752	100%	2	6	$66,752
Septic arthritis*	All	56	418	$3,873,931	0%	0	0	$0
Suicide and self-inflicted injury	All	167	795	$8,180,748	100%	167	795	$8,180,748
Total	-	805	5,837	$49,225,639		**627**	**3459**	**$29,724,839**

* These diagnoses do not have an assigned attributable factor; however, spending data are included for reference as data suggest the number of cases of infection associated with opioid use (for example, endocarditis and pyogenic spinal infections) have been on the rise. For more information, refer to: *Hospitalizations Related to Opioid Abuse/Dependence and Associated Serious Infections Increased Sharpley, 2002-2012*, Health Affairs, Vol. 35, No. 5, May 2016. https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2015.1424.
Source: Alaska Hospital Facilities Data Reporting Program (HFDR). DAF attribution rates applied by McDowell Group.

Table 34. Emergency Department Visits, Length of Stay, and Charges, Primary Diagnosis, Chronic and Acute, HFDR Total and Attributable to Drugs, Alaska, 2018

Drug Related Attribution Group	Age	Total Inpatient Stays			Attributable Fraction	Attributable to Drugs		
		# of Visits	Length of Stay (days)	Total Charges ($)		# of Visits	Length of Stay (days)	Total Charges ($)
Drug dependence	All	659	704	$1,743,257	100%	659	704	$1,743,257
Drug dependence complicating pregnancy, childbirth, or puerperium	All	23	23	$73,920	100%	23	23	$73,920
Drug use, mental disorders, and psychoses	All	562	567	$1,589,725	100%	562	567	$1,589,725
Drug withdrawal syndrome in newborn	All	1	1	$1,688	100%	1	1	$1,688
Endocarditis*	All	7	7	$42,055	0%	0	0	$0
Epidural abscess*	All	33	33	$124,553	0%	0	0	$0
Non-dependent abuse of drugs	All	1,141	1,168	$3,872,882	100%	1,141	1,168	$3,872,882
Osteomyelitis*	All	36	36	$164,616	0%	0	0	$0
Poisoning by CNS muscle tone depressants	All	7	7	$31,661	100%	7	7	$31,661
Poisoning by CNS stimulants	All	43	43	$122,773	100%	43	43	$122,773
Poisoning by opiates and related narcotics	All	212	213	$845,042	100%	212	213	$845,042
Poisoning by psychotropic agents	All	152	152	$709,107	100%	152	152	$709,107
Poisoning by sedatives and hypnotics	All	24	25	$109,307	100%	24	25	$109,307
Polyneuropathy due to drugs	All	1	1	$1,054	100%	1	1	$1,054
Septic arthritis*	All	19	19	$77,930	0%	0	0	$0
Suicide and self-inflicted injury	All	128	167	$755,467	100%	128	167	$755,467
Total	-	3,048	3,166	$10,265,038		**2,953**	**3,071**	**$9,855,883**

* These diagnoses do not have an assigned attributable factor; however, spending data are included for reference as data suggest the number of cases of infection associated with opioid use (for example, endocarditis and pyogenic spinal infections) have been on the rise. For more information, refer to: *Hospitalizations Related to Opioid Abuse/Dependence and Associated Serious Infections Increased Sharpley, 2002-2012*, Health Affairs, Vol. 35, No. 5, May 2016. https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2015.1424.
Source: Alaska Hospital Facilities Data Reporting Program (HFDR). DAF attribution rates applied by McDowell Group.

Table 35. Outpatient (except Emergency Department) Visits, Length of Stay, and Charges, Primary Diagnosis, Chronic and Acute, HFDR Total and Attributable to Drugs, Alaska, 2018

Drug Related Attribution Group	Age	Total Inpatient Stays			Attributable Fraction	Attributable to Drugs		
		# of Visits	Length of Stay (days)	Total Charges ($)		# of Visits	Length of Stay (days)	Total Charges ($)
Drug dependence	All	5,869	21,077	$5,120,504	100%	5,869	21,077	$5,120,504
Drug dependence complicating pregnancy, childbirth, or puerperium	All	215	436	$230,406	100%	215	436	$230,406
Drug use, mental disorders, and psychoses	All	842	1,080	$865,283	100%	842	1,080	$865,283
Drug withdrawal syndrome in newborn	All	3	3	$1,304	100%	3	3	$1,304
Drugs affecting fetus or newborn via placenta or breast	All	7	7	$1,861		7	7	$1,861
Endocarditis*	All	73	141	$75,862	0%	0	0	$0
Epidural abscess*	All	48	149	$245,988	0%	0	0	$0
Fetal damage due to drugs	All	3	3	$888	100%	3	3	$888
Non-dependent abuse of drugs	All	1,099	1,375	$1,613,213	100%	1,099	1,375	$1,613,213
Osteomyelitis*	All	345	548	$802,985	0%	0	0	$0
Poisoning by CNS muscle tone depressants	All	3	3	$23,138	100%	3	3	$23,138
Poisoning by CNS stimulants	All	10	13	$12,458	100%	10	13	$12,458
Poisoning by opiates and related narcotics	All	18	20	$213,912	100%	18	20	$213,912
Poisoning by psychotropic agents	All	42	56	$404,136	100%	42	56	$404,136
Poisoning by sedatives and hypnotics	All	8	8	$22,551	100%	8	8	$22,551
Polyneuropathy due to drugs	All	35	94	$49,671	100%	35	94	$49,671
Septic arthritis*	All	170	326	$208,780	0%	0	0	$0
Suicide and self-inflicted injury	All	68	135	$820,752	100%	68	135	$820,752
Total	-	8,858	25,474	$10,713,692		**8,222**	**24,310**	**$9,380,077**

* These diagnoses do not have an assigned attributable factor; however, spending data are included for reference as data suggest the number of cases of infection associated with opioid use (for example, endocarditis and pyogenic spinal infections) have been on the rise. For more information, refer to: *Hospitalizations Related to Opioid Abuse/Dependence and Associated Serious Infections Increased Sharpley, 2002-2012*, Health Affairs, Vol. 35, No. 5, May 2016. https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2015.1424.
Source: Alaska Hospital Facilities Data Reporting Program (HFDR). DAF attribution rates applied by McDowell Group.

Primary and Secondary Diagnosis

Patients often have both a primary and secondary diagnosis related to their hospital inpatient, emergency department, or outpatient treatment. For example, a patient may be visiting the emergency department for treatment of a broken hip that was the result of drug use disorder. The table below shows duplicated counts of patients receiving care for chronic or acute primary and secondary diagnoses attributed to drug use disorders.

Table 36. Duplicated Alaska Inpatient Hospital Admissions, Emergency Department Visits, and Outpatient Visits, Length of Stay, and Total Charges that are Drug Attributable, Primary and Secondary Diagnoses, 2018

Location	Admissions/Visits	Length of Stay (days)	Charges
Inpatient	16,574	105,469	$1,142,526,570
Emergency Department	52,149	53,492	$205,080,251
Outpatient	40,563	68,826	$259,261,003
TOTAL	**109,286**	**227,787**	**$1,606,867,824**

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). DAF attribution rates applied by McDowell Group.

Costs of Treating Drug Misuse

Some individuals who are drug dependent need detoxification, treatment, and/or support services. In SFY2019, agencies receiving DBH treatment and recovery grants logged 98,560 bed days, 40,857 for drug-only and 57,703 for treatment of alcohol combined with drugs (does not include drug-only treatment) delivered to approximately 1,286 patients. Combined, DBH payments to grantees for this care totaled approximately $5.8 million in SFY2019.

Table 37. Number of Bed Use/Day and Count by Gender for Drug and Alcohol/Drug Treatment, SFY2019

Substance Treated	Female Count	Male Count	# of Bed Use/Day	Total DBH Cost[1]
Drug Only	357	370	40,857	$1,906,461
Alcohol and Drug	525	916	57,703	$3,862,838
Total	**882**	**1,286**	**98,560**	**$5,769,299**

[1] Based on a five-year average.
Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System.

HIV and AIDS Costs

While HIV and AIDS are most often thought of as sexually transmitted diseases, a portion of cases are caused by 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 2018, there were 699 people living with HIV in Alaska; 54% had a diagnosis of AIDS. Between 1982 and 2018, 19% of HIV or AIDS contracted the disease from injection-drug use (IDU). Assuming that percentage holds true for the current population, there are 134 Alaskans who contracted HIV/AIDS from IDU. With the average annual cost of antiretroviral treatment for an individual with HIV/AIDS at approximately $15,560 (2018 dollars), annual treatment costs in Alaska totaled $2.1 million in 2018.

Table 38. Alaska Cases of HIV/AIDS and Estimated Medical Costs, 2018

Count and Cost	2018
Count	
Number of people with HIV and HIV with AIDS in Alaska	699
Alaska IDU attribution rate[1]	19.2%
Estimated number of Alaska cases attributed to IDU	134
Cost	
Annual cost of antiretroviral treatment (2018 dollars)	$15,560
Total Estimated Medical Cost of HIV/AIDS in Alaska	**$2,085,040**

[1] DHSS Division of Public Health, *HIV Surveillance Report – Alaska, 1982-2018.*
[2] U.S. Department of Justice, National Drug Intelligence Center (NDIC), *The Economic Impact of Illicit Drug Use on American Society 2011"* (2011), adjusted to 2018 dollars.

Hepatitis B and C Drug Treatment Costs

The estimated costs below pertain only to the drug treatment costs associated with hepatitis and do not include costs associated with hepatitis impacts, such as liver transplants and other inpatient or outpatient expenses. The latter costs are addressed in the section on general medical costs at the beginning of this chapter.

In 2018, Alaska had one reported new case of Hepatitis A, 7 cases of Hepatitis B (acute), and 1,238 new cases of Hepatitis C virus (HCV).[9]

Epidemiologists in the DHSS Division of Public Health have noted IDU is a risk factor for approximately 55% of Hepatitis B cases[10] Per the World Health Organization, more than 90% of healthy adults will recover naturally from Hepatitis B and less than 5% of those infected will develop a chronic illness.[11] Therefore Hepatitis B costs attributable to IDU are negligible in Alaska.

DHSS epidemiologists estimate that between 38-68% of Hepatitis C cases in Alaska are attributed to IDU.[12] Based on the mid-range of that estimate (53%), approximately 656 new cases of HCV in 2018 may be attributed to IDU. Direct-acting antiviral (DAA) therapy has greatly improved HCV cure rates, but at a cost. Estimated wholesale acquisition costs for common DAA treatment regimes can range from $25,000 to $100,000 for the course.[13] Based on a mid-point of $62,500 for treatment cost, DAA therapy for the 656 new cases of HCV attributed to IDU in 2018 cost $41.0 million.[14]

[9] http://dhss.alaska.gov/dph/Epi/id/Pages/hepatitis/cases.aspx (accessed November 2019).
[10] http://epibulletins.dhss.alaska.gov/Document/Display?DocumentId=1919 (accessed November 2019).
[11] https://www.who.int/en/news-room/fact-sheets/detail/hepatitis-b (accessed November 2019).
[12] http://epibulletins.dhss.alaska.gov/Document/Display?DocumentId=2028 (accessed November 2019).
[13] Ibid.
[14] During SFY2018, Alaska Medicaid's Drug Utilization Review Committee approved a shorter-course hepatitis C treatment for a cost savings of $3.6 million while treating 60% more individuals than in the prior period (http://epibulletins.dhss.alaska.gov/Document/Display?DocumentId=2028).

Chapter 7: Public Assistance and Social Services

- **In FFY2019, the U.S. government spent an estimated $15 million in Alaska on social welfare supports attributable to drug misuse. The largest expenditure was for Social Security, followed by the Supplemental Nutrition Assistance Program (SNAP).**
- **In SFY2019, the State of Alaska spent an additional $3 million on social welfare supports attributable to drug misuse. The largest expenditures were for Adult Public Assistance and Temporary Assistance for Needy Families (TANF).**

Social Welfare Funding

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

Social welfare spending includes two broad categories: benefits paid to beneficiaries and administrative expenses. Benefit payments are transfer payments to individuals while administrative expenses are spent on overhead by the government entities (or their grantees) that operate the programs. Since both types of expenditures are necessary to deliver services, cost estimates in this section include administrative costs and benefit payments.

Federal

The federal government funds many social welfare benefits in Alaska. For programs such as Supplemental Nutrition Assistance Program (SNAP), the federal government works with the state, which provides a portion of total funding and administers benefits. State agencies determine eligibility of individuals and households, and issue monthly benefits. Other federal payments, such as Old Age, Survivors and Disability Insurance (OASDI)—more commonly known as Social Security—and Supplemental Security Insurance (SSI), are paid directly by the federal government to beneficiaries.

In FFY2019, $14.9 million, or 1.1% of federal social welfare spending, was attributable to drug misuse, based on national attribution rates.

Table 39. Federal Social Welfare Spending in Alaska Attributable to Drug Misuse, FFY2019

Social Welfare Program	Federal Funding Total	% Attributable to Drug Misuse[1]	$ Attributable to Drug Misuse
OASDI (Social Security)	$1,422,000,000[2]	0.6%	$8,532,000
SNAP Benefits	$187,357,117[3]	1.4%	$2,623,000
SSI	$78,840,000[2]	0.6%	$473,040
Head Start	$45,064,700[4]	1.1%	$495,712
TANF	$36,303,100[5]	1.4%	$508,243
Special Education	$42,692,602[6]	1.1%	$469,619
Child Care	$33,656,500[7]	1.1%	$370,222
Public Assistance Field Services	$26,602,100[7]	1.1%	$292,623
Women, Infants & Children (WIC)	$23,314,900[7]	1.1%	$256,464
Alaska Temporary Assistance Program	$20,621,800[7]	1.4%	$288,705
Vocational Rehabilitation	$18,863,700[7]	1.1%	$207,501
SNAP Administrative Costs	$13,301,800[3]	1.4%	$186,225
Energy Assistance Program	$10,122,900[7]	1.1%	$111,352
Public Assistance Administration	$4,920,000[7]	1.1%	$54,120
Alaska Public Assistance	$1,730,00[7]	1.1%	$1,903
Total	**$1,974,968,462**	**1.1%[8]**	**$14,870,728**

Sources and notes:
[1]1998 NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992*
[2]Social Security Administration (OASDI data from CY 2017, SSI data from CY 2018)
[3]SNAP Analysis Branch, Office of Policy Support, USDA Food & Nutrition Services (FFY 2018 data)
[4]Division of Public Assistance, Alaska Dept. of Health & Social Services
[5]Office of Family Assistance, U.S. Dept. of Health & Human Services
[6]U.S. Department of Education, funds for state formula-allocated and selected student aid programs
[7]Alaska Office of Management & Budget
[8]Aggregate average attribution rate

State

The State of Alaska also funds social welfare programs. Some programs are partnerships with the federal government, and some are fully state-supported. Fund sources include Undesignated General Funds (UGF), the most flexible fund source; Designated General Funds (DGF), which have a legislatively designated purpose but technically are part of the General Fund; and other state funds, which include funds limited in their allowable uses and interagency receipts. This analysis considers all state operating funds used to support social welfare programs.

Nationally, 1.4% of social welfare spending is related to drug misuse. Based on that rate, state government welfare spending in Alaska totaled $3.1 million attributable to drug misuse.

Table 40. State Social Welfare Spending in Alaska Attributable to Drug Misuse, SFY2019

Social Welfare Program	State Funding Total	Attributable to Drug Misuse	$ Attributable to Drug Misuse
Adult Public Assistance	$60,356,900	1.4%	$844,997
TANF	$36,558,500[1]	1.4%	$511,819
Public Assistance Field Services	$26,105,300	1.4%	$365,474
Senior Benefits Program	$20,786,100	1.4%	$291,005
Permanent Fund Dividend Hold Harmless	$17,724,700	1.4%	$248,146
SNAP administrative costs	$13,511,700	1.4%	$189,164
Tribal Assistance Programs	$17,172,000	1.4%	$240,408
Childcare	$8,253,300	1.4%	$115,546
Alaska Temporary Assistance Program	$5,663,900	1.4%	$79,295
Head Start	$6,800,000	1.1%	$74,800
Vocational Rehabilitation	$5,644,800	1.1%	$62,093
Women, Infants & Children (WIC)	$3,819,500	1.4%	$53,473
Public Assistance Administration	$3,209,000	1.4%	$44,926
General Relief Assistance	$1,205,400	1.4%	$16,876
Work Services	$214,100	1.4%	$2,997
Total	**$227,025,200**	**1.4%[2]**	**$3,141,018**

[1]Office of Family Assistance, U.S. Dept. of Health & Human Services, FY 2018 data
[2]Aggregate attribution rate
Sources: 1998 NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992*, State of Alaska Office of Management & Budget, and Division of Public Assistance, Alaska Dept. of Health & Social Services

Chapter 8: Opioid Use Disorder

- Hospital-related medical costs to treat conditions and diseases with a primary diagnosis only associated with Opioid Use Disorder (OUD) totaled $12 million in 2018, including $7 million in inpatient charges, $2 million in emergency department charges, and $3 million in outpatient charges delivered in a hospital setting.
- Hospital-related medical costs to treat conditions and diseases with a primary and/or secondary diagnosis associated with OUD totaled $196.4 million in 2018, including $177.4 million in inpatient charges, $8.1 million in emergency department charges, and $10.8 million in outpatient charges for services delivered in a hospital setting. There is likely duplication in these numbers, which should be used only to demonstrate the impact of including secondary diagnoses into the costs associated with OUD.
- Based on the date of service and for 2,667 beneficiaries with more than $1,000 in spending on services associated with Opioid-related diagnoses in SFY2018, DHSS's Medicaid reimbursement claims totaled $63.8 million, including $17.9 million (or 28%) for specific services related to opioid-related conditions. The average spending per Medicaid beneficiary with an opioid-related diagnosis was $23,918 for all services, including an average of $6,695 for opioid-related services.
- The chronic condition with the highest Medicaid claims for beneficiaries with an opioid-related diagnosis was mental health ($2.7 million or 66% of all chronic condition claims).
- In SFY2018, Alaska's opioid treatment Medicaid drug reimbursement claims paid totaled $4.8 million.
- In SFY2019, agencies receiving DBH treatment and recovery grants logged 42,389 bed days, 1,845 for OUD-only and 40,544 for treatment of OUD combined with other substance use disorders (drugs and/or alcohol) (does not include OUD-only treatment) delivered to 814 patients. Combined, DBH payments to grantees for this care totaled approximately $2.6 million in SFY2019.
- In 2017, 73 deaths in Alaska were attributed to OUD overdoses, with an estimated future earnings cost of $104.2 million.
- In 2018, the Alaska Department of Public Safety estimated there were 746 opioid-related incidents totaling $5.1 million in departmental costs.
- In SFY2018, inmates with OUD accounted for approximately $745,000 of the Department of Correction's treatment costs.

A wide variety of health care costs are associated with OUD, including hospitalization from injuries and illness, residential and outpatient treatment costs, and pharmaceutical costs.

Medical Costs

This section describes the costs to treat diseases and conditions that arise from Opioid Use Disorder (OUD). Medical costs are presented for three hospital setting types: inpatient, ED, and outpatient. These costs are included in the health care cost analysis presented in Chapter 5.

Primary Diagnosis

Inpatient

Some of the health problems caused by OUD require admission to a hospital. In 2018, unduplicated inpatient charges in Alaska attributable to a primary diagnosis of OUD totaled $6.8 million. The number of admissions attributable to OUD totaled 135. The total length of hospital stays resulting from those admissions was 809 days.

Table 41. Inpatient Hospital Admissions, Length of Stay, and Charges, Primary Diagnosis, 100% Attributable to OUD, All Ages, Alaska, 2018

OUD Related Attribution Group (100%)	# of Admissions	Length of Stay (days)	Total Charges
Drug dependence	38	349	$1,374,071
Drug use, mental disorders, and psychoses	5	136	$389,220
Non-dependent abuse of drugs	1	3	$57,187
Poisoning by opiates and related narcotics	73	237	$4,012,467
Suicide and self-inflicted injury	18	84	$921,717
Total	**135**	**809**	**$6,754,662**

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

Emergency Department (ED) Costs

Some patients with health problems caused by OUD receive treatment in the ED. In 2018, unduplicated emergency department charges in Alaska attributable to OUD primary diagnosis totaled $2.4 million. The number of visits attributable to OUD totaled 736. The total length of hospital stays resulting from those visits was 766 days.

Table 42. Emergency Department Visits, Length of Stay, and Charges, Primary Diagnosis, 100% Attributable to OUD, All Ages, Alaska, 2018

OUD Related Attribution Group (100%)	# of Visits	Length of Stay (days)	Total Charges
Drug dependence	378	390	$1,083,516
Drug use, mental disorders, and psychoses	35	35	$120,352
Non-dependent abuse of drugs	89	89	$247,466
Poisoning by opiates and related narcotics	212	213	$845,042
Suicide and self-inflicted injury	22	39	$102,024
Total	**736**	**766**	**$2,398,400**

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

Outpatient In-Hospital Costs (Excluding ED Costs)

Outpatient services are visits to a physician office, outpatient surgery, and other outpatient settings in the hospital (excluding the ED). In 2018, unduplicated outpatient charges in Alaska attributable to a primary diagnosis of OUD totaled $3.4 million. The number of visits attributable to drug misuse totaled 4,055. The total length of hospital stays resulting from those visits was 12,291 days.

Table 43. Outpatient Hospital Visits, Length of Stay, and Charges, Primary Diagnosis, 100% Attributable to OUD, All Ages, Alaska, 2018

OUD Related Attribution Group (100%)	# of Admissions	Length of Stay (days)	Total Charges
Drug dependence	3,454	11,588	$2,722,532
Drug use, mental disorders, and psychoses	160	162	$107,617
Non-dependent abuse of drugs	421	517	$295,820
Poisoning by opiates and related narcotics	18	20	$213,912
Suicide and self-inflicted injury	2	3	$24,669
Total	**4,055**	**12,290**	**$3,364,551**

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

Primary and/or Secondary Diagnosis

These charges may be duplicated and should be used only to demonstrate the impact of including secondary diagnoses into the costs associated with OUD.

Inpatient

In 2018, unduplicated inpatient charges in Alaska attributable to a primary or secondary diagnoses of OUD totaled $177.4 million. The number of admissions attributable to OUD totaled 2,013. The total length of hospital stays resulting from those admissions was 16,229 days.

Table 44. Inpatient Hospital Admissions, Length of Stay, and Charges, Primary or Secondary Diagnoses, 100% Attributable to OUD, All Ages, Alaska, 2018

OUD Related Attribution Group (100%)	# of Admissions	Length of Stay (days)	Total Charges
Drug dependence	1,045	9,439	$97,069,769
Drug use, mental disorders, and psychoses	181	1,437	$12,054,445
Non-dependent abuse of drugs	400	2,402	$28,478,405
Poisoning by opiates and related narcotics	463	3,727	$50,018,145
Suicide and self-inflicted injury	37	190	$1,856,214
Total	**2,013**	**16,229**	**$177,427,782**

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

Emergency Department (ED) Costs

In 2018, unduplicated emergency department charges in Alaska attributable to OUD primary or secondary diagnosis totaled $8.1 million. The number of visits attributable to OUD totaled 2,044. The total length of hospital stays resulting from those visits was 2,111 days.

Table 45. Emergency Department Visits, Length of Stay, and Charges, Primary or Secondary Diagnoses, 100% Attributable to OUD, All Ages, Alaska, 2018

OUD Related Attribution Group (100%)	# of Visits	Length of Stay (days)	Total Charges
Drug dependence	848	880	$3,041,506
Drug use, mental disorders, and psychoses	253	254	$1,053,333
Non-dependent abuse of drugs	623	635	$2,676,880
Poisoning by opiates and related narcotics	364	365	$1,504,448
Suicide and self-inflicted injury	34	55	$168,841
Total	**2,044**	**2,111**	**$8,124,260**

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

OUTPATIENT IN-HOSPITAL COSTS (EXCLUDING ED COSTS)

In 2018, unduplicated outpatient charges in Alaska attributable to a primary or secondary diagnosis of OUD totaled $10.8 million. The number of visits attributable to OUD totaled 5,927. The total length of hospital stays resulting from those visits was 17,377 days.

Table 46. Outpatient Hospital Visits, Length of Stay, and Charges, Primary or Secondary Diagnoses, 100% Attributable to OUD, All Ages, Alaska, 2018

OUD Related Attribution Group (100%)	# of Visits	Length of Stay (days)	Total Charges
Drug dependence	4,721	15,740	$7,230,684
Drug use, mental disorders, and psychoses	361	388	$753,301
Non-dependent abuse of drugs	771	1,048	$1,750,827
Poisoning by opiates and related narcotics	98	225	$1,164,723
Suicide and self-inflicted injury	5	8	$53,873
Total	**5,927**	**17,377**	**$10,799,393**

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

Medicaid

Based on the date of service and for 2,667 beneficiaries with more than $1,000 in spending on services associated with opioid-related diagnoses in SFY2018, DHSS's Medicaid reimbursement claims totaled $63.8 million, including $17.9 million (or 28%) for specific services related to opioid-related conditions. The average spending per Medicaid beneficiary with an opioid-related diagnosis was $23,918 for all services, including an average of $6,695 for opioid-related services. For comparison, average total spending per all Medicaid beneficiaries was $10,874.

Many Medicaid beneficiaries with opioid-related diagnoses also have chronic conditions, including cancer, diabetes, heart, injuries, lung, mental, obesity, stroke, tobacco, alcohol (acute and chronic), other drug, and Fetal Alcohol Spectrum Disorders totaling $4.1 million (or 6% for all services) in claims. The chronic condition with the highest claims was mental health ($2.7 million or 66% of all chronic condition claims).[15]

[15] DHSS, MMIS data.

For opioid-related services, females represented 60% of Medicaid claims, almost all (96%) are adults between the ages of 21 and 64, and 57% live in the Anchorage/Mat-Su region.

Table 47. Medicaid Reimbursement Claims, Beneficiaries with Opioid-related Diagnosis Receiving $1,000 or More in Services, by Demographic Characteristics, Alaska, Date of Service SFY2018,

Demographics	Number of Beneficiaries[1]	Total Medicaid Claims for Opioid-related Services	Percent of Total Medicaid Claims for Opioid-related Services	Total Medicaid Claims for All Services[2]	Percent of Total Medicaid Claims for All Services
Gender					
Female	1,485	$10,771,738	60%	$39,391,277	62%
Male	1,182	$7,084,752	40%	$24,397,360	38%
Age Group					
Under age 18	12	$155,063	1%	$709,417	1%
Age 19-20	31	$413,050	2%	$848,746	1%
Age 21-64	2,608	$17,211,770	96%	$61,862,376	97%
Age 65+	16	$76,607	<1%	$368,098	1%
Alaska Region					
Anchorage/Mat-Su	1,662	$10,101,544	57%	$37,142,879	58%
Northern	255	$2,093,261	12%	$6,881,838	11%
Southcentral	368	$2,574,403	14%	$8,963,550	14%
Southeast	336	$2,505,071	14%	$8,353,222	13%
Western	46	$582,211	3%	$2,447,147	4%
Total	2,667	$17,856,490		$63,788,637	
Average Spend Per Medicaid Beneficiary with OUD-related Diagnosis		$6,695		$23,918	

[1] Beneficiaries are Medicaid enrollees who utilized one or more Medicaid services during the fiscal year. The unduplicated count of enrollment for FY2018 was 238,398. Of these, only 192,039 utilized Medicaid services.
[2] Claims not included are those without a diagnosis code including pharmacy, transportation, hospice, personal care, (most) dental, and others.
Source: DHSS, MMIS

Opioid Drug Treatment

Medicaid

Treatment of OUD may use drugs such as buprenorphine, naltrexone, or methodone for more effective or enhanced adjunct treatment. In SFY2018, Alaska's opioid treatment Medicaid drug reimbursement claims paid totaled $4.8 million, of which 74% ($3.5 million) was incurred by the Federal government.

Table 48. Medicaid Opioid Treatment Drug Reimbursement, 2018, 100% Attributable to OUD, All Ages, Alaska, 2018

Drugs	Total Charges
Buprenorphine	$202,090
Buprenorphine HCL	$204,356
Buprenorphine-Naloxone	$312,105
Suboxone	$4,055,639
Naloxone HCL	$509
Total	**$4,774,699**

Source: http://www.akleg.gov/basis/get_documents.asp?docid=10674

Costs of Treating OUD

Division of Behavioral Health Treatment and Recovery Grants

Some individuals who have OUD need detoxification, treatment, and/or support services. In SFY2019, agencies receiving DBH treatment and recovery grants logged 42,389 bed days, 1,845 for OUD-only and 40,544 for treatment of OUD combined with other substance use disorders (drugs and/or alcohol though not including OUD-only treatment) delivered to 814 patients. Combined, DBH payments to grantees for this care totaled approximately $2.6 million in SFY2019.

Table 49. Number of Bed Use/Day and Count by Gender for Drug and Alcohol/Drug Treatment, SFY2019

Substance Treated	Female Count	Male Count	# of Bed Use	Total DBH Cost[1]
OUD Only	27	21	1,845	$216,594
OUD and Other Substance Use Disorders	376	390	40,544	$2,333,476
Total	**403**	**411**	**42,389**	$2,550,070

[1] Based on a five-year average of calendar year data.
Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System.

Alaska Department of Corrections

The Alaska Department of Corrections is the largest provider of substance use disorder treatment and detox/withdrawal services in Alaska, spending $2.5 million in SFY2018. According to the Alaska Department of Corrections, 80% of offenders in custody struggle with substance misuse, of which 30% of those assessed report abusing opioids. Inmates with OUD represent approximately $745,000 of the Department's treatment costs.[16]

Federal Grant Spending

In SFY2019, the State of Alaska received $8.7 million in federal grant funding to provide a variety of opioid-specific services.

[16] State of Alaska, *Addressing Alaska's Opioid Epidemic Comprehensive Presentation.* No date.

Table 50. Federal Grants for Opioid Response Received by the State of Alaska in SFY2019

Grant	Award Period	Amount
State Targeted Response	FFY2018-2019	$3 million
Medication Assisted Treatment – Prescription Drug and Opioid Addiction	FFY2019-2021	$1 million
Prescription Drug Overdose – Project HOPE	FFY2019-2020	$0.7 million
State Opioid Response	FFY2019-2020	$4 million

Source: *State of Alaska Addressing Alaska's Opioid Epidemic Comprehensive Presentation*

PROJECT HOPE

Funded under Project HOPE (or Health Opportunities for People Everywhere), Narcan kits were given to local agencies free of charge.[17] Each kit costs $75. Between October 2018 and September 2019, 9,122 kits were distributed in Alaska,[18] totaling $684,150.

Lost Future Earnings Due to Mortality

Premature death due to OUD has an economic cost. Various causes of death may be attributable to OUD either directly, such as drug overdose or indirectly, such as motor vehicle collisions, or homicide. Premature death costs to the economy result from lost production of goods and services, including loss of wages that would have been circulated back into the economy. For individuals who would not have engaged in paid work, there is nevertheless potential to create societal value by performing household services such as raising children, caring for elders, and household maintenance.

A total of 73 deaths in Alaska in 2017 were attributed to opioid overdoses.[19] The table below shows these deaths by age and gender. The table includes estimates of the inflation-adjusted future earnings and estimated economic loss for each age group and gender from time of death. Opioid overdose deaths had future earnings costs totaling $104.2 million. Men make up 71% of the deaths (52 deaths in 2017) but represent 79% of the total lost earnings ($82.3 million) because of their higher average wages. The remaining $21.9 million is associated with female deaths (21 deaths per year).

[17] https://www.ktuu.com/content/news/Fire-department-offers-free-opioid-overdose-rescue-kits-475773963.html
[18] Alaska Opioid Data Dashboard, http://dhss.alaska.gov/dph/Director/Pages/opioids/dashboard.aspx (accessed November 2019).
[19] Alaska Opioid Data Dashboard, http://dhss.alaska.gov/dph/Director/Pages/opioids/dashboard.aspx (accessed November 2019).

Table 51. Estimated Future Earnings Loss in Alaska, OUD Overdose Mortality, by Age and Gender, 2017, $2018

Gender/Age	Annual Avg. Attributable Deaths	Net Present Value of Future Earnings	Estimated Loss Due to Drugs
Males	**52**	**-**	**$82,341,259**
0-4 years	0	0	$0
5-14 years	0	$1,866,784	$0
15-24 years	3	$2,208,171	$6,624,513
25-34 years	16	$2,187,080	$34,993,280
35-44 years	16	$1,771,554	$28,344,864
45-54 years	7	$1,157,454	$8,102,178
55-64 years	8	$501,764	$4,014,112
65-74 years	2	$131,156	$262,312
75-84 years	0	$25,215	$0
85+ years	0	$4,237	$0
Females	**21**	**-**	**$21,871,259**
0-4 years	0	$1,188,413	$0
5-14 years	0	$1,380,145	$0
15-24 years	1	$1,597,149	$1,597,149
25-34 years	7	$1,488,042	$10,416,294
35-44 years	6	$1,142,169	$6,853,014
45-54 years	3	$702,166	$2,106,498
55-64 years	3	$278,053	$834,159
65-74 years	1	$64,145	$64,145
75-84 years	0	$11,673	$0
85+ years	0	$1,163	$0
Total	**73**	**-**	**$104,212,518**

Note: Due to rounding columns may not add to totals.
Source: Opioid overdose death counts by gender provided by DHSS' Division of Public Health, Alaska Opioid Data Dashboard. Proportion of deaths by gender and age were applied to the total number of deaths. 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 using the Urban Alaska Consumer Price Index.

Public Safety

In 2018, the Alaska Department of Public Safety identified 746 opioid-related incidents (including felony drug and other arrests). Using a marginal cost per arrest (police) of $1,123, public safety costs totaled $5.1 million.

Chapter 9: Taxes Generated from Marijuana Use

- **In SFY2018, $10.8 million in Marijuana Tax was paid to the Alaska Department of Revenue, of which $5.4 million went to the Recidivism Reduction Fund and the remainder to the General Fund.**

Overview of Alaska's Marijuana Tax

In 2014, Alaskans supported a ballot measure to tax and regulate the production, sale, and use of marijuana. The Department of Revenue collects the tax from licensed marijuana cultivation facilities. The tax is imposed where marijuana is sold or transferred from a marijuana cultivation facility to a retail store or marijuana product manufacturing facility.

The tax is $50/ounce of marijuana bud and flower. The remainder of the plant is taxed at $15/ounce. As of January 1, 2019, immature or abnormal buds are taxed at $25/ounce.

In 2016, the Alaska Legislature created a subfund within the General Fund, the Recidivism Reduction Fund, and directed the Alaska Department of Administration to deposit 50% of marijuana taxes collected in the fund. The fund may be appropriated to the departments of Corrections, Public Safety, and Health and Social Services for recidivism programs.

Effective in 2018, the Alaska Legislature passed an education curriculum bill that included a provision that 25% of the marijuana tax be deposited into the Marijuana Education and Treatment Fund.

In SFY2017, $1.7 million in marijuana taxes were collected, of which $869,683 was deposited in the Recidivism Reduction Fund. In SFY2018, taxes grew to $10.8 million, of which $5.4 million went to the Recidivism Reduction Fund.

Chapter 10: Drug Misuse Impacts on the State General Fund Budget

- In SFY2018, Medicaid spending for beneficiaries with opioid-related diagnosis totaled $63.8 million, including $17.9 million (or 28%) for specific services related to opioid-related conditions. Approximately 28.7% of Medicaid spending in Alaska is drawn from the General Fund. For beneficiaries receiving opioid-related services, the state's General Fund portion was $18.3 million.
- Medicaid beneficiaries with other drug-related diagnoses accounted for a total of $71.5 million in spending, including $18.5 million (or 26%) for specific services related to drug addiction. The average spending per Medicaid beneficiary with a drug-related condition (not including opioids) was $36,098 for all Medicaid reimbursed claims, including an average of $9,327 for other drug-related services (not opioid). For those with other drug-related diagnoses, the state's General Fund portion for Medicaid was $20.5 million.
- In SFY2019, the Division of Behavioral Health provided approximately $4.3 million in state-funded grants for prevention of drug misuse.
- In SFY2019, the state spent $227 million on social welfare programs, of which approximately $3.1 million (1.4%) was to address drug misuse.
- An estimated 5.9% of total justice system spending (state, federal, and local) in Alaska, $123 million, is attributed to drug misuse arrests and offenses in Alaska. If the same rate is applied to total state Undesignated General Fund spending on the justice system ($620 million), about $37 million of that spending is attributable to drug misuse. This figure is likely conservative, as Alaska likely covers a greater percentage of its justice system costs with state funds than the average of other states.

Health Services

Medicaid

Opioid-Related Claims

Chapter 8: Opioid Use Disorder reports that Medicaid spending for beneficiaries with opioid-related diagnosis totaled $63.8 million, including $17.9 million (or 28%) for specific services related to opioid-related conditions in SFY2018. The average spending per Medicaid beneficiary with an opioid-related diagnosis was $23,918 for all services, including an average of $6,695 for opioid-related services. *(See Chapter 8 for more details.)*

OTHER DRUG-RELATED CLAIMS

For Medicaid beneficiaries with other drug-related diagnoses, a total of $71.5 million, including $18.5 million (or 26%) for specific services related to drug addiction, was spent. The average spending per Medicaid beneficiary with a drug-related condition (not including opioids) was $36,098 for all Medicaid reimbursed claims, including an average of $9,327 for other drug-related services (not opioid).

Many Medicaid beneficiaries with other drug conditions also have chronic conditions, including cancer, diabetes, heart, injuries, lung conditions, mental health, obesity, stroke, tobacco usage, alcohol use disorder (acute and chronic), other drug, and Fetal Alcohol Spectrum Disorders totaling $12.6 million (or 17% for all services) in claims. The chronic condition with the highest claims was mental health ($11.5 million or 92% of all chronic condition claims).[20]

For other drug-related services (not opioid), females represented 57% of Medicaid claims, 24% are children under age 18, and 48% live in the Anchorage/Mat-Su region.

Approximately 28.7% of Medicaid spending in Alaska is paid by the General Fund. For beneficiaries receiving opioid-related services, the state's General Fund portion was $18.3 million. For those with other drug-related diagnoses, the state's General Fund portion was $20.5 million.

[20] DHSS, MMIS data.

Table 52. Medicaid Reimbursement Claims, Beneficiaries with Other Drug-related Diagnosis Receiving $1,000 or More in Services, by Demographic Characteristics, Alaska, Date of Service SFY2018

Demographics	Number of Beneficiaries[1]	Total Medicaid Claims for Other Drug-related Services	Percent of Total Medicaid Claims for Other Drug-related Services	Total Medicaid Claims for All Services[2]	Percent of Total Medicaid Claims for All Services
Gender					
Female	1,090	$10,595,630	57%	$42,908,809	60%
Male	891	$7,880,334	43%	$28,601,437	40%
Age Group					
Under age 18	272	$4,411,934	24%	$15,070,853	21%
Age 19-20	116	$1,102,837	6%	$3,887,324	5%
Age 21-64	1,585	$12,933,422	70%	$52,453,904	73%
Age 65+	8	$27,772	<1%	$98,166	<1%
Alaska Region					
Anchorage/Mat-Su	1,071	$8,910,035	48%	$37,169,657	52%
Northern	262	$3,948,245	21%	$10,678,775	15%
Southcentral	304	$2,531,953	14%	$10,263,827	14%
Southeast	234	$1,967,740	11%	$8,550,388	12%
Western	110	$1,117,990	6%	$4,847,600	7%
Total	1,981	$18,475,964		$71,510,246	
Estimated State-General Fund Portion (28.7%)		$5,302,612		$20,523,441	
Average Spend Per Medicaid Beneficiary with Other Drug-related Diagnosis		$9,327		$36,098	

[1] Beneficiaries are Medicaid enrollees who utilized one or more Medicaid services during the fiscal year. The unduplicated count of enrollment for FY2018 was 238,398. Of these, only 192,039 utilized Medicaid services.
[2] Claims not included are those without a diagnosis code including pharmacy, transportation, hospice, personal care, (most) dental, and others. Does not include opioid-related claims.
Source: DHSS, MMIS

Prevention Grants

The State of Alaska Division of Behavioral Health (DBH) allocates grant funding to programs aimed at preventing mental health problems and drug misuse. Some of these programs operate at the systems level, guiding governments and communities to implement and organize services. Other programs work directly with individuals experiencing poor mental health or addiction or co-occurring disorders, and the families of those affected. This section of the report presents estimates of the amount of both kinds of state-funded DBH grants used to target drug misuse.

In SFY2019, based on national attributable rates, DBH allocated an estimated total of $4.3 million toward prevention of drug misuse.

Table 53. State of Alaska Grant Funding for the Prevention of Drug Misuse, SFY2019 (thousands$)

Grant Recipient	Total State Funding	Attributable to Drug Misuse	$ Attributable to Drug Misuse
Sobering Center, Withdrawal Management & Residential SUD Treatment Services	$3,200.0	25%	$800.0
Comprehensive Behavioral Health Prevention & Early Intervention Services	$2,319.1	25%	$579.8
Bethel Community Service Patrol and Service Center	$1,088.9	50%	$544.5
Rural Human Services System	$1,838.8	25%	$459.7
Therapeutic Court	$695.2	50%	$347.6
Human Services Community Matching Grants	$1,387.0	25%	$346.8
Permanent Supportive Housing	$1,160.1	25%	$290.0
Substance Use Disorder Services for OCS Engaged Families	$328.1	25%	$82.0
Community Initiative Matching Grants	$861.7	25%	$215.4
Recidivism Reduction	$850.0	25%	$212.5
Supported Employment	$462.7	25%	$115.7
Adult Rural Peer Support	$209.3	50%	$104.7
Trauma Informed Behavioral Health Services	$275.6	25%	$68.9
Trauma Informed Training for Behavioral Health Providers	$186.3	25%	$46.6
Family Wellness Warriors Initiative	$150.0	25%	$37.5
Behavioral Health Provider Association	$52.1	25%	$13.0
Total	**$19,247.8**		**$4,264.6**

Source: DHSS, SFY2019 Operating Grants; includes Undesignated General Funds, Designated General Funds, and other state funds.

Social Welfare

DHSS administers many social welfare programs at an annual cost to the state of approximately $227 million. Among these programs are Adult Public Assistance, Temporary Assistance for Needy Families (TANF), and Senior Benefits. In SFY2019, $3.1 million, or 1.4% of total state social welfare spending, was attributable to drug misuse (see chapter on Public *Assistance and Social Assistance*).

Criminal Justice & Corrections Costs

In 2017, there were an estimated 41,000 known offenses or arrests in various categories of crimes. Of these, 14,850 (39%) were attributable to drug misuse. Total criminal justice costs associated with those offenses were an estimated $123.1 million. These costs include local, state, and federal government spending on police protection, legal and adjudication services, and corrections programs (see chapter on *Criminal Justice and Protective Services*).

The Bureau of Justice Statistics provides a national breakout of federal, state, and local government spending on justice systems including police protection, judicial and legal services, and corrections. On average, states cover about 30% of total justice system expenditures ($95 billion out of total national justice system spending of $302 billion). In Alaska, this percentage is likely higher because the state provides services that, in other states, typically are provided by local municipalities. Further, Alaska has no federal penitentiaries or

correctional institutions, so it likely bears more of the cost of in-state incarceration. Nationally, combined state and local funding covers an estimated 81% of total justice system cost, with the federal government funding approximately 19%.

Table 54. Estimated National Justice System Expenditures by Level of Government, FFY2018

Category	Percent	$ Millions
Police Protection		
Federal	22%	$32,488
State	11%	$16,689
Local	68%	$94,422
Total		**$143,600**
Judicial and Legal Services		
Federal	26%	$17,573
State	36%	$24,346
Local	39%	$24,396
Total		**$66,314**
Corrections		
Federal	9%	$8,047
State	58%	$53,697
Local	34%	$29,868
Total		**$91,612**
Total Justice System		
Federal	19%	$58,108
State	30%	$94,731
Local	51%	$148,682
Total		**$301,529**

Notes: Percentages based on unduplicated fund source totals after accounting for intergovernmental transfers.
Source: Bureau of Justice Statistics Justice Expenditure and Employment Extracts Program, 2013 data (most recent available) inflation adjusted to 2018.

In SFY2019, state Undesignated General Funds accounted for 88% of the combined budgets for the Alaska Court System, Department of Public Safety, and Department of Corrections, and the Juvenile Justice program under the Department of Health and Social Services. Other state and federal funds make up 12% of the combined Juvenile Justice, Court, Public Safety, and Corrections budgets. Undesignated General Funds comprise $56 million (95%) of the Juvenile Justice $59 million budget, $105 million (97%) of the Court System's $109 million budget, $165 million (82%) of Public Safety's $202 million budget, and $294 million (87%) of the $337 million Corrections' budget.

Table 55. State of Alaska Justice System Budgets, SFY2019 (thousands$)

Agency	Undesignated General Funds (UGF)	Other State and Federal Funding[1]	Total State Budget	% UGF of Total Budget
Juvenile Justice (DHSS)	$56,103.3	$2,914.4	$59,017.7	95%
Alaska Court System	$105,444.9	$3,699.7	$109,144.6	97%
Alaska Department of Public Safety	$165,320.4	$36,711.1	$202,031.5	82%
Alaska Department of Corrections	$294,108.0	$42,864.1	$336,972.1	87%
Total	**$620,976.6**	$86,189.3	$707,165.9	88%

Note: Columns may not sum due to rounding.
[1] Includes Designated General Funds, other funding, and federal funding.
Source: State of Alaska, Office of Management and Budget, McDowell Group calculations

If the State of Alaska justice system Undesignated General Fund spending in SFY2019 of $620 million matches the national average of approximately 30% of total justice spending in the state, that implies total annual justice system spending of $2.1 billion in Alaska, including local and federal government spending.

Table 24 (Chapter 4) shows that approximately $123.1 million in local, state and federal spending is attributable to drug arrests and offenses in Alaska. This represents about 5.9% of Alaska's total $2.1 billion in justice system costs. The state's portion of that $2.1 billion in total spending is $620 million. If it is assumed that 5.9% of the state's share is also attributable to drug misuse, then $37 million is the portion of state Undesignated General Fund justice system spending attributable to drug misuse. This figure is conservative; as noted above, since state spending likely accounts for a higher proportion of total justice spending in Alaska than in most other states.

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Appendix A: Attributable Fractions and Mortality

Table 56. ICD-10 Codes and Drug Attributable Fractions

Attribution Group	ICD-10	Drug Attributable Fraction
All Drugs		
Drug dependence	F11-F19(.2)	100%
Drug dependence complicating pregnancy, childbirth, or puerperium	O99.3	100%
Drug use, mental disorders, and psychoses	F11-F19(.9)	100%
Drug withdrawal syndrome in newborn	P96.1, P96.2	100%
Drugs affecting fetus or newborn via placenta or breast	P04.41, P04.49	100%
Non-dependent abuse of drugs	F11-F19(.1), F55	100%
Poisoning by CNS muscle tone depressants	T42.8	100%
Poisoning by CNS stimulants	T40.5X(1, 3-6), T50.7X(1, 3-6), T50.99(1, 3-6)	100%
Poisoning by opiates and related narcotics	T40.0X(1, 3-6), T40.1X(1, 3-6), T40.2X(1, 3-6), T40.3X(1, 3-6), T40.4X(1, 3-6), T40.60(1, 3-6), T40.69(1, 3-6)	100%
Poisoning by psychotropic agents	T40.7X(1, 36), T40.8X(1, 3-6), T40.90(1, 3-6), T40.99(1, 3-6), T43.20(1, 3-6), T431X(1, 3-6), T43.21(1, 3-6), T43.22(1, 3-6), T43.02(1, 3-6), T43.01(1, 3-6), T43.29(1, 3-6), T43.3X(1, 3-6), T43.4X(1, 3-6), T43.50(1, 3-6), T43.59(1, 3-6), T42.4X(1, 3-6), T43.60(1, 3-6), T43.61(1, 3-6), T43.62(1, 3-6), T43.63(1, 3-6), T43.69(1, 3-6), T43.8X(1, 3-6), T43.91X, T43.93-T43.96	100%
Poisoning by sedatives and hypnotics	T42.3X(1, 3-6), T42.6X(1, 3-6), T42.7X(1, 3-6)	100%
Polyneuropathy due to drugs	G62.0	100%
Suicide and self-inflicted injury	T40.0X-T40.99(2), T42.3X-T42.4X(2), T42.6X-T42.8X(2), T43.012, T43.022, T43.1X-T43.8X(2), T43.92X	100%
Opioid		
Drug dependence	F11.2	100%
Drug use, mental disorders, and psychoses	F11.9	100%
Non-dependent abuse of drugs	F11.1	100%
Poisoning by opiates and related narcotics	T40.0X(1, 3-6), T40.1X(1, 3-6), T40.2X(1, 3-6), T40.3X(1, 3-6), T40.4X(1, 3-6), T40.60(1, 3-6), T40.69(1, 3-6)	100%
Suicide and self-inflicted injury	T40.0X2-T40.692	100%

Source: National Institute on Drug Abuse (NIDA). *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992.* https://archives.drugabuse.gov/publications/economic-costs-alcohol-drug-abuse-in-united-states-1992/appendices/appendix-health-disorder-codes. Accessed October 2019.

Table 57. Alaska Drug-Related Deaths, by Cause, 2014-2018

	Total Deaths 2014-2018	Drug Attributable Deaths 2014-2018	Annual Average Drug Attributable Deaths
Causes of Death 100% Attributable to Drugs	659	659	132
Accidental poisoning by and exposure to drugs, medicaments, and biological substances	523	523	105
Assault (homicide) by drugs, medicaments and biological substances	1	1	0
Behavioral Health Disorders due to psychoactive substance	36	36	7
Drugs, medicament and biological substances causing adverse effects in therapeutic use; Opioids and related analgesics causing adverse effects in therapeutic use	0	0	0
Intentional self-poisoning (suicide) by and exposure to drugs, medicaments, and biological substances	63	63	13
Poisoning by and exposure to drugs, medicaments and biological substances, undetermined intent	36	36	7
Poisonings by drugs	0	0	0
Causes of Death Partially Attributable to Drugs	115	28	6
Hepatitis B	4	1	0
Hepatitis C	92	26	5
HIV/AIDS	19	1	0
Total	774	687	137

Source: National Institute on Drug Abuse (NIDA). *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992.* https://archives.drugabuse.gov/publications/economic-costs-alcohol-drug-abuse-in-united-states-1992/appendices/appendix-health-disorder-codes. Accessed October 2019.

Table 58. Estimated Potential Years of Life Lost (PYLL) Due to Causes of Death Attributable to Drugs in Alaska, 2014-2018

	Total Drug Attributable Deaths	PYLL Attributable to Drugs	Annual Average Drug Attributable PYLL
Causes of Death 100% Attributable to Drugs	**659**	**21,921**	**4,384**
Accidental poisoning by and exposure to drugs, medicaments, and biological substances	523	17,783	3,557
Assault (homicide) by drugs, medicaments and biological substances	1	75	15
Behavioral Health Disorders due to psychoactive substance	36	1,028	206
Drugs, medicament and biological substances causing adverse effects in therapeutic use; Opioids and related analgesics causing adverse effects in therapeutic use	0	0	0
Intentional self-poisoning (suicide) by and exposure to drugs, medicaments, and biological substances	63	1,948	390
Poisoning by and exposure to drugs, medicaments and biological substances, undetermined intent	36	1,087	217
Poisonings by drugs	0	0	0
Causes of Death Partially Attributable to Drugs	**28**	**425**	**85**
Hepatitis B	1	38	8
Hepatitis C	26	370	74
HIV/AIDS	1	17	3
Total	**687**	**22,346**	**4,469**

Source: National Institute on Drug Abuse (NIDA). *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992.* https://archives.drugabuse.gov/publications/economic-costs-alcohol-drug-abuse-in-united-states-1992/appendices/appendix-health-disorder-codes. Accessed October 2019.