

# THE ECONOMIC COSTS OF ALCOHOL MISUSE IN ALASKA

2019 UPDATE

PREPARED FOR:

Trust

Alaska Mental Health  
Trust Authority



January 2020

  
McDowell  
GROUP

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## Introduction and Purpose

The Alaska Mental Health Trust Authority contracted with McDowell Group to update its series of prior studies on the economic costs of alcohol misuse in Alaska. The economic costs of alcohol misuse 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. Other costs of alcohol misuse, such as diminished quality of life, pain and suffering of victims of crime, and others, and a spectrum of other qualitative effects, while important, are not included in this cost 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.

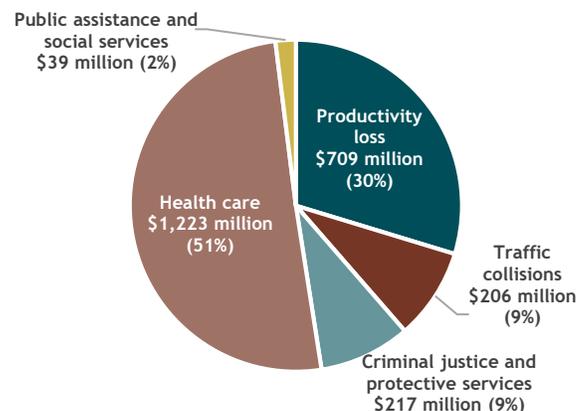
Note also that data sets often describe different time periods. In this report, years given alone, e.g., “2019” are calendar years. Other data years are specified. Alaska’s state fiscal year is designated “SFY” and runs from July 1 through June 30. The U.S. federal fiscal year is designated “FFY” and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

## Big Picture

In 2018, the estimated total cost of alcohol misuse in Alaska was \$2.4 billion. These costs are borne by state and local governments, employers, and residents of Alaska. Of the cost categories in the table below, most costs 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, largely due to associated costs of Medicaid and Medicare, is also a public expense.

**Estimated Annual Alcohol-related Economic Costs to Alaska, 2018**

Cost Category	Costs
Productivity loss	\$709 million
Traffic collisions	\$206 million
Criminal justice & protective services	\$217 million
Health care	\$1,223 million
Public assistance and social services	\$39 million
<b>Total</b>	<b>\$2,394 million</b>



Notes: Due to rounding, columns may not add to total. Does not include valuation of quality-adjusted life years due to alcohol-related traffic collisions (\$996 million) or indirect costs related to victimization (\$811 million).

Source: McDowell Group calculations

## Alcohol Consumption

In 2016-2017, approximately 302,000 Alaskans (ages 12+) reported “current use of alcohol” (any use of alcohol in the past 30 days). Among people reporting alcohol use, approximately 142,000 binge drank and 38,000 were either alcohol dependent or had misused alcohol in the past year.

Alcohol consumed in Alaska (by both residents and visitors) totaled 14.0 million gallons of beer, 2.4 million gallons of wine, and 1.8 million gallons of spirits.

In 2016-2017, Alaska ranked 27th in the U.S. for the proportion of people reporting current use of alcohol and 28th for binge drinking. In terms of alcohol dependence or misuse, Alaska’s ranking was 10th highest in the nation.

## Contributing Cost Factors

### Productivity Losses

Alcohol misuse results in lost productivity when it affects the employability of people 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 Alcohol-related Productivity Losses, Alaska, 2018**

Productivity Category	Costs	Percent of Total Costs
Premature deaths	\$385 million	54
Incarceration	\$53 million	7
Diminished productivity	\$244 million	34
Time in Alcohol addiction treatment programs	\$11 million	2
Medical conditions (primary/secondary)	\$16 million	2
<b>Total</b>	<b>\$709 million</b>	<b>100%</b>

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

Between 2014 to 2018, an annual average of 373 deaths in Alaska were linked to alcohol misuse, resulting in an estimated annual average of 10,240 potential years of life lost (PYLL). Productivity loss due to deaths where alcohol was the primary cause of death totaled approximately \$385 million in Alaska in 2018.

Lost productivity due to incarceration in Alaska in 2018 amounted to an estimated \$53 million, including \$4 million for women (7%) and \$49 million for men (93%).

Losses due to impaired productivity totaled \$244 million in 2018, including \$235 million loss in traditional labor force earnings for men with a history of alcohol dependence and \$9 million in productivity loss due to absenteeism from nondependent binge drinking.

In SFY2019, 2,204 unique individuals were admitted to 24-hour detoxification and residential treatment programs resulting in an estimated loss of \$11 million in potential earnings; \$2 million was associated with alcohol-related treatment only, and \$8 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 alcohol misuse spent 107,256 days in hospital inpatient (77,740 days) and emergency departments (29,516 days) for treatment of diseases and conditions attributable to these diagnoses; this resulted in an estimated \$16 million in lost earnings. For individuals where only the primary diagnosis was attributed to alcohol misuse, 11,759 days of lost earnings had a cost of \$2 million.

## Vehicle Traffic Collisions

Alcohol misuse plays a major role in vehicle traffic collisions in Alaska; 6% (or 639 crashes) of all traffic collisions in 2016. A total of 726 Alaskans were involved in these alcohol-suspected collisions, including 178 with minor injuries, 86 with major injuries, and 38 deaths. Of all traffic collisions, 110 resulted in property damage only.

In 2016, 358 vehicle traffic collisions in Alaska were attributed to suspected alcohol-impaired drivers. These collisions resulted in \$206 million in property damage, major and minor injuries, and fatalities. Adding impacts on quality of life brings total alcohol-suspected collision costs to \$1.2 billion (2018 dollars).

**Number of Alcohol Suspected Traffic Collisions and Cost of Collisions in Alaska, 2016 (2018\$)**

	Property Damage Only	Minor Injury	Major Injury	Fatal	Total
<b>Number of Alaska Impaired Collisions<sup>1</sup></b>	<b>110</b>	<b>144</b>	<b>74</b>	<b>30</b>	<b>358</b>
<b>Type of Costs<sup>2</sup></b>					
Medical	\$0	\$717,067	\$48,148,290	\$563,930	\$49,429,287
Emergency services	\$4,951	\$20,418	\$100,680	\$43,044	\$169,094
Market productivity	\$0	\$673,800	\$40,771,942	\$55,219,104	\$96,664,845
Household productivity	\$10,522	\$215,525	\$11,564,756	\$15,051,110	\$26,841,913
Insurance administration	\$33,423	\$880,898	\$8,724,657	\$1,351,860	\$10,990,838
Workplace costs	\$10,893	\$78,108	\$1,305,838	\$562,411	\$1,957,250
Legal costs	\$0	\$323,450	\$10,143,166	\$5,082,869	\$15,549,485
Congestion costs	\$188,528	\$254,093	\$180,041	\$273,019	\$895,681
Property damage	\$427,686	\$1,238,054	\$1,776,926	\$535,167	\$3,977,832
<b>Sub-Total</b>	<b>\$676,003</b>	<b>\$4,401,413</b>	<b>\$122,716,295</b>	<b>\$78,682,514</b>	<b>\$206,476,225</b>
Quality-adjusted life years (QALYs)	\$0	\$5,586,315	\$585,261,170	\$405,487,247	\$996,334,731
<b>Total</b>	<b>\$676,003</b>	<b>\$9,987,727</b>	<b>\$707,977,465</b>	<b>\$484,169,761</b>	<b>\$1,202,810,956</b>

Note: Possible injuries were not allocated costs. QALY provides a mechanism for measuring the value of health and the cost of diminished health or loss of life.

<sup>1</sup> DOTPF

<sup>2</sup> 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 directly attributed to alcohol misuse, for example driving under the influence and many causes of assault, theft, and other violent and nonviolent crimes. The cost of these crimes includes criminal justice system costs (law enforcement, adjudication, and incarceration) and costs related to victims of crime (both direct and indirect). Additionally, a portion of child protection services are associated with alcohol misuse.

In 2017, there were an estimated 41,559 known offenses or arrests in selected categories of crimes in Alaska. Of these, 12,217 were attributable to alcohol misuse, 29% of all the crimes in those categories, resulting in approximately \$106 million in criminal justice costs.

There were approximately 46,102 victims of the specified offenses; 10,449 victims were attributable to alcohol misuse, or approximately 23% of victims. Direct costs to victims were approximately \$111 million. If including indirect costs affecting quality of life for victims, another \$811 million in costs would bring the total to \$1 billion for all criminal justice and victimization costs in 2018.

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

	Alcohol-Related
<b>Alcohol-Related Counts</b>	
Offenses and arrests	12,217
Percentage offenses-arrests	29%
Victims of crime	10,449
Percentage victims of crime	23%
<b>Alcohol Misuse Attributable Totals</b>	
<b>Costs</b>	
Criminal justice system	\$106 million
Victim of crime - direct costs	\$111 million
Victim of crime - indirect costs	\$811 million
<b>Alcohol Misuse Criminal Justice Costs</b>	<b>\$1,028 million</b>

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

In SFY 2018, Office of Children Services (OCS) expenditures for child abuse and neglect attributable to alcohol misuse totaled an estimated \$39.7 million (or 25% of total OCS spending).

## Health Care

A wide variety of health care costs are associated with alcohol misuse, including hospitalization from injuries and illness, residential and outpatient treatment costs, pharmaceutical costs, and nursing home and long-term care facility costs.

Hospital-related medical costs to treat conditions and diseases with a primary diagnosis only associated with alcohol misuse totaled \$134 million in 2018, including \$80 million in inpatient charges, \$34 million in emergency department charges, and \$20 million in outpatient charges delivered in a hospital setting.

**Unduplicated Alaska Hospital-related Admissions/Visits, Length of Stay, and Total Alcohol-Attributable, Chronic and Acute Diagnoses Combined, Primary Diagnosis Only, 2018**

Hospital-related	Admissions			Length of Stay (days)			Total Charges
	Female	Male	Total	Female	Male	Total	
Inpatient Treatment	599	889	1,488	3,216	6,104	9,320	\$79,842,321
Emergency Department	4,861	6,785	11,688	63	6,429	11,859	\$34,003,643
Outpatient	5,171	5,348	10,519	11,337	19,667	31,004	\$20,348,786
<b>TOTAL</b>	<b>10,632</b>	<b>13,022</b>	<b>23,695</b>	<b>14,616</b>	<b>32,200</b>	<b>52,183</b>	<b>\$134,194,750</b>

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

Hospital-related medical costs to treat conditions and diseases with a primary and/or secondary diagnosis associated with alcohol misuse totaled \$1.2 billion in 2018, including \$941 million in inpatient charges, \$126 million in emergency department charges, and \$126 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 alcohol misuse.

**Duplicated Alaska Hospital-related Admissions/Visits, Length of Stay, and Total Alcohol-Attributable, Chronic and Acute Diagnoses Combined, Primary and/or Secondary Diagnosis, 2018**

Attributable	Admissions/Visits			Length of Stay (days)			Total Charges
	Female	Male	Total	Female	Male	Total	
Inpatient	5,044	6,766	11,819	35,023	54,912	89,934	\$940,638,265
Emergency Department	14,344	17,649	31,992	14,800	17,947	32,747	\$126,393,178
Outpatient	13,841	14,364	28,205	23,939	32,319	56,259	\$125,710,510
<b>TOTAL</b>	<b>33,229</b>	<b>38,779</b>	<b>72,016</b>	<b>73,762</b>	<b>105,178</b>	<b>178,940</b>	<b>\$1,192,741,953</b>

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

In SFY2018, treatment costs for 4,298 Medicaid beneficiaries with a chronic alcohol-related condition totaled \$130.3 million. Total care costs (such as care for chronic diseases) for the 4,298 Medicaid beneficiaries was \$12.9 million. This amounts to \$30,312 per Alaska Medicaid enrollee or more than three times the average spending for an Alaska enrollee.

In SFY2019, Division of Behavioral Health funding for alcohol treatment (alcohol only or alcohol and drug combined) to treatment and recovery grantee agencies was an estimated \$6.4 million.

The cost of legal prescription drugs to treat alcohol misuse is estimated to represent 2.2% of Alaska's total prescription drug sales, or \$16 million. Of Alaska's total estimated costs for skilled nursing facilities and long term care in SFY2019, alcohol misuse accounted for an estimated 1% or \$14 million.

## **Fetal Alcohol Syndrome/Fetal Alcohol Spectrum Disorder**

Approximately 47,860 people have Fetal Alcohol Spectrum Disorders (FASD) in Alaska, including 2,950 who have Fetal Alcohol Syndrome (FAS). For those with FAS, the estimated annual cost of services, including home and residential care associated with mental disability, medical equipment, special education, and lost productivity, is \$35 million. For 2018, the estimated average annual cost for caregivers of children, youth and adults with FASD, from day of birth to 53 years was approximately \$21,079 per individual, suggesting a total annual cost of \$1 billion in Alaska.

The total estimated cost to conduct an FASD assessment of 139 Alaskans in 2018 was \$879,731. Between 2013 and 2017, billed costs for Alaska Screening Tool (AST) FASD-positive screenings was \$226,787. Total Medicaid billable services for all diagnoses for the individuals who screened positive for FASD on the AST to receive treatment were \$49 million between 2013 and 2017, or an average of \$10 million per year.

Among those individuals who screened positive for FASD on the AST: 11% were homeless, accounting for about \$4.7 million in emergency services, Department of Corrections services, and health payer costs; 3% lived in a homeless shelter, at an estimated total annual cost of \$183,960; 6% were in foster care and received \$1.5 million in Office of Children Services foster care services; 3% were in a correctional/detention facility at an annual Department of Corrections cost of \$2 million.

In 2018, approximately \$1 million in unduplicated hospital charges were attributable to individuals with FASD primary or secondary diagnoses including: \$1,024,302 for inpatient care, \$1,566 for emergency department care, and \$21,491 for outpatient care.

In SFY2018, treatment costs for 262 Medicaid beneficiaries with FASD diagnosis codes totaled \$900,000. Total care costs (such as care for chronic diseases) for the 262 Medicaid beneficiaries was \$11.5 million. This amounts to \$44,000 per Alaska Medicaid enrollee or four times the average spending for an Alaska enrollee.

Approximately 550 students receiving special education services in Alaska, accounting for special education costs of \$3.9 million.

## **Public Assistance and Social Services**

In FFY2019, the U.S. government spent an estimated \$32 million in Alaska on social welfare supports attributable to alcohol 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 \$7 million on social welfare supports attributable to alcohol misuse. The largest expenditures were for Adult Public Assistance, followed by Temporary Assistance for Needy Families (TANF).

## **Cost of Underage Drinking in Alaska**

In 2016-2017, 10% of Alaskan youths age 12-17 were underage drinkers and 5% were binge drinkers.<sup>1</sup> Underage drinking in Alaska cost approximately \$361 million in 2018, including costs associated with mental distress related to physical or emotional injury, youth violence, and youth traffic accidents.

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<sup>1</sup> Binge drinking is defined as a female consuming four or more drinks or a male consuming 5 or more drinks on a single occasion on at least one day in the past 30 days.

## Impacts of Alcohol Sales

The primary focus of this study is the cost of alcohol misuse in Alaska. However, it should be noted that alcohol sales contribute to the economy through jobs, wages, and tax revenues. In 2018, 2,774 private sector jobs in Alaska were related to alcohol manufacturing and sales, totaling \$72 million in wages.

In SFY2018, the Alaska Department of Revenue collected \$39.2 million in Alcoholic Beverages Tax payments, including \$19.6 million deposited in the Alcohol and Other Drug Abuse Treatment and Prevention Fund, and \$19.6 million in General Fund receipts.

## Purpose

The Alaska Mental Health Trust Authority (Trust) contracted with McDowell Group to update prior studies (through 2016) of the economic costs of alcohol misuse in Alaska. Alcohol 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 the quantitative economic costs of alcohol misuse, such as lost earnings among the affected population and costs of government programs. Quality of life and other qualitative impacts of alcohol misuse, while substantial, are not examined in this report.

## Report Organization

This report contains:

- *Chapter 1. Alcohol Consumption in Alaska*
- *Chapter 2. Productivity Losses*
- *Chapter 3. Vehicle Traffic Collisions*
- *Chapter 4. Criminal Justice and Protective Services*
- *Chapter 5. Health Care*
- *Chapter 6: Fetal Alcohol Spectrum Disorder*
- *Chapter 7. Public Assistance and Social Services*
- *Chapter 8. Underage Drinking*
- *Chapter 9. Employment and Income from Alcoholic Beverage Manufacturing and Sales in Alaska*
- *Chapter 10. Taxes Generated from Alcohol Use*
- *Chapter 11. Implications of Alcohol Misuse Impacts on the State General Fund Budget*
- *References*
- *Appendix A: Attrition Fractions and Mortality*
- *Appendix B: FASD Demographics*

# Methodology, Definitions, and Data Sources

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

## Chapter 1. Alcohol 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 within the U.S., including prevalence estimates, trends in alcohol consumption, levels of consumption, demographic characteristics of alcohol consumers, and national and state consumption comparisons. To increase the size of the Alaska sample, results were pulled from surveys conducted in 2016 and 2017. NSDUH includes the following definitions:

**Current alcohol use:** any use of alcohol in the past 30 days.

**Binge drinking:** for males, drinking five or more drinks on the same occasion on at least 1 day in the past 30 days; binge alcohol for females is defined as drinking four or more drinks on the same occasion on at least 1 day in the past 30 days. This definition was adopted in 2015. Until the 2015 NSDUH, the definition for binge drinking was the same for males and females. As a result, estimates of past month binge drinking after 2015 are not comparable with estimates prior to 2015.

**Alcohol use disorder:** meeting DSM-IV criteria for either dependence or abuse with respect to alcohol. Respondents who used alcohol on 6 or more days in the past 12 months were defined as having dependence if they met three or more of the following seven dependence criteria:

1. spent a lot of time engaging in activities related to alcohol use
2. used alcohol in greater quantities or for a longer time than intended
3. developed tolerance
4. made unsuccessful attempts to cut down on use
5. continued use despite physical health or emotional problems associated with alcohol use
6. reduced or eliminated participation in other activities because of alcohol use
7. experienced withdrawal symptoms when cutting back or stopping use

Respondents who used alcohol on 6 or more days in the past 12 months and did not meet criteria for alcohol dependence were defined as experiencing abuse if they reported one or more of the following:

1. problems at work, home, and school because of alcohol use
2. regularly using alcohol and then doing something physically dangerous
3. repeated trouble with the law because of alcohol use
4. continued use of alcohol despite problems with family or friends

**Substance use disorder:** meeting criteria for illicit drug or alcohol dependence or abuse. Dependence or abuse is based on definitions found in the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).

## NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM (NIAAA)

NIAAA conducts research on the impact of alcohol misuse on human health and well-being, including longer-term consumption trends, types of alcohol consumed, and national and state comparisons. Data from NIAAA included 1970-2017 (and updates to previous population estimates for years 2010-2016), per capital alcohol consumption in Alaska and comparative data with other U.S. states and the nation. For more detailed discussion of the methods used to calculate apparent per capita alcohol consumption, see:

*Nephew, T.M., Yi, H., Williams, G.D., Stinson, F.S., and Dufour, M.C., 2004. U.S. Alcohol Epidemiologic Data Reference Manual, Vol. 1, 4th ed. U.S. Apparent Consumption of Alcoholic Beverages Based on State Sales, Taxation, or Receipt Data. Bethesda, MD: NIAAA, Alcohol Epidemiologic Data System. NIH Publication No. 04-5563. (Available upon request at <http://pubs.niaaa.nih.gov/publications/manual.htm>)*

*Slater, M.E., and Alpert, H.R., 2019. Surveillance Report #113: Apparent Per Capita Alcohol Consumption: National, State, and Regional Trends, 1977-2017. Bethesda, MD: NIAAA, Alcohol Epidemiologic Data System. (Available to download in PDF and HTML formats at <http://pubs.niaaa.nih.gov/publications/surveillance.htm>)*

## 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 alcohol-related deaths statewide. HAVS provided counts where alcohol-related causes were the underlying cause of death. Alcohol-related causes included causes where death is 100% attributable or partially (<100%) attributable to alcohol, as defined by the Centers for Disease Control and Prevention (CDC) Alcohol-Related Disease Impact (ARDI) application. ARDI provides a list of alcohol-attributable causes and the fractions of deaths attributable to each cause by specific age groups and genders. A list of the specific ICD-10 codes used to count the number of alcohol-related deaths reported here are in the appendix along with the AAFs and age groups associated with each cause.

### *Potential Years of Life Lost Due to Death from Alcohol*

HAVS provided the potential years of life lost (PYLL) for each underlying alcohol-related cause of death using the ICD-10 codes by age and gender. These calculations assume a 75-year lifespan. Using the appropriate AAFs for each cause of death, an estimate of the total PYLL attributable to alcohol was calculated. The complex modeling required to quantify economic costs associated with the data was outside the scope of this analysis.

## INCARCERATION CAUSES

Estimating lost productivity due to incarceration primarily involved applying potential earnings to the number of inmates and days absent from the workforce due to substance-related incarcerations. Statewide incarceration counts by gender and offense were gathered from the Alaska Department of Corrections (DOC)'s Alaska Offender Profile, 2017 – an annual report that examines the total inmate population by offense category and calendar year.

The Lewin Group's 2013 report, *Economic Cost of Excessive Alcohol Consumption in the United States, 2006*, provides attribution rates that estimate the number of inmates incarcerated due to alcohol misuse. Crimes such as driving under the influence of alcohol and liquor law violations were fully attributed to alcohol. For other offenses, the alcohol attribution rate is defined as the percentage of offenders intoxicated at the time of their offense, a methodology consistent with other literature. Median incomes for males and females were drawn from 2017 ACS 1-year estimates adjusted to 2018 dollars).

## DIMINISHED PRODUCTIVE CAUSES

This report calculates the economic impact of reduced work productivity resulting from alcohol consumption in two ways: traditional earnings and absenteeism. The former identifies losses among individuals who have a history of alcohol dependence or "alcohol dependence or abuse" as defined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (<http://www.alcoholcostcalculator.org/business/about/dsm.html>). The absenteeism approach identifies losses associated with individuals who binge drink but have no history of alcohol dependence. Costs of alcohol misuse or alcohol dependence were modeled from The Lewin Group's 2013 report, *Economic Cost of Excessive Alcohol Consumption in the United States, 2006*, and adjusted for Alaska's demographics.

To estimate productivity loss due to alcohol misuse related to traditional earnings, the prevalence of lifetime alcohol dependence was based on the National Epidemiologic Survey on Alcohol and Related Conditions (2001-2002) data and cross referenced with Alaska Department of Labor and Workforce Development's (DOLWD) population and median earnings for men and The Lewin Group's estimates of losses related to reduction in labor force participation and reductions in earnings among those continuing to participate in the labor force.

The Lewin Group also estimated losses related to absenteeism. The traditional-earnings model does not take into account increased absenteeism among individuals who binge drink but have no lifetime history of dependence. Since the report assumes these work absences are by individuals who work full-time, year-round, the estimated number of Alaskans who have increased absenteeism was calculated by multiplying the 2018 Alaska population in specified age groups (DOLWD) by the gender-specific percentage of full-time, year-round civilian employed population 16 or older in Alaska (ACS), median individual annual average earnings by gender (ACS 1-Year Estimates), prevalence of binge drinking (NSDUH 2005-2007 national averages) and mean excess days lost per year by age group (The Lewin Group). Individuals who have been alcohol dependent within the last 12 months are excluded.

## HOSPITALIZATION AND TREATMENT CAUSES

The Alaska Department of Labor and Workforce Development (DOLWD) publishes monthly average wage data for Alaska workers. The 2018 annual average wage of \$55,140 was converted to daily average earnings of \$151.48.

The Division of Behavioral Health provided the total number of bed days in 24-hour detoxification and at residential services during SFY2019, as well as the unique counts of male and female patients. The number of bed days was separated into those associated with alcohol-related treatment only and those associated with treatment for a combination of alcohol and drug misuse.

Total 2018 length of stay for all alcohol-attributable inpatient and 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. AAF were applied to these data. ARDI provides a list of alcohol-attributable causes associated with each diagnosis by specific age groups and genders.

### 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 alcohol-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 also 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.<sup>2</sup>

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

DOTPF term 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 which is not fatal, 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 which 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). This 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

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

- 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

**Fatal Injury (Killed)** is any injury that results in death within 30 days after the motor vehicle crash in which the injury occurred. If the person did not die at the scene but dies within 30 days of the motor vehicle crash in which the injury occurred, the injury classification should be changed from the option previously assigned.

**Died Prior to Crash** refers to non-motor vehicle fatalities that are involved in a motor vehicle crash; e.g., a heart attack victim, a homicide victim, a suicide or person involved in a legal intervention that is involved in a motor vehicle traffic crash.

This option is used only if the person died prior to the crash or the person dies as a result of natural causes (e.g., heart attack), disease, drug overdose or alcohol poisoning, suicide, homicide and legal intervention.

**Unknown** is used when the injury status of this person is not known (e.g., Hit-and-run).

**Null** means that no option was chosen

**Non-vehicular property damage:** if 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, driving while intoxicated, other sex offenses (including prostitution and commercialized vice), and liquor laws.

Alcohol attribution rates from The Lewin Group's 2013 report were used to estimate the number of Alaska offenses/arrests attributable to alcohol misuse. Alcohol-related crimes, including driving under the influence of alcohol and liquor-law offenses, were 100% attributed to alcohol. For other offenses, the alcohol-attributable rate was the percentage of offenders intoxicated at the time of their offense.

## CRIMINAL JUSTICE SYSTEM

Two sources were used to estimate criminal justice system costs for particular crimes. The first is the 2010 NIH report, *The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation*. The second is the Lewin Group's 2013 report, "*Economic Cost of Excessive Alcohol Consumption in the United States, 2006*."

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

The 2013 study by The Lewin Group addresses the costs of driving under the influence, public drunkenness and liquor law violations. The study's definition of criminal justice cost includes police protection, legal and adjudication, corrections, and private legal defense. For both studies, costs were adjusted to 2018 dollars and the healthcare component of Anchorage's cost-of-living.

## CRIME VICTIMIZATION

The Bureau of Justice Statistics publishes national data on victimization rates per 1,000 people age 12+ or per 1,000 households in the annual *National Criminal Victimization Survey* (NCVS) report. The NCVS collects information on nonfatal crimes reported and not reported to police from a nationally representative sample of U.S. households. The 2017 victimization rates were applied to Alaska's 2017 population age 12 and older (published by DOLWD). The Lewin Group's alcohol attribution rates were then applied to estimate the number of crime victimizations attributed to alcohol in Alaska.

The 2010 NIH report was also used to estimate direct costs for crime victim, defined as the cost of "direct 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.

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

## PROTECTIVE SYSTEMS

In DHSS's *Health Impacts of Alcohol Misuse in Alaska (2018)*, the Alaska Office of Children's Services (OCS) records the percentage of protective services reports attributed to alcohol misuse that are screened in and the number of children removed or living outside their house. These percentages were applied to the SFY2018 actual expenditures for formula (i.e., foster care) and non-formula (i.e., children services) expenditures. This estimate assumes the average workload per case for all OCS functions, including administrative and support services, is a close estimate for the workload associated with cases involving alcohol misuse.

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

## 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 other 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 alcohol attributable diagnosis or condition. When only a portion of an outcome was attributed to alcohol misuse, that AAF 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. AAF were applied to these data. ARDI provides a list of alcohol-attributable causes associated with each diagnosis for specific age groups and genders.

### TREATMENT FOR ALCOHOL MISUSE

Alaska Division of Behavioral Health provided counts of bed use per day and patients by gender for treatment related to alcohol only and alcohol and drugs combined (not including alcohol only or drug only treatment), as well as the costs associated with this care. 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.

### PRESCRIPTION DRUGS

The 1998 NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States, 1992*, reported that 2.2% of total U.S. prescription drug costs were associated with treatment of alcohol misuse. The Kaiser Family Foundation tracks annual prescription drug sales by state (<https://www.kff.org/health-costs/state-indicator/total-sales-for-retail-rx-drugs/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D>). This percentage was applied to total prescription drug sales in 2018.

### SKILLED NURSING FACILITY AND LONG-TERM CARE COSTS

DHSS Division of Senior and Disability Services provided number of long-term-care days of service and service recipients, as well as total Medicaid costs for SFY2019. The NIDA report, *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992*, estimates alcohol misuse accounts for 1% of total nursing home costs. This attribution rate was applied to total Medicaid costs for long-term-care bed use in Alaska.

## Chapter 6: Fetal Alcohol Spectrum Disorder

Live birth data was obtained from the *Alaska Vital Statistics 2017 Annual Report*. Prevalence of FAS was obtained from *Health Impacts of Alcohol Misuse in Alaska (2018)*. This methodology accounts only for babies diagnosed at birth and does not include additional cases of FAS/FASD identified, for example, after a child enters school.

In a 2009 Canadian study, *The Burden of Prenatal Exposure to Alcohol: Revised Measurement of Costs*, Stade et al, estimated annual costs associated with an FASD case at an average of \$21,642 (in Canadian dollars) in 2007. These costs include medical care, education, social services, transportation, and parent productivity losses. The costs do not include future lost productivity and earnings for the individual affected by FASD. Canadian dollars were converted to U.S. dollars and adjusted to 2018 dollars. This average cost per individual with FASD was then multiplied by the estimated FASD population in Alaska in 2018.

Data on the number and results of FAS assessments, as well as demographic data on individuals who are screened FASD positive using the Alaska Screening Tool (AST), were provided by the Alaska Division of Behavioral Health (2019) in the AKAIMS- Alaska's Automated Information Management System (Data file from AKAIMS FASD\_Screening\_Cost).

The Anchorage Mat-Su Pay for Success Permanent Supportive Housing Project provided 2018 rates for costs associated with homelessness. The average per-night spending in a homeless shelter was provided by Catholic Social Services in Anchorage. To determine the annual costs related to corrections, total SFY2019 spending for the Department of Corrections was divided by the number of inmates. These costs were then multiplied by the average annual (2013-2017) number of individuals who screened FASD positive on AST and received behavioral health services from a Division of Behavioral Health grantee based on where they lived (homeless, shelter, or correctional/detention facility).

The Alaska HFDR 2018 dataset, described under Chapter 5 above, provided the number of admissions, length of stay, and hospital charges for FASD-related primary or secondary diagnoses for the mother or newborn. Charges presented by HFDR represent the amount charged by a facility for services, not the final amount paid. ARDI provides a list of alcohol-attributable causes for FASD-related diagnoses.

Medicaid billing data for FASD-related primary or secondary diagnoses was provided by DHSS through a special data request.

Special education data does not specify FASD; however, the Kenai Peninsula Borough School District conducted a manual review of their special education student population and noted that most students with FASD fell under the "Other Health Impaired" category. Their experience suggested approximately 20% of the students in this category had FASD, or approximately 4.7% of all special education students served in the district. These same percentages served as a proxy to extrapolate to statewide needs. Special education child counts for all districts was obtained from the Alaska Department of Education and Early Development (DEED). The Lewin Group's 2013 report provided 2006 estimates for special education costs related to FASD. These costs were adjusted for inflation to 2018 dollars and applied to the extrapolated estimate of special education students who may have FASD.

## **Chapter 7. Public Assistance and Social Services**

### **FEDERAL GOVERNMENT COSTS**

This report includes federal funding from FY2019 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.

The NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States*, updated in 1998, compiled the national prevalence of alcohol misuse among beneficiaries of different social welfare programs. The study team applied those prevalence rates to the federal funding allocated to Alaska through the programs listed above along with the NIDA estimate that two-thirds of total funding attributable to alcohol misuse.

#### STATE GOVERNMENT COSTS

The State of Alaska Office of Management and Budget published expenditures for SFY2019 for individual programs operated by the Division of Public Assistance (DPA). Prevalence rates for alcohol misuse among social welfare beneficiaries from the 1998 updated NIDA study were also applied to state funding for welfare programs to determine the portion attributable to alcohol (two-thirds).

### Chapter 8. Underage Drinking

Data on underage drinking costs were first presented by the Pacific Institute for Research and Evaluation in the 2012 update of *The Economic Costs of Alcohol and Other Drug Abuse in Alaska, 2010*. No new data has been developed since that work. For purposes of this report, 2010 economic impacts were adjusted for inflation to 2018 dollars.

### Chapter 9. Employment and Income from Alcoholic Beverage Manufacturing and Sales in Alaska

Employment and wage data from DOLWD were used to highlight the economic impacts of the private sector involved with manufacturing and selling alcohol in Alaska.

### Chapter 10. Taxes Generated from Alcohol Use

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

### Chapter 11. Implications of Alcohol Misuse Impacts on the State Budget

#### MEDICAID

DHSS Medicaid data was obtained through a special data request using alcohol-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 alcohol misuse are determined based on methods used for *Chapter 7, Public Assistance and Social Services* (see earlier in Methodology).

## 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 alcohol misuse are taken from *Chapter 4, Criminal Justice and Protective Services*.

## Abbreviations

AAF	Alcohol-attributable Fractions
ACS	American Community Survey
AMI	Any mental health illness
ARBD	Alcohol-related Birth Defects
ARDI	Alcohol-Related Disease Impact
ARND	Alcohol-related Neurodevelopmental Disorder
AST	Alaska Screening Tool
BJS	Bureau of Justice Statistics
CDC	Centers for Disease Control and Prevention
DBH	Division of Behavioral Health
DEED	Alaska Department of Education and Early Development
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
FAE	Fetal Alcohol Effects
FAS	Fetal Alcohol Syndrome
FASD	Fetal Alcohol Spectrum Disorders
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
PFAS	Partial FAS
PYLL	Potential years of life lost
QALY	Quality-adjusted Life Years
QCEW	Quarterly Census of Employment and Wages
SAMHSA	Substance Abuse and Mental Health Services Administration
SFY	State Fiscal Year
SMI	Serious Mental Health Illness
SNAP	Supplemental Nutrition Assistance Program
SNF	Skilled Nursing Facility
SSI	Supplemental Security Income
SUD	Substance Use Disorder
TANF	Temporary Assistance for Needy Families
UCR	Uniform Crime Report

# Chapter 1: Alcohol Consumption and Prevalence in Alaska

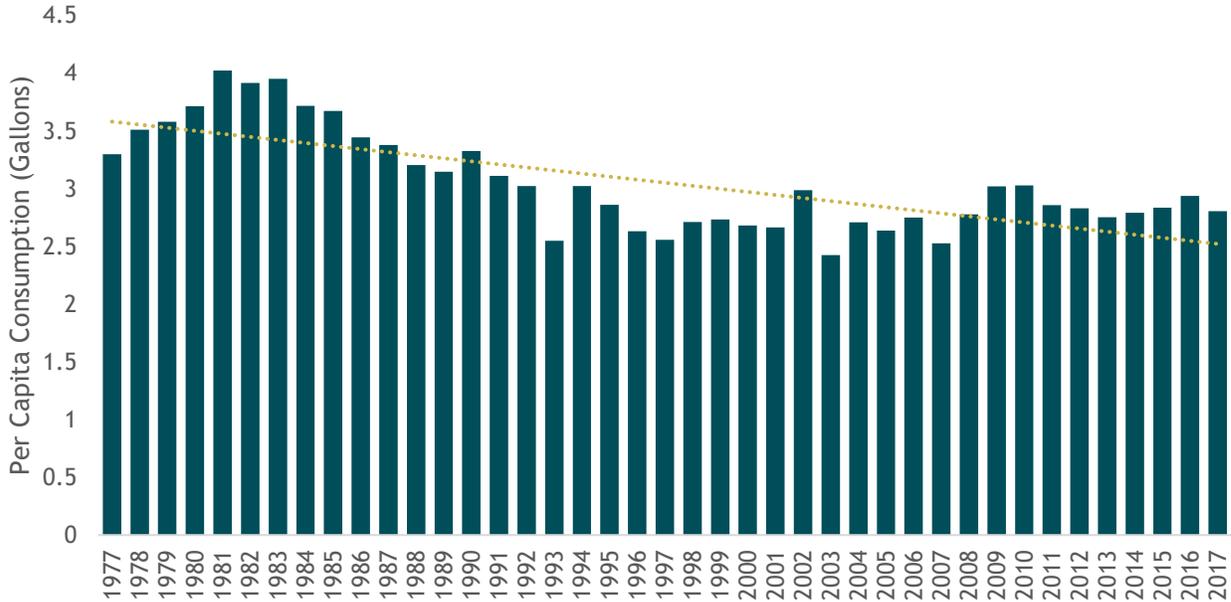
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- According to State of Alaska data, in 2016-2017, 52% of Alaskans age 12+ drank alcohol and 24% binge drank within the past month. Approximately 7% experienced an alcohol use disorder in the past year. Approximately 10% of Alaskan youths (age 12-17) drank alcohol and 5% binge drank.
- Alcohol consumption in Alaska included 14.0 million gallons of beer, 2.4 million gallons of wine, and 1.8 million gallons of spirits.
- Based on Alaska's population age 14+, per capita alcohol consumption totaled 2.81 gallons of ethanol including:
  - 1.06 gallons of ethanol contained in beer
  - 0.53 gallons of ethanol contained in wine
  - 1.22 gallons of ethanol contained in spirits
- In 2016-2017, Alaska ranked 27<sup>th</sup> in the U.S. for the proportion of people reporting current use of alcohol and 28<sup>th</sup> for binge drinking. In terms of alcohol dependence or misuse, Alaska's ranking was 10<sup>th</sup> highest in the nation.

## Alcohol Consumption Trends

Over the longer term, alcohol consumption has trended down in Alaska from a peak in 1981. In 2002, there was a notable bump in alcohol consumption in Alaska followed by a decrease in 2003. Consumers may have hoarded liquor in anticipation of an increase in the Alcoholic Beverages Tax in October 2002 from \$5.60 per gallon to \$12.80 per gallon. By 2008, liquor consumption had returned to pre-2002 levels. After 2009, there was a gradual decline until 2013 when the consumption rose until 2016 before falling back to 2014 levels (2.8 gallons of ethanol) in 2017. *(More discussion of Alaska's Alcohol Sales Tax can be found in Chapter 10.)*

**Figure 1. All Beverages Per Capita (14+) Alcohol Consumption, Gallons of Ethanol, Alaska, 1977-2017**



Source: National Institute on Alcohol Abuse and Alcoholism

## Types of Alcohol Consumed

The National Institute of Alcohol Abuse and Alcoholism (NIAAA) reported 2017 consumption of alcohol in Alaska included 14.01 million gallons of beer, 2.43 million gallons of wine, and 1.76 million gallons of spirits.

Per capita alcohol consumption among Alaskans age 14+ totaled 2.81 gallons of ethanol in 2017, including:

- 1.06 gallons of ethanol contained in beer
- 0.53 gallons of ethanol contained in wine
- 1.22 gallons of ethanol contained in spirits

## Alcohol Consumption Compared with Other States

### CURRENT AND BINGE ALCOHOL USE

In 2016-2017, Alaska ranked 27<sup>th</sup> in the U.S. for the number of people reporting they currently use alcohol and 28<sup>th</sup> for binge drinking. Alaska ranked 10<sup>th</sup> for incidence of alcohol dependence or misuse.

**Table 1. Alcohol Consumption Patterns, National and State Model-Based Prevalence Estimates, Sorted by Current Alcohol Use, Age 12+, Percent, 2016-2017**

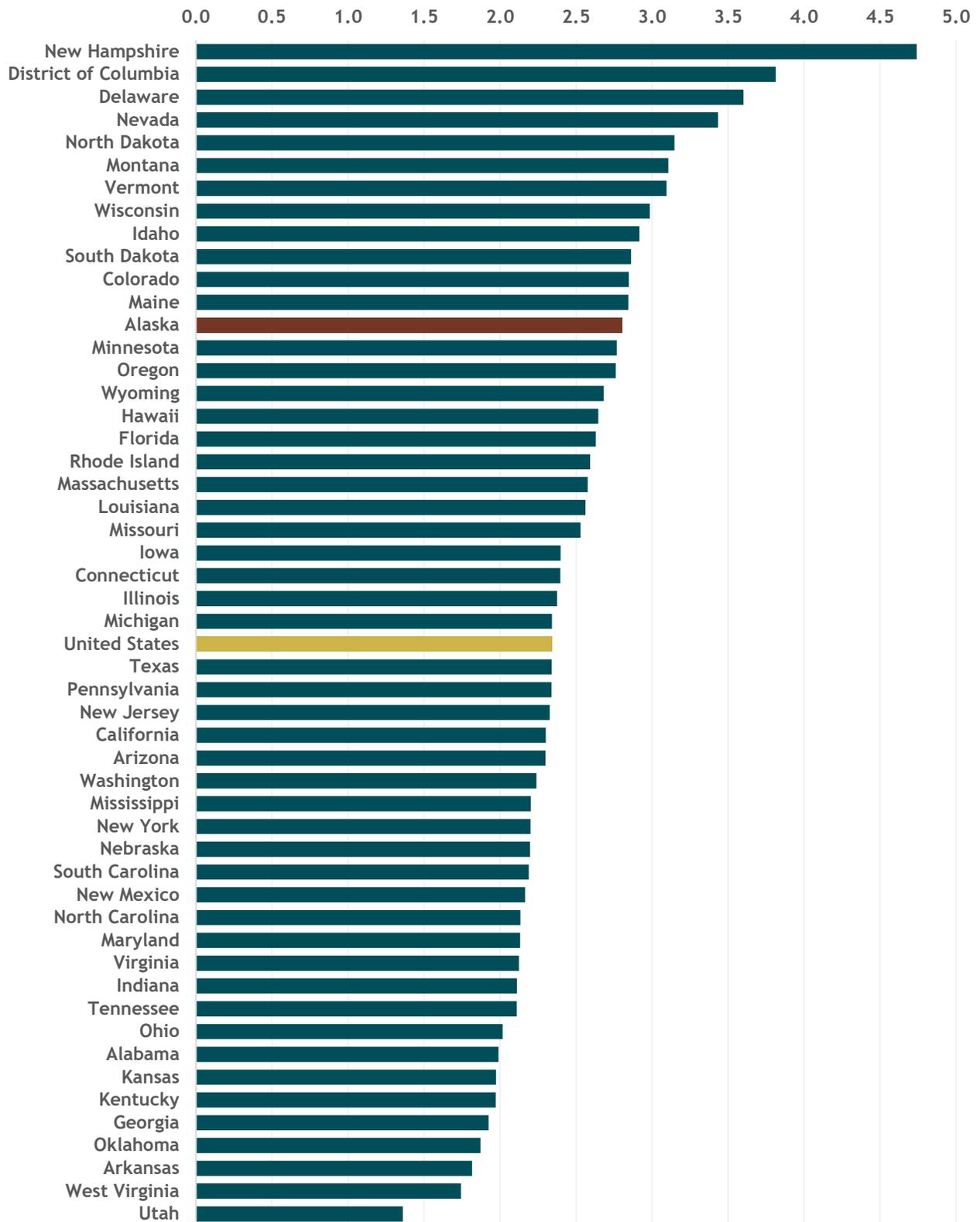
State	Current Alcohol Use		Binge Drinking		Alcohol Dependence or Misuse in Past Year		
	Order of Rank	Estimated %	95% Conf. Interval	Estimated %	95% Conf. Interval	Estimated %	95% Conf. Interval
D.C		66.8	64.0-69.4	37.0	34.2-39.9	9.1	7.6-10.8
New Hampshire		63.1	60.5-65.7	28.6	26.2-31.1	6.1	5.1-7.4
Vermont		62.1	59.2-64.9	27.3	24.9-29.8	7.3	6.0-8.7
Wisconsin		61.6	58.8-64.3	30.8	28.2-33.5	7.0	5.9-8.3
Massachusetts		61.4	58.5-64.2	31.5	28.9-34.2	7.1	5.9-8.5
Connecticut		60.2	57.2-63.1	28.3	25.8-31.0	6.1	5.0-7.4
Rhode Island		60.2	57.3-62.9	29.1	26.5-31.8	6.7	5.6-8.1
North Dakota		59.7	57.0-62.4	31.2	28.9-33.6	6.6	5.5-7.8
Colorado		59.5	56.8-62.1	27.0	24.7-29.4	6.3	5.3-7.5
South Dakota		59.5	56.7-62.2	30.8	28.3-33.5	7.5	6.3-8.9
Oregon		58.5	55.8-61.1	25.0	22.4-27.4	7.5	6.3-8.8
Iowa		58.4	55.7-61.1	29.7	27.2-32.2	7.1	6.0-8.4
Nebraska		58.3	55.6-61.1	29.0	26.5-31.6	5.8	4.8-7.0
Minnesota		57.9	55.2-60.7	26.3	24.0-28.8	5.1	4.2-6.1
Montana		57.5	54.8-60.2	29.3	27.0-31.7	7.6	6.5-9.0
Kansas		57.2	54.6-59.8	26.1	23.8-28.6	5.5	4.6-6.6
Pennsylvania		56.4	54.7-58.2	26.8	25.3-28.4	5.0	4.4-5.7
Maine		56.2	53.1-59.2	23.5	21.1-26.1	5.6	4.6-6.9
Washington		55.2	52.3-58.1	22.7	20.5-25.0	6.1	5.0-7.4
New York		54.7	53.1-56.4	25.0	23.6-26.4	5.7	5.0-6.4
Illinois		54.5	52.7-56.3	27.5	26.0-29.2	6.2	5.5-7.1
Maryland		53.3	50.6-56.0	23.8	21.6-26.1	5.4	4.4-6.5
Michigan		53.2	51.3-55.0	25.2	23.7-26.7	5.5	4.8-6.2
New Jersey		53.1	50.7-55.5	24.2	22.2-26.3	4.7	4.0-5.6
Virginia		52.3	50.1-54.5	23.5	21.6-25.4	5.5	4.7-6.4
Florida		51.8	50.1-53.5	24.7	23.2-26.1	5.3	4.7-6.0
Alaska		51.6	48.8-54.4	24.2	22.0-26.6	6.6	5.5-7.9
Delaware		51.4	48.5-54.3	22.5	20.3-24.9	6.1	5.1-7.4
Ohio		51.1	49.2-52.9	24.8	24.0-24.8	5.6	5.3-5.6
Missouri		50.9	48.2-53.6	25.2	23.3-26.5	5.3	4.9-6.4
California		50.5	49.2-51.7	23.5	23.0-27.6	5.5	4.4-6.5
Arizona		50.4	47.4-53.4	23.1	22.4-24.6	5.5	5.0-6.1
Louisiana		50.1	47.4-52.8	26.7	20.8-25.6	6.2	4.5-6.7
Indiana		49.9	47.1-52.7	23.1	24.5-29.1	5.2	5.1-7.4
Wyoming		49.9	46.9-52.8	23.8	21.6-26.2	6.3	5.3-7.6
New Mexico		49.0	46.2-51.8	24.4	22.1-26.9	6.0	5.0-7.2
Nevada		48.3	45.3-51.3	23.6	21.3-26.1	5.7	4.6-6.9
Texas		47.1	45.7-48.5	23.3	22.1-24.6	4.6	4.1-5.1
Idaho		46.5	43.8-49.2	21.7	19.6-24.0	5.9	4.9-7.1
South Carolina		45.3	42.6-48.1	23.5	21.2-25.9	5.4	4.5-6.5

State	Current Alcohol Use		Binge Drinking		Alcohol Dependence or Misuse in Past Year		
	Order of Rank	Estimated %	95% Conf. Interval	Estimated %	95% Conf. Interval	Estimated %	95% Conf. Interval
Hawaii		45.1	42.2-48.1	20.4	18.3-22.8	5.2	4.3-6.4
Oklahoma		44.8	42.1-47.5	22.1	19.9-24.4	5.9	4.9-7.1
Georgia		44.8	42.5-47.1	20.6	18.9-22.5	4.4	3.7-5.3
North Carolina		44.4	42.2-46.7	20.4	18.7-22.2	4.4	3.6-5.3
Tennessee		43.7	41.1-46.3	20.4	18.4-22.6	4.8	4.0-5.9
Alabama		42.0	39.4-44.6	21.4	19.3-23.7	4.5	3.6-5.6
Arkansas		39.9	37.1-42.7	19.5	17.4-21.7	5.4	4.4-6.5
Kentucky		39.8	37.1-42.5	21.8	19.6-24.1	4.9	4.0-6.1
West Virginia		39.7	36.9-42.6	21.5	19.5-23.7	4.4	3.6-5.5
Mississippi		38.2	35.5-41.0	20.6	18.4-23.0	4.4	3.6-5.4
Utah		29.3	26.8-31.8	16.2	14.5-18.1	4.9	4.1-5.9
Total U.S.		51.2	50.7-51.7	24.4	24.0-24.8	5.5	5.3-5.6

Source: National Survey of Drug Use and Health, SAMHSA

The figure on the next page shows Alaska ranks 13<sup>th</sup> in the U.S. for per capita consumption. However, the estimates must be used with caution in view of Alaska's large number of visitors (approximately 2 million) since their consumption is included in the figures as well as that of residents.

**Figure 2. Per Capita (14+) Apparent Alcohol Consumption, All Beverages Combined, Alaska, All Other States, and U.S., Gallons of Ethanol, 2017**



Source: National Institute on Alcohol Abuse and Alcoholism

**Table 2. Per Capita (14+) Apparent Alcohol Consumption, by Beverage Type, Alaska, All Other States, and U.S., Gallons of Ethanol, 2017**

State	Beer Per Capita (Gallons)	Wine Per Capita (Gallons)	Spirits Per Capita (Gallons)	All Beverages Per Capita (Gallons)	U.S. Decile
New Hampshire	2.02	0.88	1.84	4.74	1
District of Columbia	1.69	1.02	1.10	3.81	1
Delaware	1.74	0.72	1.15	3.60	1
Nevada	1.45	0.60	1.38	3.43	1
North Dakota	1.30	0.34	1.51	3.15	1
Montana	0.98	0.51	1.61	3.11	2
Vermont	0.75	0.80	1.55	3.10	2
Wisconsin	1.26	0.40	1.33	2.99	2
Idaho	0.82	1.19	0.91	2.92	2
South Dakota	1.03	0.30	1.54	2.86	2
Colorado	1.19	0.52	1.14	2.85	3
Maine	1.05	0.44	1.35	2.84	3
Alaska	1.22	0.53	1.06	2.81	3
Minnesota	1.18	0.44	1.14	2.77	3
Oregon	0.93	0.59	1.24	2.76	3
Wyoming	1.19	0.32	1.17	2.68	4
Hawaii	0.78	0.58	1.28	2.65	4
Florida	1.04	0.52	1.07	2.63	4
Rhode Island	1.08	0.58	0.93	2.59	4
Massachusetts	0.97	0.66	0.95	2.58	4
Louisiana	0.99	0.33	1.23	2.56	5
Missouri	1.01	0.39	1.13	2.53	5
Iowa	0.89	0.24	1.27	2.40	5
Connecticut	0.98	0.60	0.82	2.40	5
Illinois	0.83	0.45	1.10	2.38	5
Michigan	0.93	0.40	1.01	2.34	6
Texas	0.72	0.35	1.27	2.34	6
Pennsylvania	0.71	0.33	1.29	2.34	6
New Jersey	0.95	0.59	0.79	2.33	6
California	0.78	0.58	0.94	2.30	6
Arizona	0.79	0.39	1.11	2.30	6
Washington	0.79	0.52	0.93	2.24	7
Mississippi	0.78	0.18	1.25	2.20	7
New York	0.78	0.53	0.89	2.20	7
Nebraska	0.72	0.22	1.26	2.20	7
South Carolina	0.80	0.25	1.14	2.19	7
New Mexico	0.81	0.30	1.06	2.16	8
North Carolina	0.65	0.44	1.05	2.13	8
Maryland	0.92	0.40	0.81	2.13	8
Virginia	0.67	0.49	0.96	2.12	8
Indiana	0.85	0.29	0.97	2.11	8

State	Beer Per Capita (Gallons)	Wine Per Capita (Gallons)	Spirits Per Capita (Gallons)	All Beverages Per Capita (Gallons)	U.S. Decile
Tennessee	0.81	0.32	0.99	2.11	9
Ohio	0.60	0.31	1.11	2.02	9
Alabama	0.67	0.26	1.06	1.99	9
Kansas	0.80	0.14	1.03	1.97	9
Kentucky	0.82	0.21	0.94	1.97	9
Georgia	0.70	0.25	0.97	1.92	10
Oklahoma	0.65	0.20	1.03	1.87	10
Arkansas	0.67	0.23	0.92	1.82	10
West Virginia	0.46	0.11	1.17	1.74	10
Utah	0.56	0.20	0.61	1.36	10
U.S. Total	0.84	0.43	1.06	2.34	

Source: National Institute on Alcohol Abuse and Alcoholism

## Binge Drinking in Alaska

Survey data from 2016-2017 finds approximately half (51.6%) of Alaskans age 12 or older were alcohol drinkers. Almost one-quarter (24.2%) of Alaskans were estimated to binge drink. Binge drinking for males is defined as drinking five or more drinks on the same occasion on at least 1 day in the past 30 days; binge alcohol use for females is defined as drinking four or more drinks on the same occasion on at least 1 day in the past 30 days. A total of 6.6% of Alaskans over age 12 reported alcohol use disorder in the past year. Alcohol use disorder is defined as meeting *Diagnostic and Statistical Manual of Mental Disorders, 4<sup>th</sup> Edition* (DSM-IV) criteria for either “alcohol dependence” or “alcohol abuse.” Alaskans reported consumption patterns similar to those of the United States as a whole.<sup>3</sup>

### Current Consumption Rates and Binge Alcohol Use (2016-2017)

In 2016-2017, approximately 302,000 Alaskans (ages 12+) reported “current use of alcohol” (any use of alcohol in the past 30 days). Among these drinkers, approximately 142,000 binge drank and 38,000 were either alcohol dependent or had misused alcohol in the past year.

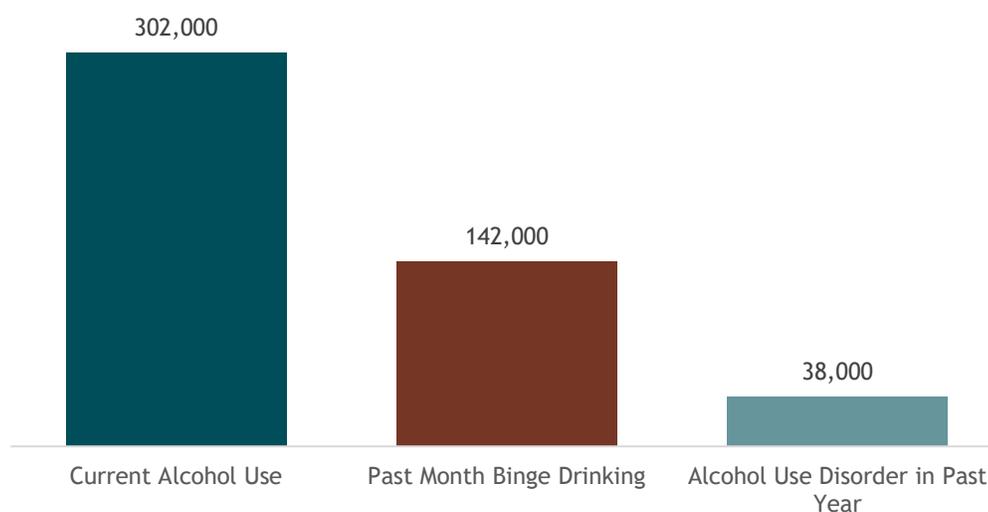
**Table 3. Alcohol Consumption Patterns Prevalence Estimates, Alaska and U.S., Ages 12+, 2016-2017**

Alcohol Indicator, Ages 12+	Alaska		United States
	Percent (95% Confidence Interval)	# of Alaskans* (95% Confidence Interval)	Percent (95% Confidence Interval)
Current Alcohol Use	51.6 (48.8-54.4)	302,000 (286,000-318,000)	51.2 (50.7-51.7)
Past Month Binge Drinking	24.2 (22.0-26.6)	142,000 (129,000-156,000)	24.4 (24.0-24.8)
Alcohol Use Disorder in Past Year	6.6 (5.5-7.9)	38,000 (32,000-46,000)	5.5 (5.3-5.6)

\* Alaska model-based population estimates by McDowell Group.  
Source: National Survey of Drug Use and Health, SAMHSA

<sup>3</sup> For additional information on consumption not reported below, please refer to the Alaska Department of Health and Social Services, Health Impacts of Alcohol Misuse in Alaska, released in May 2018 ([http://www.epi.alaska.gov/bulletins/docs/rr2018\\_02.pdf](http://www.epi.alaska.gov/bulletins/docs/rr2018_02.pdf)).

**Figure 3. Alcohol Consumption Patterns, Estimated Number of Alaskans\*, Ages 12+, 2016-2017**



\* Alaska model-based population estimates by McDowell Group.  
Source: National Survey of Drug Use and Health, SAMHSA

### Current and Binge Alcohol Misuse by Age Group

Approximately 10% of Alaskan youth age 12-17 currently misuse alcohol. In the next age grouping (ages 18-25), the rate increases significantly to 56%. Of those alcohol drinkers ages 18-25, 36% said they binge drank in the previous month. These Alaska prevalence rates are similar to the U.S. as a whole for all age groups.

**Table 4. Current Alcohol Use 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)
12-17 years	10.1 (8.3-12.2)	9.5 (9.1-10.0)
18-25 years	55.7 (51.3-59.9)	56.7 (55.9-57.6)
12+ years	51.6 (48.8-54.4)	51.2 (50.7-51.7)
18+ years	56.3 (53.2-59.3)	55.4 (54.9-55.9)
26+ years	56.3 (52.9-59.7)	55.2 (54.7-55.8)

Source: National Survey of Drug Use and Health, SAMHSA

**Table 5. Past Month Binge Drinking 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)
12-17 years	5.1 (4.0-6.5)	5.1 (4.8-5.4)
18-25 years	35.8 (32.0-39.7)	37.6 (36.8-38.4)
12+ years	24.2 (22.0-26.6)	24.4 (24.0-24.8)
18+ years	26.3 (23.9-29.0)	26.3 (25.9-26.7)
26+ years	24.8 (22.1-27.6)	24.5 (24.0-24.9)

Source: National Survey of Drug Use and Health, SAMHSA

## Alaska and National Prevalence Trends in Current and Binge Alcohol Use

Alcohol prevalence rates have not changed significantly since 2013. Although Alaska rates in 2013-2014 and 2016-2017 appear to suggest a decline, the figures are not comparable due to changes in reporting methods.

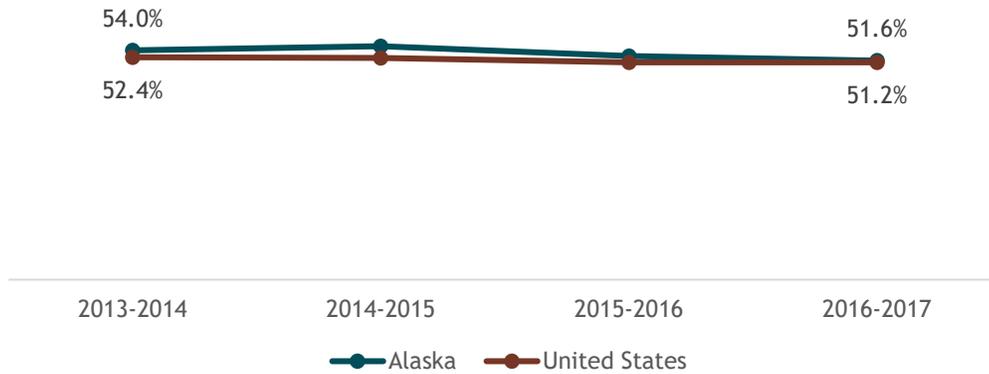
**Table 6. Current Alcohol Use and Past Month Binge Drinking Prevalence Estimates, Alaska and U.S. Comparisons, Ages 12+, 2013-2017**

Year	Alaska	United States
	Percent (95% Confidence Interval)	Percent (95% Confidence Interval)
<b>Current Alcohol Use</b>		
2013-2014	54.0 (51.1-56.9)	52.4 (51.9-52.9)
2014-2015	55.0 (52.4-57.5)	52.2 (51.7-52.6)
2015-2016	52.7 (50.0-55.4)	51.2 (50.8-51.7)
2016-2017	51.6 (48.8-54.4)	51.2 (50.7-51.7)
<b>Past Month Binge Drinking*</b>		
2015-2016	25.0 (22.8-27.2)	24.6 (24.2-25.0)
2016-2017	24.2 (22.0-26.6)	24.4 (24.0-24.8)

\*Estimates of past month binge drinking after 2015 are not comparable to estimates prior to 2015. Estimates of past month binge drinking prior to 2015 are not presented.

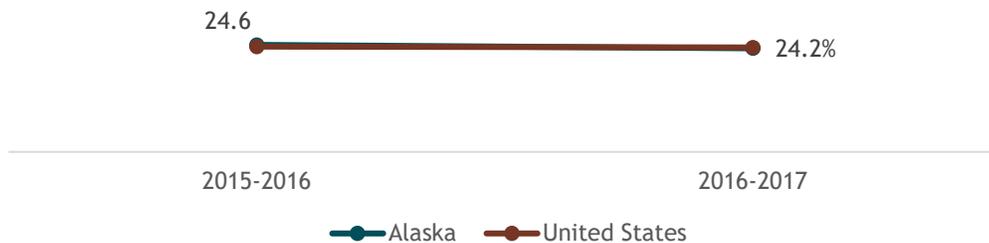
Source: National Survey of Drug Use and Health, SAMHSA

**Figure 4. Current Alcohol Use Prevalence Estimates, Alaska and U.S. Comparisons, Ages 12+, 2013-2017**



Source: National Survey of Drug Use and Health, SAMHSA

**Figure 5. Past Month Binge Drinking Prevalence Estimates, Alaska and U.S. Comparisons, Ages 12+, 2013-2017**



Source: National Survey of Drug Use and Health, SAMHSA

## Co-Occurrence Disorders

While substance use disorders (SUD) have been documented as a problem in Alaska and nationwide, less frequently noted are individuals with SUDs who also have a mental health issue, defined as a co-occurring disorder. Research has shown that 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 (age 18+) 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 adult who had both an SUD and AMI. These adults represent 45% of people who have an SUD and 18% of people with AMI.

**Table 7. Past Year Co-Occurring Mental Health and Substance Use Disorders, Adults Age 18+, 2017**

Category	Count (In Millions)
<b>Adults with Past Year Substance Use Disorder</b>	
Substance Use Disorder	18.7
Substance Use Disorder, No Mental Illness	10.2
<b>Adults with Past Year Mental Illness</b>	
Mental Illness	46.6
Mental Illness, No Substance Use Disorder	38.1
<b>Mental Illness &amp; Substance Use Disorder</b>	<b>8.5</b>

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).<sup>4</sup> 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 who had an SUD in the past 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 (Serious Mental Illness) received mental health or SUD treatment, 50% with SMI received mental health services

<sup>4</sup> 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)

treatment only, 3% with SMI received SUD treatment only, and 12% with SMI received both mental health and SUD treatment.

**Table 8. Percentage of Adults (18+ Years) with Past Year Substance Use Disorder Received Substance Use Treatment and/or Mental Health Services in Past Year, by Past 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

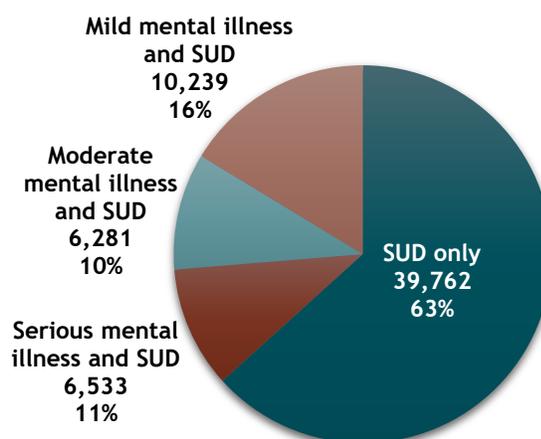
Source: National Survey of Drug Use and Health - Detailed Tables, SAMHSA

## 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).<sup>5</sup>

The most recent data available on individuals with an SUD and also receiving 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 6. Alaska Adult Past Year Mental Health Prevalence Among Persons Needing Treatment for Illicit Drug or Alcohol Use, 2013**



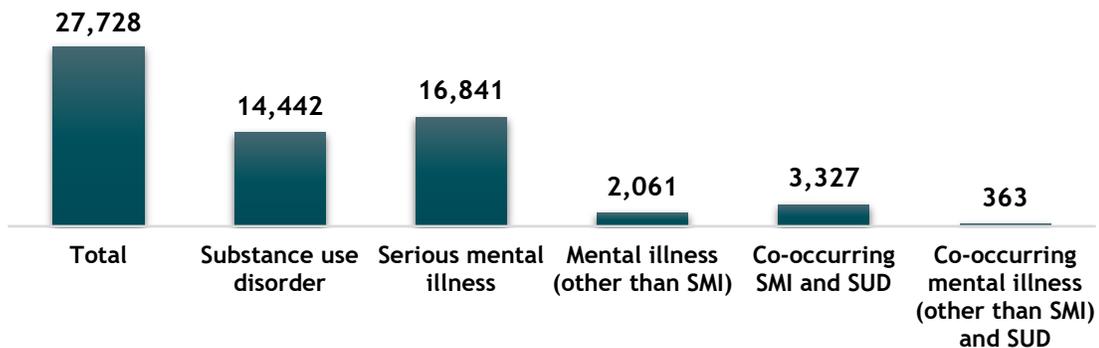
Source: Alaska Mental Health Trust Authority, “*Alaska Behavioral Health Systems Assessment Final Report*” (2016).

<sup>5</sup> 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.<sup>6</sup> 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 7. Total Number of Alaska Adults Served with Support from State Medicaid and Behavioral Health Funds by Diagnosis, FY2013**



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

<sup>6</sup><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 in Alaska, 1,862 deaths were linked to alcohol misuse, an annual average of 373 deaths. These 1,862 deaths resulted in an estimated 51,199 years of life lost (PYLL) due to alcohol misuse, an annual average of 10,240 PYLL per year.
- Productivity loss due to deaths where alcohol was the primary cause of death totaled approximately \$385 million in Alaska in 2018.
  - An average of 132 women and 241 men died annually between 2014 and 2018 from alcohol misuse.
  - Female deaths attributed to alcohol resulted in annual productivity losses of \$102 million (26% of the total); male deaths resulted in the remaining \$283 million productivity loss.
- Lost productivity due to incarceration in Alaska in 2018 amounted to an estimated \$53.4 million, including \$4.0 million for women (7%) and \$49.4 million for men (93%).
- Losses due to impaired productivity totaled \$244 million in 2018, including:
  - \$234.7 million loss in traditional labor force earnings for men with a history of alcohol dependence.
  - \$9.4 million in productivity loss due to absenteeism from nondependent binge drinking; men contributed 79% to this loss (\$7.5 million) and women 21% (\$2.0 million).
- In SFY 2019, admission to 24-hour detoxification and residential treatment services resulted in an estimated loss of \$11.0 million in potential earnings for 2,204 unique individuals; \$2.3 million was associated with alcohol-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 alcohol misuse spent 107,256 days in hospital inpatient and emergency departments for treatment of diseases and conditions attributable to these diagnoses. This resulted in an estimated \$16.2 million in lost earnings. For individuals where only the primary diagnosis was attributed to alcohol misuse, 11,759 days of lost earnings amounted to \$1.8 million of this total impact.

## Lost Future Earnings Due to Mortality

A significant economic cost due to alcohol misuse in Alaska comes from premature death. Various causes of death may be attributable to alcohol misuse either directly or indirectly, such as alcohol poisoning, cirrhosis of the liver, motor vehicle collisions, diabetes, or homicide. Productivity losses from these alcohol-related, premature deaths are the largest category of alcohol-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 potential to create societal value by performing household services such as raising children, caring for elders, and household maintenance.

A total of 8,504 deaths in Alaska from 2014 to 2018 included an ICD-10 code attributing them directly or partially to alcohol. Adding the directly attributable deaths to the alcohol-attributable fractions of the partially-related deaths yields a total of 1,862 deaths that were alcohol-related, an annual average of 373 alcohol-related deaths between 2014 and 2018.

**Table 9. Alaska Alcohol-Related Deaths, 2014-2018**

	Deaths Caused by Selected ICD-10 Diagnoses 2014-2018	Estimated Alcohol Attributable Deaths 2014-2018	Annual Average Alcohol Attributable Deaths
Directly attributable	839	839	168
Partially attributable	7,665	1,023	205
<b>Total</b>	<b>8,504</b>	<b>1,862</b>	<b>373</b>

Notes: Due to rounding columns may not add to totals. See the Appendix 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 attribution rates from CDC - Alcohol and Public Health - Alcohol-Related Disease Impacts (ARDI); CDC’s Vital Statistics - Patra 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 alcohol was 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 underlying alcohol-related causes of death with the highest annual costs were suicide (43 deaths per year and \$64.4 million in loss), alcohol related liver disease (85 deaths per year and \$64.3 million in loss) and poisoning by a substance other than alcohol (32 deaths per year and \$43.2 million in loss). Men make up about two-thirds of the deaths but represent almost three-quarters of the total lost earnings potential (\$385.2 million) because of their higher average wages. The remaining \$101.8 million is associated with female deaths.

**Table 10. Estimated Future Earnings Loss in Alaska, Alcohol-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 Alcohol
<b>Males</b>	<b>241</b>	<b>-</b>	<b>\$283,412,011</b>
0-4 years	2	\$1,606,834	\$3,004,780
5-14 years	2	\$1,866,784	\$3,591,692
15-24 years	22	\$2,208,171	\$49,299,620
25-34 years	38	\$2,187,080	\$83,577,057
35-44 years	33	\$1,771,554	\$58,057,354
45-54 years	46	\$1,157,454	\$53,701,231
55-64 years	57	\$501,764	\$28,655,764
65-74 years	25	\$131,156	\$3,239,294
75-84 years	11	\$25,215	\$265,363
85+ years	5	\$4,237	\$19,856
<b>Females</b>	<b>132</b>	<b>-</b>	<b>\$101,819,591</b>
0-4 years	1	\$1,188,413	\$1,609,111
5-14 years	2	\$1,380,145	\$2,282,760
15-24 years	9	\$1,597,149	\$14,022,971
25-34 years	21	\$1,488,042	\$31,451,266
35-44 years	20	\$1,142,169	\$22,859,364
45-54 years	29	\$702,166	\$20,449,886
55-64 years	30	\$278,053	\$8,439,475
65-74 years	10	\$64,145	\$645,812
75-84 years	5	\$11,673	\$53,417
85+ years	5	\$1,163	\$5,528
<b>Total</b>	<b>373</b>	<b>-</b>	<b>\$385,231,603</b>

Note: Due to rounding columns may not add to totals.

Source: Death counts provided by DHSS' Division of Public Health Bureau of Vital Statistics (BVS). McDowell Group calculations based on attribution rates from CDC - Alcohol and Public Health - Alcohol-Related Disease Impacts (ARDI); CDC's Vital Statistics - Patra 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)

Calculating the potential years of life lost (PYLL) is another approach to identifying the economic impact of alcohol-related deaths. These estimates assume an average 75-year lifespan for both males and females and are based on a person's age at the time of their death and the number of years they would have been expected to live if alcohol had not been a factor in their deaths.

The 1,862 deaths attributable to alcohol between 2014 and 2018 represent an estimated 51,199 PYLL due to alcohol misuse, an annual average of 10,240 PYLL.

**Table 11. Estimated PYLL (Potential Years of Life Lost) Due to Alcohol-Attributable Causes in Alaska, 2014-2018**

Level of Attribution	Estimated Attributable Deaths 2014-2018	Attributable PYLL 2014-2018	Avg. Annual PYLL
Directly attributable	839	19,406	3,881
Partially attributable	1,023	31,793	6,359
<b>Total</b>	<b>1,862</b>	<b>51,199</b>	<b>10,240</b>

Note: Due to rounding columns may not add to totals.

Source: Death counts provided by DHSS' BVS unpublished data, and McDowell Group calculations. Alcohol attribution rates from CDC's ARDI.

## Lost Productivity Due to Incarceration

Alaska also experiences lost productivity due to people being incarcerated in prisons because of alcohol. These individuals may have been arrested for a crime directly related to alcohol misuse, such as driving while intoxicated or a crime committed when they are under the influence of alcohol or in order to obtain more alcohol. Assuming incarcerated adults could otherwise be productive members of the workforce or in households, their absence from the workforce due to incarceration is an economic loss for Alaska.

The table below shows the number of inmates in Alaska by offense category, the percentages of crimes attributable to alcohol, and the estimated numbers of inmates in each category. In 2017, there were 2,533 inmates incarcerated in Alaska for the specified offenses; 889 incarcerations were attributed to alcohol misuse (35% of the total).

**Table 12. Incarcerations Attributed to Alcohol Misuse by Offense in Alaska, 2017**

Type of Offense	2017 Alaska Prison Inmates by Offense Category <sup>1</sup>	Percent Attributed to Alcohol <sup>2</sup>	Estimated Number Alcohol-Attributed
<b>Violent Death</b>			
Homicide/murder/manslaughter	474	47	223
Forcible rape	244	28	68
Sexual offenses	546	22	120
Aggravated assault	566	29	164
Other assaults	5	19	1
<b>Property Crime</b>			
Robbery	120	27	32
Burglary	103	27	28
Larceny-theft	133	20	27
Motor vehicle theft	81	22	18
Vandalism	73	27	20
<b>Alcohol Crime</b>			
Alcohol offenses	188	100	188
<b>Total</b>	<b>2,533</b>		<b>889</b>

<sup>1</sup> Alaska Department of Corrections (DOC), "Alaska Offender Profile, 2017" (2015). <https://doc.alaska.gov/admin/docs/2017Profile.pdf>

<sup>2</sup> The Lewin Group, "Economic Cost of Excessive Alcohol Consumption in the United States, 2006" (Updated 2013).

To estimate the cost of lost productivity, the study team used the median individual annual average earnings for Alaska’s population 16 or older by gender from the ACS 2018 1-year estimates: \$61,226 for males and \$49,020 for females. Based on the assumption that the incarcerated population reflected in these data is typical of the prison population over the course of the year, annual average earnings figures can be used to estimate the cost of lost productivity. The cost of lost productivity in Alaska due to incarceration associated with alcohol in 2018 was \$53.4 million; \$4.0 million for women (7%) and \$49.4 million for men (93%).<sup>7</sup>

**Table 13. Cost of Lost Productivity by Gender in Alaska, 2014**

Estimated Number	Attributed to Alcohol <sup>1</sup>	Median Earnings <sup>2</sup>	Earnings Lost Due to Incarceration Due to Alcohol
Females Incarcerated	81	\$49,020	\$3,970,620
Males Incarcerated	807	\$61,226	\$49,409,382
<b>Total</b>	<b>889</b>		<b>\$53,380,002</b>

Source: <sup>1</sup> McDowell Group calculations based on DOC, and the Lewin Group alcohol attribution rates. <sup>2</sup> American Community Survey (ACS) 2018 American Community Survey 1-year Estimates.

## Losses Due to Impaired Productivity

Excessive alcohol consumption can interfere with an individual’s ability to get and keep employment and with their productivity on the job and at home. Alcohol can interfere with an individual’s 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 alcohol consumption may be lower than among similar workers without such problems.<sup>8</sup> There are two components of impaired productivity: traditional earnings and absenteeism.

It is recognized there are losses to household productivity associated with excessive alcohol consumption (i.e., care of children, household chores, etc.). However, data to estimate reductions in household activities are lacking and so this productivity loss is not included.

## Losses Related to Traditional Earnings

Losses in traditional labor force earnings are calculated for men who have a lifetime history of alcohol dependence. Economic modeling research has found no statistically significant effect on traditional earnings from alcohol dependence in women. The estimated traditional labor force earnings loss for men with a history of alcohol dependence in Alaska in 2018 was \$234.7 million.

<sup>7</sup> The large differential between men and women is partly because of men’s higher earnings but mainly because men are a much larger proportion of the inmate population than women.

<sup>8</sup> The Lewin Group, “*Economic Cost of Excessive Alcohol Consumption in the United States, 2006*” (2013).

**Table 14. Alaska Labor Force Earnings Losses for Men with a History of Alcohol Dependence, by Age Groups, 2018**

Age Groups	2018 Alaska Population 18-64 Years <sup>1</sup>	Prevalence of Lifetime Alcohol Dependence <sup>2</sup>	Alcohol Dependent Population	Mean Estimated Loss per Alcohol Dependent Individuals <sup>3</sup>	Estimated Productivity Loss
18-19	9,629	19%	1,830	\$1,249	\$2,258,599
20-25	31,536	24%	7,569	\$2,622	\$19,944,199
26-29	23,429	22%	5,154	\$4,651	\$23,580,736
30-34	29,065	20%	5,813	\$5,954	\$34,402,938
35-49	71,638	18%	12,895	\$6,863	\$87,415,653
50-64	74,059	13%	9,628	\$6,965	\$67,108,304
<b>Total</b>	<b>239,356</b>	-	<b>42,888</b>	-	<b>\$234,710,429</b>

Notes:

<sup>1</sup> DOLWD's 2018 population estimates.

<sup>2</sup> Prevalence of Lifetime alcohol dependence was estimated based on the *National Epidemiologic Survey on Alcohol and Related Conditions* (2001-2002) for consistency with the loss estimates.

<sup>3</sup> Loss per individuals includes losses related to reduction in labor force participation rate and reductions in earnings among those continuing to participate in the labor force included in The Lewin Group, *"Economic Cost of Excessive Alcohol Consumption in the United States, 2006"* (2013).

<sup>4</sup> The Lewin Group, *"Economic Cost of Excessive Alcohol Consumption in the United States, 2006"* (2013).

## Losses Related to Absenteeism

Productivity losses related to absenteeism are associated with individuals who binge drink but have no lifetime history of alcohol dependence. The productivity loss in Alaska due to absenteeism was estimated to be \$9.4 million in 2018; males were estimated to have lost \$7.5 million (79%) and females \$2.0 million (21%).

**Table 15. Alaska Productivity Losses Due to Increased Absenteeism from Nondependent Binge Drinking, by Gender and Age Groups, 2018**

	2018 Alaska Population 18-64 Years <sup>1</sup>	Alaska Civilian Population Employed Full-Time, Year-Round (16+ years) <sup>2</sup>	Nondependent Binge Alcohol Use <sup>3</sup>	Mean Excess Days Lost Per Year <sup>4</sup>	Median Daily Earnings for Full-Time, Year-Round Civilian Employees <sup>2</sup>	Estimated Productivity Loss
<b>Females</b>	<b>226,299</b>	<b>63%</b>	-	-	<b>\$134.30</b>	<b>\$2,031,086</b>
18-19	8,213	63%	27%	0.861	\$134.30	\$158,552
20-25	30,661	63%	33%	0.694	\$134.30	\$594,129
26-29	21,970	63%	27%	0.585	\$134.30	\$291,435
30-34	27,792	63%	20%	0.598	\$134.30	\$285,455
35-49	67,475	63%	17%	0.516	\$134.30	\$486,069
50-64	70,188	63%	9%	0.417	\$134.30	\$215,446
<b>Males</b>	<b>239,356</b>	<b>72%</b>	-	-	<b>\$167.74</b>	<b>\$7,451,416</b>
18-19	9,629	72%	37%	1.232	167.74	\$525,816
20-25	31,536	72%	48%	0.995	167.74	\$1,815,268
26-29	23,429	72%	46%	0.983	167.74	\$1,273,938
30-34	29,065	72%	38%	0.731	167.74	\$985,359
35-49	71,638	72%	32%	0.647	167.74	\$1,808,114
50-64	74,059	72%	22%	0.53	167.74	\$1,042,922
<b>Total</b>	<b>465,655</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>\$9,482,503</b>

Notes:

<sup>1</sup> DOLWD's 2018 population estimates.

<sup>2</sup> McDowell Group calculations. U.S. Census Bureau's American Community Survey (ACS) 2018 1-Year Estimates.

<sup>3</sup> National rates, The Lewin Group, "Economic Cost of Excessive Alcohol Consumption in the United States, 2006" (2013).

<sup>4</sup> The Lewin Group, "Economic Cost of Excessive Alcohol Consumption in the United States, 2006" (2013).

## Lost Productivity Due to Alcohol Treatment

When individuals are admitted to a medical facility for treatment of alcohol dependence or 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. To estimate that loss, this report quantifies potential earnings forfeited by clients admitted to agencies that receive Alaska Division of Behavioral Health Treatment and Recovery grants for 24-hour detoxification or residential services.

In SFY2019, admission to Alaska 24-hour detoxification and residential treatment services resulted in an estimated loss of potential earnings of \$11.0 million for 2,204 individuals, with \$2.3 million associated with alcohol-related treatment only and \$8.7 million related to individuals receiving treatment for a combination of alcohol and drug misuse. These lost earnings were associated with a total of 89,037 bed days.

**Table 16. 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 <sup>1</sup>	Estimated Lost Earnings
Alcohol Only	222	361	15,126	\$151.48	\$2,291,286
Combination of Alcohol and Drug Treatment	525	916	57,703	\$151.48	\$8,740,850
<b>Alcohol and Drugs</b>	<b>747</b>	<b>1,277</b>	<b>89,037</b>	<b>\$151.48</b>	<b>\$11,032,137</b>

Note:

<sup>1</sup> 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 Alcohol-Related Medical Conditions

In SFY2019, individuals with a primary or secondary diagnosis related to alcohol misuse spent 107,256 days in hospital inpatient (77,740 days) and emergency departments (29,516 days) for treatment of diseases and conditions attributable to these diagnoses. These lost days of work resulted in an estimated \$16.2 million in lost earnings. Individuals for whom the primary diagnose was attributed to alcohol misuse accounted for 11,759 days of lost earnings, or \$1.8 million of this total impact.

**Table 17. Total Length of Stay for Inpatient and ED Treatment of Diseases and Conditions Attributable to Alcohol Misuse (Primary Diagnoses) and Subsequent Lost Potential Earnings, by Gender, SFY 2019**

Gender	Total Inpatient Length of Stay (days) <sup>1</sup>	Total ED Length of Stay (days)*	Total Length of Stay (days)	Applied Alcohol- Attribution Fractions <sup>2</sup>	Annual Average Earnings Daily Rate <sup>3</sup>	Estimated Lost Potential Earnings
Women	19,770	14,208	33,978	4,863	\$151.48	\$736,647
Men	27,179	15,262	42,441	6,893	\$151.48	\$1,044,171
<b>Total</b>	<b>46,949</b>	<b>29,470</b>	<b>76,419</b>	<b>11,759</b>	<b>\$151.48</b>	<b>\$1,780,819</b>

<sup>1</sup> Includes treatment for chronic and acute diagnoses.

<sup>2</sup> McDowell Group calculations based on attribution rates from CDC - Alcohol and Public Health - Alcohol-Related Disease Impacts (ARDI).

<sup>3</sup> 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 (HRFP). DOLWD.

**Table 18. Total Length of Stay for Inpatient and ED Treatment of Diseases and Conditions (777,40 to Alcohol Misuse (Primary and Secondary Diagnoses) and Subsequent Lost Potential Earnings, by Gender, SFY 2019**

Gender	Total Inpatient Length of Stay (days) <sup>1</sup>	Total ED Length of Stay (days)	Total Length of Stay (days)	Applied Alcohol- Attribution Fractions <sup>2</sup>	Annual Average Earnings Daily Rate <sup>3</sup>	Estimated Lost Potential Earnings
Women	135,766	181,498	317,264	42,650	\$151.48	\$6,460,575
Men	162,201	844,889	1,007,090	64,607	\$151.48	\$9,786,632
<b>Total</b>	<b>297,967</b>	<b>1,063,387</b>	<b>1,324,354</b>	<b>107,256</b>	<b>\$151.48</b>	<b>\$16,247,207</b>

<sup>1</sup> Includes treatment for chronic and acute diagnoses.

<sup>2</sup> McDowell Group calculations based on attribution rates from CDC - Alcohol and Public Health - Alcohol-Related Disease Impacts (ARDI).

<sup>3</sup> 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 (HRFP). DOLWD.

## Chapter 3: Vehicle Traffic Collisions

- In 2016, there were 639 alcohol-suspected collisions in Alaska, 6% of the 10,889 total traffic collisions:
  - 307 no apparent injury collisions (48% of alcohol-suspected crashes)
  - 110 property-damage-only collisions (17%)
  - 144 minor injury collisions (22%)
  - 84 possible injury collisions (13%)
  - 74 major injury collisions (11%)
  - 30 fatal collisions (5%)
- In 2016, 726 Alaskans were involved in alcohol-suspected collisions:
  - 332 persons had no apparent injury
  - 178 had minor injuries
  - 86 had major injuries
  - 92 had possible injuries
  - 38 persons involved died
- In 2016, 358 vehicle traffic collisions in Alaska were attributed to suspected alcohol-impaired drivers resulting in property damage only, minor and major injuries, fatalities. These collisions resulted in \$206 million in total costs. Adding impacts on quality of life brings total alcohol-suspected collision costs to \$1.2 billion (2018 dollars).

### Alcohol-Suspected Collisions

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

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

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 alcohol-impaired collisions. National Highway Traffic Safety Administration (NHTSA) estimates of the average costs per collision were used to develop a table of unit costs of alcohol (and/or drug) impaired traffic collisions in Alaska for 2016.

**Table 19. Unit Costs of Suspected Alcohol Impaired Traffic Collisions in Alaska, (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
<b>Total</b>	<b>\$6,145</b>	<b>\$69,359</b>	<b>\$9,567,263</b>	<b>\$16,138,992</b>

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 639 alcohol-suspected collisions, 6% of the 10,889 total traffic collisions. Of the alcohol-suspected collisions, 307 were no apparent injury collisions (48%), 110 were property damage only collisions (17% of alcohol-suspected collisions), 144 minor were injury collisions (22%), 84 were possible injury collisions (13%), 74 were major injury collisions (11%), and 30 were fatal collisions (5%).<sup>9</sup>

DOTPF also reports the number of persons who were involved in alcohol-suspected collisions, including occupants of the impaired driver's car, occupants of other cars, pedestrians, bicyclists, and others. In 2016, there were 726 persons involved in alcohol-suspected collisions; 332 persons had no apparent injury, 178 had minor injuries, 86 had major injuries, 92 had possible injuries, and 38 persons died. The table below shows traffic collisions related to suspected alcohol impaired by injury severity.

**Table 20. Alcohol-Suspected Traffic Collisions and Persons Involved, by Type, Alaska 2016**

Category	Crash Count <sup>1</sup>	Persons Involved
No apparent injury	307	332
Property damage only	110	0
Minor injury	144	178
Possible injury	84	92
Major injury	74	86
Fatality	30	38
<b>Alcohol-suspected crashes</b>	<b>639</b>	<b>726</b>

<sup>1</sup>Crash count does not sum to the total of alcohol-suspected collisions as collisions with no apparent injury and property damage only may overlap.

Source: DOTPF

<sup>9</sup> Crash count does not sum to the total of alcohol-suspected crashes as crashes with no apparent injury and property damage only may overlap.

The table below shows estimated costs for the 358 Alaska alcohol-suspected collisions by type and injury, including property damage only, minor and major injuries, fatalities, and the total cost. Total cost of the alcohol suspected collisions in Alaska in 2016 was \$1.2 billion. This includes \$206 million in various medical, legal and productivity costs, and approximately \$1 billion in costs associated with reduced quality of life.<sup>10</sup>

**Table 21. Number of Alcohol Suspected Traffic Collisions and Cost of Collisions in Alaska, 2016 (2018\$)**

	Property Damage Only	Minor Injury	Major Injury	Fatal	Total
<b>Number of Alaska Impaired Collisions<sup>1</sup></b>	<b>110</b>	<b>144</b>	<b>74</b>	<b>30</b>	<b>358</b>
<b>Type of Costs<sup>2</sup></b>					
Medical	\$0	\$717,067	\$48,148,290	\$563,930	\$49,429,287
Emergency services	\$4,951	\$20,418	\$100,680	\$43,044	\$169,094
Market productivity	\$0	\$673,800	\$40,771,942	\$55,219,104	\$96,664,845
Household productivity	\$10,522	\$215,525	\$11,564,756	\$15,051,110	\$26,841,913
Insurance administration	\$33,423	\$880,898	\$8,724,657	\$1,351,860	\$10,990,838
Workplace costs	\$10,893	\$78,108	\$1,305,838	\$562,411	\$1,957,250
Legal costs	\$0	\$323,450	\$10,143,166	\$5,082,869	\$15,549,485
Congestion costs	\$188,528	\$254,093	\$180,041	\$273,019	\$895,681
Property damage	\$427,686	\$1,238,054	\$1,776,926	\$535,167	\$3,977,832
<b>Sub-Total</b>	<b>\$676,003</b>	<b>\$4,401,413</b>	<b>\$122,716,295</b>	<b>\$78,682,514</b>	<b>\$206,476,225</b>
Quality-adjusted life years (QALYs)	\$0	\$5,586,315	\$585,261,170	\$405,487,247	\$996,334,731
<b>Total</b>	<b>\$676,003</b>	<b>\$9,987,727</b>	<b>\$707,977,465</b>	<b>\$484,169,761</b>	<b>\$1,202,810,956</b>

Note: Possible injuries were not allocated costs.

<sup>1</sup> DOTPF

<sup>2</sup> NHSTA, "The Economic and Societal Impact of Motor Vehicle Crashes, 2010 (Revised)" (2015). <http://www-nrd.nhtsa.dot.gov/pubs/812013.pdf>.

<sup>10</sup> 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

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- In 2017, there were an estimated 41,559 known offenses or arrests in selected categories of crimes. Of these, 12,217 were attributable to alcohol misuse, 29% of all the crimes in those categories. The estimated alcohol-related cost to the criminal justice system is \$106 million.
- In 2017, there were approximately 46,102 victims of the specified offenses in Alaska; 10,449 victims were attributable to alcohol misuse, or approximately 23% of victims. The estimated alcohol-related direct cost to victims of crime is \$111 million, with indirect costs of \$811 million.
- In SFY 2018, Office of Children Services (OCS) expenditures for child abuse and neglect attributable to alcohol misuse totaled an estimated \$39.7 million (or 25% of total OCS spending).

### Criminal Justice

Alcohol misuse is a direct contributor to crimes such as driving under the influence and other violent and nonviolent crimes. Many costs accompany these crimes including the costs of the criminal justice system (police protection and law enforcement, legal and adjudication, and incarceration) and costs to 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 41,559 known offenses or arrests in various categories of crimes in Alaska. Of these, 12,217 were attributable to alcohol misuse, 29% of the specified categories. The offenses with the highest counts attributable to alcohol were driving while intoxicated (3,101), larceny-theft (3,589), aggravated assaults (1,262), and burglary (1,153).

**Table 22. Offenses and/or Arrests Attributable to Alcohol in Alaska, All Ages, 2017**

Type of Offense <sup>1</sup>	Alaska Number of Known Offenses or Arrests	Percent Attributable to Alcohol Misuse <sup>2</sup>	Estimated Offenses/Arrests Attributable to Alcohol Misuse
Criminal homicide	63	47%	30
Rape (rape and attempted)	1,099	28%	308
Other sex offenses	259	22%	57
Aggravated assault	4,353	29%	1,262
Other assaults	4,478	19%	851
Robbery	969	27%	262
Burglary	4,270	27%	1,153
Larceny-theft	17,943	20%	3,589
Motor vehicle theft	4,328	22%	952
Driving under the influence	3,101	100%	3,101
Liquor laws	653	100%	653
Drunkenness	43	100%	43
<b>Total</b>	<b>41,559</b>		<b>12,217</b>

<sup>1</sup> Alaska Department of Public Safety, *Crime in Alaska, 2017(2018)*. [http://www.dps.alaska.gov/statewide/docs/UCR/UCR\\_2018.pdf](http://www.dps.alaska.gov/statewide/docs/UCR/UCR_2018.pdf).

<sup>2</sup> The Lewin Group, *Economic Cost of Excessive Alcohol Consumption in the United States, 2006* (2013).

## Criminal Justice System Costs

Total personnel and other operating costs for the Alaska criminal justice system in 2018 are estimated at \$106.3 million. Criminal homicide represented the largest component of costs at \$19.2 million, followed by aggravated assault (\$17.7 million), and larceny-theft (\$16.8 million).

**Table 23. Criminal Justice System Costs Attributable to Alcohol Misuse by Offense in Alaska, 2018**

Type of Offense	Estimated Alaska Offenses/Arrests Attributable to Alcohol Misuse <sup>1</sup>	Criminal Justice System Cost per Arrest/Offense (Adjusted 2018\$) <sup>3</sup>	Estimated Alaska Alcohol-Related Costs
Criminal homicide	30	\$639,958	\$19,198,740
Rape (rape and attempted)	308	\$43,169	\$13,296,052
Other sex offenses	57	\$43,169	\$2,460,633
Aggravated assault	1,262	\$14,087	\$17,777,794
Other assaults	851	\$14,087	\$11,988,037
Robbery	262	\$22,542	\$5,906,004
Burglary	1,153	\$6,729	\$7,758,537
Larceny-theft	3,589	\$4,694	\$16,846,766
Motor vehicle theft	952	\$6,304	\$6,001,408
Driving under the influence	3,101	\$1,345	\$4,170,845
Liquor laws	653	\$1,345	\$878,285
Drunkenness	43	\$1,345	\$57,835
<b>Total</b>	<b>9,438</b>		<b>\$106,340,936</b>

<sup>1</sup> Alaska Department of Public Safety (2017 data published in 2018)

<sup>2</sup> The Lewin Group, *Economic Cost of Excessive Alcohol Consumption in the United States, 2006* (2013).

<sup>3</sup> 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.

## Crime Victimization

There were approximately 46,102 victims of the specified offenses in Alaska in 2017; 10,449 victims were attributable to alcohol misuse, or approximately 23% of victims.

**Table 24. Victimization Attributable to Alcohol Misuse in Alaska, 2017**

Type of Crime	2017 U.S. Victimization Rate per 1,000 persons 12 years or older <sup>1</sup>	Estimated Number of Alaska Victims <sup>3</sup>	Percent Alcohol Related <sup>4</sup>	Estimated Number of Victims Attributable to Alcohol Misuse
Homicide	--	62 <sup>2</sup>	47%	29
Rape/sexual assault	1.4	853	28%	239
Robbery	2.3	1,401	27%	378
Aggravated assault	3.6	2,192	29%	636
Other assault	13.3	8,100	19%	1539
Theft	30.2	18,392	20%	3678
Burglary	20.6	12,545	27%	3387
Motor vehicle theft	4.2	2,558	22%	563
<b>Total</b>		<b>46,102</b>		<b>10,449</b>

<sup>1</sup> Bureau of Justice Statistics, *Criminal Victimization, 2017* (2018). <https://www.bjs.gov/content/pub/pdf/cv17.pdf>

<sup>2</sup> DPS, *Crime in Alaska, 2017* (2018). [http://www.dps.alaska.gov/statewide/docs/UCR/UCR\\_2018.pdf](http://www.dps.alaska.gov/statewide/docs/UCR/UCR_2018.pdf).

<sup>3</sup> 2018 population data from DOLWD.

<sup>4</sup> The Lewin Group, *Economic Cost of Excessive Alcohol Consumption in the United States, 2006* (2013).

### Victim of Crime Direct Costs

Direct victim of crime costs are defined as the “direct economic losses suffered by victims of crime, including medical care costs, lost earnings, and property loss/damage.” The estimated victim of crime tangible cost for Alaska in 2018 was \$110.6 million. Homicide was the costliest (\$34.9 million), followed by theft (\$27.5 million), and other assaults (\$21.8 million).

**Table 25. Victim of Crime Direct Costs Attributable to Alcohol Misuse in Alaska, 2018**

Type of Offense	Estimated Number of Victims Attributed to Alcohol Misuse	Victim of Crime Direct Cost Per Offense <sup>1</sup>	Estimated Alaska Alcohol-Related Direct Costs
Homicide	29	\$1,202,387 <sup>2</sup>	\$34,869,223
Rape/sexual assault	239	\$9,058	\$2,164,862
Robbery	378	\$5,378	\$2,032,884
Aggravated assault	636	\$14,184	\$9,021,024
Other assault	1539	\$14,184	\$21,829,176
Theft	3678	\$7,483	\$27,522,474
Burglary	3387	\$2,221	\$7,522,527
Motor vehicle theft	563	\$9,967	\$5,611,421
<b>Total</b>	<b>10,449</b>		<b>\$110,573,591</b>

<sup>1</sup> 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.

<sup>2</sup> 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 “indirect losses suffered by victims of crime, including pain and suffering, decreased quality of life, and psychological distress.” The estimated victim of crime intangible cost for Alaska in 2018 was \$811.3 million. Again, homicide was the costliest (\$399.1 million), followed by other assaults (\$228.1 million), and aggravated assaults (\$94.3 million).

**Table 26. Victim of Crime Intangible Costs Attributable to Alcohol Misuse in Alaska, 2018**

Type of Offense	Estimated Number of Victims Attributable to Alcohol Misuse (2017)	Victim of Crime Indirect Cost Per Offense <sup>1</sup>	Estimated Alaska Alcohol-Related Indirect Costs
Homicide	29	\$13,763,139	\$399,131,031
Rape/sexual assault	239	\$311,424	\$74,430,336
Robbery	378	\$35,215	\$13,311,270
Aggravated assault	636	\$148,228	\$94,273,008
Other assault	1,539	\$148,228	\$228,122,892
Theft	3,678	\$16	\$58,848
Burglary	3,387	\$501	\$1,696,887
Motor vehicle theft	563	\$409	\$230,267
<b>Total</b>	<b>10,449</b>		<b>\$811,254,539</b>

<sup>1</sup> 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.

<sup>2</sup> Indirect cost for murder was calculated as the mean value of a statistical life.

## Protective Services

Alcohol misuse is a risk factor for abuse and neglect of children and adults.

### Child Protective Services

In 2016, 9,505 protective services reports (PSR) were screened in by the Office of Children Services (OCS) of which 17% (approximately 1,616 reports) had an alcohol misuse characteristic. Of the 2,068 PSRs that ultimately were substantiated through an initial assessment (IA) investigation, 26% (or 536) had an alcohol misuse characteristic.

As of July 2017, 3,040 children were living outside their homes and 33% (or 1,010) had been removed due to parental alcohol misuse. Cases representing a total of 1,676 children had an IA, and 45% of those (representing 756 children) had a documented alcohol misuse characteristic.<sup>11</sup>

Applying these proportions to spending for foster care and protective services investigations results in an estimate for spending on child protective services attributed to alcohol misuse of \$39.7 million (or 25% of total spending).

<sup>11</sup> DHSS, *Health Impacts of Alcohol Misuse in Alaska*, State of Alaska Epidemiology Bulletin, May 7, 2018. P.18.

**Table 27. Summary of OCS Expenditures Attributable to Alcohol Misuse, (\$Millions), SFY2018**

	Undesignated General Fund + Designated General Fund	Other Funds	Federal Funds	Total
<b>Formula Expenditures</b>				
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
<b>Portion Attributable to Alcohol Misuse (33%)</b>	<b>\$15,994,044</b>	<b>\$1,104,226</b>	<b>\$7,825,323</b>	<b>\$25,123,561</b>
<b>Non-Formula Expenditures</b>				
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
<b>Portion Attributable to Alcohol Misuse (17%)</b>	<b>\$7,949,829</b>	<b>\$608,379</b>	<b>\$6,030,988</b>	<b>\$14,594,466</b>
<b>All Spending</b>	<b>\$95,230,500</b>	<b>\$7,530,900</b>	<b>\$59,189,500</b>	<b>\$161,981,800</b>
<b>Total Attributable to Alcohol Misuse</b>	<b>\$23,943,873</b>	<b>\$1,712,605</b>	<b>\$13,856,311</b>	<b>\$39,718,027</b>

Due to rounding, some rows may not sum to total.

Source: State of Alaska 2018 Actual Expenditures, [https://omb.alaska.gov/ombfiles/20\\_budget/HSS/Proposed/15\\_rdu486.pdf](https://omb.alaska.gov/ombfiles/20_budget/HSS/Proposed/15_rdu486.pdf). Additional data or background on formula expenditures and non-formula expenditures can be found at: <http://dhss.alaska.gov/ocs/Pages/default.aspx>, [https://omb.alaska.gov/ombfiles/19\\_budget/HSS/Proposed/rdu486.pdf](https://omb.alaska.gov/ombfiles/19_budget/HSS/Proposed/rdu486.pdf), and <https://omb.alaska.gov/html/budget-report/department-table.html?dept=HSS&fy=19&type=Enacted>

## Title 47 Protective Custody

The Title 47 Protective Custody Statute allows the State of Alaska to take people who are incapacitated by alcohol 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 attributed to alcohol misuse. In SFY2017, the Adult Protective Services Program received 7,494 reports of harm and investigated 1,757 of those reports.

- Hospital-related medical costs to treat conditions and diseases with a primary diagnosis only associated with alcohol misuse totaled \$134.2 million in 2018, including \$79.8 million in inpatient charges, \$34.0 million in emergency department charges, and \$20.3 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 alcohol misuse totaled \$1.2 billion in 2018, including \$940.6 million in inpatient charges, \$126.4 million in emergency department charges, and \$125.7 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 alcohol misuse.
- In SFY2019, Division of Behavioral Health funding for alcohol treatment (alcohol only or alcohol and drug combined) to treatment and recovery grantee agencies was an estimated \$6.4 million.
- The cost of legal prescription drugs to treat alcohol misuse is estimated to represent 2.2% of Alaska’s total prescription drug sales, or \$15.7 million.
- Of Alaska’s total estimated Medicaid costs for skilled nursing facilities and long term care in SFY2019, alcohol misuse accounted for an estimated 1% or \$1.4 million.

## Medical Costs

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

### Primary Diagnosis

#### INPATIENT

Some of the health problems caused by alcohol misuse require admission to a hospital. In 2018, unduplicated inpatient charges in Alaska attributable to a primary diagnosis of alcohol misuse totaled \$79.8 million. The number of admissions attributable to alcohol misuse totaled 1,488. The total length of hospital stays resulting from those admissions was 9,320 days.

**Table 28. Unduplicated Alaska Inpatient Hospital Admissions, Length of Stay, and Total Charges Alcohol Attributable, Primary Diagnosis Only, 2018**

Attributable	Admissions			Length of Stay (days)			Total Charges
	Female	Male	Total	Female	Male	Total	
Chronic Disease	576	859	1,435	3,108	5,954	9,062	\$76,762,850
Acute	23	30	53	108	150	258	\$3,079,471
<b>TOTAL</b>	<b>599</b>	<b>889</b>	<b>1,488</b>	<b>3,216</b>	<b>6,104</b>	<b>9,320</b>	<b>\$79,842,321</b>

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

Table 29. Inpatient Hospital Admissions, Length of Stay, and Charges, Primary Diagnosis, Chronic and Acute, HFDR Total and Attributable to Alcohol, Alaska, 2018

Alcohol Related Attribution Group	Age	Total Inpatient Stays			Attributable Fraction	Attributable to Alcohol		
		# of Admissions	Length of Stay (days)	Total Charges (\$)		# of Admissions	Length of Stay (days)	Total Charges (\$)
<b>Chronic Diagnoses or Conditions</b>								
Acute pancreatitis	All	171	658	6,888,338	24%	41	158	1,653,201
Alcohol abuse	All	74	202	1,624,046	100%	74	202	1,624,046
Alcohol dependence syndrome	All	813	4,875	36,196,785	100%	813	4875	36,196,785
Alcohol polyneuropathy	All	3	19	181,257	100%	3	19	181,257
Alcohol psychosis	All	11	275	713,663	100%	11	275	713,663
Alcohol use complicating pregnancy	All	5	12	92,210	100%	5	12	92,210
Alcohol-induced chronic pancreatitis	All	6	13	171,140	100%	6	13	171,140
Alcoholic cardiomyopathy	All	7	91	1,269,520	100%	7	91	1,269,520
Alcoholic gastritis	All	42	148	1,756,236	100%	42	148	1,756,236
Alcoholic liver disease	All	240	1,864	19,762,031	100%	240	1864	19,762,031
Breast cancer, female	All	29	99	1,776,020	0.2%	0	1	17,760
Cholelithiasis	All	390	1,448	25,583,290	-1%	-4	-14	(255,833)
Chronic hepatitis	All	1	3	28,886	2%	0	0	289
Chronic pancreatitis	All	20	77	740,916	84%	17	65	622,369
Cirrhosis of liver without mention of alcohol	All	16	84	889,847	40%	6	34	355,939
Degeneration of nervous system due to alcohol	All	8	251	383,485	100%	8	251	383,485
Diabetes mellitus	35+	614	3,428	34,480,229	5%	20	143	1,357,713
Diseases of esophagus, stomach, and duodenum	35+	589	2,753	38,332,442	10%	54	253	3,536,378
Esophageal cancer	All	25	374	3,855,503	5%	1	19	192,775
Fetal alcohol syndrome	All	2	41	40,187	100%	2	41	40,187
Hypertension	All	1,069	6,638	83,527,091	2%	17	102	1,317,476
Ischemic heart disease	All	1,350	6,389	194,706,732	-1%	-14	-64	(1,947,067)
Laryngeal cancer	All	8	82	1,168,212	11%	1	8	120,513
Liver cancer	All	42	320	4,424,153	8%	3	24	334,011

Alcohol Related Attribution Group	Age	Total Inpatient Stays			Attributable Fraction	Attributable to Alcohol		
		# of Admissions	Length of Stay (days)	Total Charges (\$)		# of Admissions	Length of Stay (days)	Total Charges (\$)
<b>Chronic Diagnoses or Conditions (cont'd)</b>								
Low birth weight, prematurity, intrauterine growth retardation or death	All	214	2,003	29,965,230	2%	4	40	599,305
Malignant neoplasm of stomach	35+	32	275	3,653,911	20%	6	50	655,696
Oropharyngeal cancer	All	15	122	1,243,171	3%	0	4	37,295
Other and unspecified chronic liver disease	35+	14	22	328,010	50%	4	11	164,005
Portal hypertension	All	12	30	602,171	40%	5	12	240,869
Prostate cancer	All	82	253	5,598,996	1%	1	3	55,990
Psoriasis	All	3	17	139,785	2%	0	0	2,796
Stroke hemorrhagic	All	184	1,992	25,111,152	8%	11	124	1,524,405
Stroke ischemic	All	1,279	10,093	107,139,10	3%	27	210	2,264,797
Supraventricular cardiac dysrhythmia	All	513	1,998	37,504,977	5%	23	90	1,721,612
<b>Chronic Diagnosis Total</b>	-	<b>7,877</b>	<b>46,949</b>	<b>\$669,878,726</b>	-	<b>1,435</b>	<b>9,062</b>	<b>\$76,762,850</b>
<b>Acute Diagnoses or Conditions</b>								
Alcohol poisoning	All	11	41	\$854,046	100%	11	41	\$854,046
Pneumonia and influenza	35+	1,079	4,734	49,085,741	5%	36	181	1,874,430
Respiratory tuberculosis	35+	10	67	419,875	25%	2	13	67,982
Suicide by and exposure to alcohol	All	4	23	283,013	100%	4	23	283,013
<b>Acute Diagnosis Total</b>	-	<b>1,104</b>	<b>4,865</b>	<b>\$50,642,675</b>	-	<b>53</b>	<b>258</b>	<b>\$3,079,471</b>
<b>Chronic and Acute Diagnoses Total</b>	-	<b>8,981</b>	<b>51,814</b>	<b>\$720,521,401</b>	-	<b>1,488</b>	<b>9,320</b>	<b>\$79,842,321</b>

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

## EMERGENCY DEPARTMENT (ED) COSTS

Some patients with health problems caused by alcohol misuse receive treatment in the ED. In 2018, unduplicated emergency department charges in Alaska attributable to alcohol misuse primary diagnosis totaled \$34.0 million. The number of visits attributable to alcohol misuse totaled 11,688. The total length of hospital stays resulting from those visits was 11,859 days.

**Table 30. Unduplicated Alaska Emergency Department Visits, Length of Stay, and Total Charges Alcohol Attributable, Primary Diagnosis Only, 2018**

Attributable	Visits			Length of Stay (days)			Total Charges
	Female	Male	Total	Female	Male	Total	
Chronic Disease	4,800	6,734	11,534	4,891	6,806	11,696	\$33,261,901
Acute	61	51	154	63	52	163	\$745,982
<b>TOTAL</b>	<b>4,861</b>	<b>6,785</b>	<b>11,688</b>	<b>4,954</b>	<b>6,858</b>	<b>11,859</b>	<b>\$34,007,883</b>

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

Table 31. Emergency Department Visits, Length of Stay, and Charges, Primary Diagnosis, Chronic and Acute, HFDR Total and Attributable to Alcohol, Alaska, 2018

Alcohol Related Attribution Group	Age	Total Visits			Attributable Fraction	Attributable to Alcohol		
		# of Visits	Length of Stay (days)	Total Charges (\$)		# of Visits	Length of Stay (days)	Total Charges (\$)
<b>Chronic Diagnoses or Conditions</b>								
Acute pancreatitis	All	349	349	\$2,532,093	24%	84	84	\$607,702
Alcohol abuse	All	6,212	6,220	12,991,743	100%	6212	6220	12,991,743
Alcohol dependence syndrome	All	3,180	3,187	11,755,221	100%	3180	3187	11,755,221
Alcohol polyneuropathy	All	5	5	14,040	100%	5	5	14,040
Alcohol psychosis	All	1,185	1,185	3,453,411	100%	1185	1185	3,453,411
Alcohol use complicating pregnancy	All	14	14	29,177	100%	14	14	29,177
Alcohol-induced chronic pancreatitis	All	33	33	162,148	100%	33	33	162,148
Alcoholic cardiomyopathy	All	4	4	30,178	100%	4	4	30,178
Alcoholic gastritis	All	291	291	1,275,849	100%	291	291	1,275,849
Alcoholic liver disease	All	184	184	1,072,370	100%	184	184	1,072,370
Breast cancer, female	All	19	19	136,015	1%	0	0	1,360
Cholelithiasis	All	727	733	4,714,038	-1%	-7	-7	-47,140
Chronic hepatitis	All	2	2	17,832	2%	0	0	357
Chronic pancreatitis	All	66	67	361,044	84%	55	56	303,277
Cirrhosis of liver without mention of alcohol	All	23	23	176,366	40%	9	9	70,546
Degeneration of nervous system due to alcohol	All	2	2	9,486	100%	2	2	9,486
Diabetes mellitus	35+	1,582	3,730	6,119,126	5%	64	171	238,101
Diseases of esophagus, stomach, and duodenum	35+	1,452	1,515	5,859,476	10%	84	90	399,169
Esophageal cancer	All	12	12	85,699	5%	1	1	4,285
Fetal alcohol syndrome	All	8	8	24,846	100%	8	8	24,846
Hypertension	All	2,085	2,328	7,666,912	2%	30	35	111,640
Ischemic heart disease	All	469	579	4,351,858	-1%	-5	-6	-43,519
Laryngeal cancer	All	4	4	960	11%	0	0	106
Liver cancer	All	9	9	71,936	8%	1	1	5,617

Alcohol Related Attribution Group	Age	Total Visits			Attributable Fraction	Attributable to Alcohol		
		# of Visits	Length of Stay (days)	Total Charges (\$)		# of Visits	Length of Stay (days)	Total Charges (\$)
<b>Chronic Diagnoses or Conditions (continued)</b>								
Low birth weight, prematurity, intrauterine growth retardation or death	All	5	5	17,795	2%	0	0	356
Malignant neoplasm of stomach	35+	2	2	21,200	20%	0	0	4,240
Oropharyngeal cancer	All	8	8	54,273	3%	0	0	1,628
Other and unspecified chronic liver disease	35+	38	38	271,818	50%	11	11	79,078
Prostate cancer	All	15	15	23,528	1%	0	0	235
Psoriasis	All	44	44	59,042	2%	1	1	1,181
Stroke hemorrhagic	All	137	137	1,671,747	8%	8	8	95,095
Stroke ischemic	All	529	1,174	6,107,415	3%	11	23	126,075
Supraventricular cardiac dysrhythmia	All	1,492	1,875	10,530,953	5%	68	84	484,046
<b>Chronic Diagnosis Total</b>	<b>-</b>	<b>20,187</b>	<b>23,801</b>	<b>\$81,669,596</b>	<b>-</b>	<b>11,534</b>	<b>11,696</b>	<b>\$33,261,901</b>
<b>Acute Diagnoses or Conditions</b>								
Accidental falls	All	2	2	\$7,769	32%	1	1	\$2,486
Alcohol poisoning	All	25	10	122,311	100%	25	25	122,311
Homicide and injury purposely inflicted by other persons	All	2	0	8,632	47%	1	1	4,057
Occupational and machine injuries	All	3	3	3,975	18%	1	1	716
Pneumonia and influenza	35+	5,445	2,761	19,408,747	5%	122	131	575,848
Suicide by and exposure to alcohol	All	5	2	40,565	100%	5	5	40,565
<b>Acute Diagnosis Total</b>	<b>-</b>	<b>5,482</b>	<b>5,669</b>	<b>\$19,591,998</b>	<b>-</b>	<b>154</b>	<b>163</b>	<b>\$745,982</b>
<b>Chronic and Acute Diagnoses Total</b>	<b>-</b>	<b>25,669</b>	<b>29,470</b>	<b>\$101,261,594</b>	<b>-</b>	<b>11,688</b>	<b>11,859</b>	<b>\$34,007,883</b>

Source: Alaska Hospital Facilities Data Reporting Program (HFDR). ARDI alcohol 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 alcohol misuse totaled \$20.3 million. The number of visits attributable to alcohol misuse totaled 10,519. The total length of hospital stays resulting from those visits was 31,004 days.

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

Attributable	Visits			Length of Stay (days)			Total Charges
	Female	Male	Total	Female	Male	Total	
Chronic Disease	5,095	5,280	10,375	11,247	19,590	30,837	\$20,136,380
Acute	76	68	144	90	77	167	\$212,406
<b>TOTAL</b>	<b>5,171</b>	<b>5,348</b>	<b>10,519</b>	<b>11,337</b>	<b>19,667</b>	<b>31,004</b>	<b>\$20,348,786</b>

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

Table 33. Outpatient (except Emergency Department) Visits, Length of Stay, and Charges, Primary Diagnosis, Chronic and Acute, HFDR Total and Attributable to Alcohol, Alaska, 2018

Alcohol Related Attribution Group	Age	Total			Attributable Fraction	Attributable to Alcohol		
		# of Visits	Length of Stay (days)	Total Charges (\$)		# of Visits	Length of Stay (days)	Total Charges (\$)
<b>Chronic Diagnoses or Conditions</b>								
Acute pancreatitis	All	261	279	817,569	24%	63	67	196,216
Alcohol abuse	All	2,223	2,771	2,281,585	100%	2223	2771	2,281,585
Alcohol dependence syndrome	All	2,441	14,167	4,457,013	100%	2441	14167	4,457,013
Alcohol polyneuropathy	All	20	20	13,067	100%	20	20	13,067
Alcohol psychosis	All	278	279	418,830	100%	278	279	418,830
Alcohol use complicating pregnancy	All	55	69	99,035	100%	55	69	99,035
Alcohol-induced chronic pancreatitis	All	11	11	40,126	100%	11	11	40,126
Alcoholic cardiomyopathy	All	208	210	305,346	100%	208	210	305,346
Alcoholic gastritis	All	48	49	123,607	100%	48	49	123,607
Alcoholic liver disease	All	876	927	1,376,825	100%	876	927	1,376,825
Breast cancer, female	All	7,590	16,262	27,879,597	1%	76	163	278,796
Cholelithiasis	All	2,456	2,558	29,110,673	-1%	-25	-26	(291,107)
Chronic hepatitis	All	47	47	116,087	2%	1	1	1,577
Chronic pancreatitis	All	156	156	282,082	84%	131	131	236,949
Cirrhosis of liver without mention of alcohol	All	789	1,071	1,258,347	40%	316	428	503,339
Degeneration of nervous system due to alcohol	All	11	11	8,252	100%	11	11	8,252
Diabetes mellitus	35+	22,510	33,616	16,840,962	5%	1,036	1,566	762,961
Diseases of esophagus, stomach, and duodenum	35+	9,718	9,987	35,298,039	10%	776	801	2,877,999
Esophageal cancer	All	570	1,044	1,403,081	5%	29	52	70,154
Fetal alcohol syndrome	All	80	274	87,165	100%	80	274	87,165
Fetus and newborn affected by maternal use of alcohol	All	7	7	3,288	100%	7	7	3,288
Hypertension	All	23,205	24,255	25,643,862	2%	343	360	394,975
Ischemic heart disease	All	7,973	28,800	67,358,230	-1%	-80	-288	(673,582)
Laryngeal cancer	All	257	492	398,799	11%	27	53	42,571

Alcohol Related Attribution Group	Age	Total			Attributable Fraction	Attributable to Alcohol		
		# of Visits	Visits Length of Stay (days)	Total Charges (\$)		# of Visits	Length of Stay (days)	Total Charges (\$)
<b>Chronic Diagnoses or Conditions</b>								
Liver cancer	All	839	1,065	3,654,337	8%	64	81	279,770
Low birth weight, prematurity, intrauterine growth retardation or death	All	491	512	510,329	2%	10	10	10,207
Malignant neoplasm of stomach	35+	656	825	1,502,977	20%	130	164	298,889
Oropharyngeal cancer	All	773	1,436	2,435,429	3%	23	43	73,063
Other and unspecified chronic liver disease	35+	1,392	1,392	2,481,910	50%	598	598	1,087,277
Portal hypertension	All	40	40	262,850	40%	16	16	105,140
Prostate cancer	All	3,713	669,207	8,176,899	1%	37	6692	81,766
Psoriasis	All	1,650	1,937	1,183,473	2%	33	39	23,669
Stroke hemorrhagic	All	214	1,604	956,037	8%	11	79	45,668
Stroke ischemic	All	4,140	18,885	14,453,475	3%	85	405	299,938
Supraventricular cardiac dysrhythmia	All	9,009	13,050	90,568,924	5%	416	606	4,216,007
<b>Chronic Diagnosis Total</b>		<b>104,707</b>	<b>847,315</b>	<b>\$341,808,106</b>	<b>-</b>	<b>10,375</b>	<b>30,837</b>	<b>\$20,136,380</b>
<b>Acute Diagnoses or Conditions</b>								
Accidental falls	All	6	34	\$3,044	32%	2	11	974
Alcohol poisoning	All	11	11	26,149	100%	11	11	26,149
Homicide and injury purposely inflicted by other persons	All	2	2	763	47%	1	1	359
Motor-vehicle traffic crashes	All	3	3	2,995	30%*	1	1	553
Occupational and machine injuries	All	1	1	672	18%	0	0	121
Pneumonia and influenza	35+	4,457	4,809	4,557,704	5%	121	136	157,903
Respiratory tuberculosis	35+	38	38	32,524	25%	5	5	4,095
Suicide and self-inflicted injury	All	1	1	295	23%	0	0	68
Suicide by and exposure to alcohol	All	2	2	22,184	100%	2	2	22,184
<b>Acute Diagnosis Total</b>		<b>4,521</b>	<b>4,901</b>	<b>\$4,646,330</b>	<b>-</b>	<b>144</b>	<b>167</b>	<b>\$212,406</b>
<b>Chronic and Acute Diagnoses Total</b>		<b>109,228</b>	<b>852,216</b>	<b>\$346,454,436</b>		<b>10,519</b>	<b>31,004</b>	<b>\$20,348,786</b>

\*Average attribution rate across all age ranges.

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

## Primary and Secondary Diagnosis

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

**Table 34. Duplicated Alaska Inpatient Hospital Admissions, Emergency Department Visits, and Outpatient Visits, Length of Stay, and Total Charges Alcohol Attributable, Primary and Secondary Diagnoses, 2018**

Attributable	Admissions/Visits			Length of Stay (days)			Total Charges
	Female	Male	Total	Female	Male	Total	
<b>Inpatient</b>							
Chronic Disease	4,375	5,964	10,338	29,329	46,657	75,985	\$795,282,431
Acute	669	802	1,481	5,694	8,255	13,949	\$145,355,834
<b>Inpatient Total</b>	<b>5,044</b>	<b>6,766</b>	<b>11,819</b>	<b>35,023</b>	<b>54,912</b>	<b>89,934</b>	<b>\$940,638,265</b>
<b>Emergency Department</b>							
Chronic Disease	8,805	11,723	20,528	9,221	11,982	21,203	\$82,050,364
Acute	5,539	5,926	11,464	5,579	5,965	11,544	\$44,342,814
<b>Emergency Department Total</b>	<b>14,344</b>	<b>17,649</b>	<b>31,992</b>	<b>14,800</b>	<b>17,947</b>	<b>32,747</b>	<b>\$126,393,178</b>
<b>Outpatient</b>							
Chronic Disease	11,936	12,761	24,697	20,539	29,913	50,453	\$103,311,961
Acute	1,905	1,603	3,508	3,400	2,406	5,806	\$22,398,549
<b>Outpatient Total</b>	<b>13,841</b>	<b>14,364</b>	<b>28,205</b>	<b>23,939</b>	<b>32,319</b>	<b>56,259</b>	<b>\$125,710,510</b>
<b>TOTAL</b>	<b>33,229</b>	<b>38,779</b>	<b>72,016</b>	<b>73,762</b>	<b>105,178</b>	<b>178,940</b>	<b>\$1,192,741,953</b>

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

## Costs of Treating Alcohol Misuse

Some individuals who are alcohol or drug dependent need detoxification, treatment, and/or support services. In SFY2019, agencies receiving DBH treatment and recovery grants logged 72,829 bed days, 15,126 for alcohol-only and 57,703 for treatment of alcohol combined with drugs (does not include drug-only treatment) delivered to approximately 1,277 patients. Combined, general fund DBH payments to grantees for this care totaled \$6.4 million

**Table 35. Number of Bed Use/Day and Count by Gender for Alcohol and Alcohol/Drug Treatment, SFY2019**

Substance Treated	Female Count	Male Count	# of Bed Use	Total DBH Cost <sup>1</sup>
Alcohol Only	222	361	15,126	\$2,577,249
Alcohol and Drug	525	916	57,703	\$3,862,838
<b>Total</b>	<b>747</b>	<b>1,277</b>	<b>72,829</b>	<b>\$6,440,087</b>

<sup>1</sup> Based on a five-year average.

Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System.

## Prescription Drugs

Prescription drugs play a role in treating the conditions, disorders, and diseases caused by or related to alcohol misuse. The 1998 NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992*, calculated that 2.2% of total U.S. prescription drug costs were associated with treatment of alcohol misuse. The Kaiser Family Foundation tracks annual prescription drug sales by state. The Foundation estimates Alaska prescription drug sales totaled \$714 million in 2018. Based on the national figure of 2.2%, the amount attributable to alcohol totals \$15.7 million.

## Nursing Home/Long-Term Care Costs

Alcohol misuse among residents of skilled nursing facilities (SNF) and long-term care (LTC) facilities increases the cost of care and may even cause declines in function that result in a move to these types of facilities.

In SFY2019, annual SNF and LTC bed days totaled 11,019 for 918 individuals with \$142,602,689 paid for by Medicaid. Of the total estimated Medicaid costs for SNF and LTC bed days, alcohol misuse is estimated to account for 1% or \$1.4 million.

**Table 36. Summary of Annual SNF/LTC Bed Days and Costs, SFY2019**

	Total
Medicaid SNF/LTC bed days	11,019
Medicaid SNF/LTC costs	\$142,602,689
Percent attributed to alcohol misuse <sup>1</sup>	1%
<b>Estimated Total SNF/LTC costs attributable to alcohol misuse</b>	<b>\$1,426,027</b>

<sup>1</sup> NIDA, *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992*.

Source: Alaska Division of Senior and Disability Services. Estimates by McDowell Group.

## Chapter 6: Fetal Alcohol Spectrum Disorders

- Approximately 47,860 people have Fetal Alcohol Spectrum Disorders (FASD) in Alaska, including 2,950 who have Fetal Alcohol Syndrome (FAS).
- For those with FAS, the estimated annual cost of services, including home and residential care associated with mental disability, medical equipment, special education, and lost productivity, is \$35.4 million.
- For 2018, the estimated average annual cost for caregivers of children, youth and adults with FASD, from day of birth to 53 years was approximately \$21,079 per individual, suggesting a total annual cost of \$1 billion in Alaska.
- The total estimated cost to conduct an FASD assessment of 139 Alaskans in 2018 was \$879,731.
- Between 2013 and 2017, 72,964 Alaska Screening Tool (AST) screenings were conducted, of which 5,833 screenings (8%) were positive for FASD. These screenings were conducted on 4,876 individuals (some individuals were screened more than once), and the total billed cost was \$226,787.
- Total Medicaid billable services for all diagnoses for the individuals who screened positive for FASD on the AST to receive treatment were \$48.9 million between 2013 and 2017, or an average of \$9.8 million per year.
- Among those individuals who screened positive for FASD on the AST IN 2017:
  - 11% were homeless, representing about \$4.7 million in services.
  - 3% lived in a homeless shelter, at an estimated total annual cost of \$183,960.
  - 6% were in foster care and received \$1.5 million in foster care services.
  - 3% were in a Department of Corrections facility at a cost of \$1,796,927.
- In 2018, approximately \$1 million in unduplicated hospital charges were attributable to individuals with FASD primary or secondary diagnoses including:
  - \$1,024,302 for inpatient care.
  - \$1,566 for emergency department care.
  - \$21,491 for outpatient care.
- In SFY2018, treatment costs for 262 Medicaid beneficiaries with FASD diagnosis codes were \$900,000. Total care costs (such as care for chronic diseases) for the 262 Medicaid beneficiaries was \$11.5 million. This amounts to \$44,000 per Alaska Medicaid enrollee or four times the average spending for an Alaska enrollee.
- Approximately 550 students receiving special education services in Alaska represent a special education cost of \$3.9 million.

Exposure to alcohol during pregnancy can cause a variety of birth defects, known as fetal alcohol spectrum disorders (FASD), which include:

- Fetal Alcohol Syndrome (FAS)
- Partial FAS (PFAS)
- Fetal alcohol effects (FAE)
- Alcohol-related neurodevelopmental disorder (ARND)
- Other alcohol-related birth defects (ARBD)

Fetal Alcohol Syndrome (FAS) was first identified in the United States in 1973. The effects of fetal alcohol exposure range from morphological abnormalities to mental impairment. Features of the syndrome include growth deficiency, anomalies of the brain structure and function (including intellectual deficits), and abnormalities of the head and face. FAS can also include neurological abnormalities, developmental delays, and behavioral dysfunction. A study in 1994 found that approximately 58% of children born with FAS are later diagnosed as developmentally disabled.<sup>12</sup>

Often, children with fetal alcohol disorders are not identified until they reach school age or later, as symptoms do not become apparent until later childhood developmental stages. As a result, FASD is often underreported. FASD symptoms can include difficulties with attention, memory, and problem solving. Heart, liver, and kidney disease, as well as vision and hearing problems, are also common among children with FASD.<sup>13</sup>

People affected by FASD experience lifetime effects, and the cost of caring for these individuals can be significant. Needs can range from neonatal care for low birth weight to special speech therapy, behavioral management, or residential care for adults with FASD. Costs addressed in this report include those for medical treatment, education, social services, transportation, and parent-productivity losses. The security of the individual's condition, age, and relationship of the individual to the caregiver (biological, adoptive, foster) are significant determinants of costs.

## FAS and FASD Prevalence

In a cross-sectional study of 13,146 first grade children in four regions of the United States between 2010 and 2016, the estimated weighted prevalence of FASD ranged from 31.1 to 98.5 per 1,000 children<sup>14</sup>. The next table displays the estimated percentage of individuals with specific types of FASD from eight samples studied in four different U.S. communities. Averaged across all the sites, 0.4% of the population had FAS, 2.8% had partial fetal alcohol syndrome, and 3.3% had alcohol-related neurodevelopmental disorder, for a total of 6.5% with some form of FASD.<sup>15</sup>

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<sup>12</sup> Streissguth, A. (1994). A Long-Term Perspective of FAS. *Alcohol Health & Research World* 18(1):74-81.

<sup>13</sup> National Organization on Fetal Alcohol Syndrome, *What is FAS/FASD?*, [www.nofas.org/faqs.aspx?id=9](http://www.nofas.org/faqs.aspx?id=9)

<sup>14</sup> May PA, Chambers CD, Kalberg WO, et al. Prevalence of Fetal Alcohol Spectrum Disorders in 4 US Communities. *JAMA*. 2018;319(5):474-482. doi:10.1001/jama.2017.21896

<sup>15</sup> May PA, Chambers CD, Kalberg WO, et al. Prevalence of Fetal Alcohol Spectrum Disorders in 4 US Communities. *JAMA*. 2018;319(5):474-482. doi:10.1001/jama.2017.21896

**Table 37. Estimated Weighted Prevalence (Percent) for Specific Classifications of FASDs, Eight Samples at Four U.S. Communities**

Region	Fetal Alcohol Syndrome (%)	Partial Fetal Alcohol Syndrome (%)	Alcohol-Related Neurodevelopmental Disorder (%)	Total Fetal Alcohol Spectrum Disorders (%)
Midwestern City 1	0.8	3.1	1.0	4.9
Midwestern City 2	0.0	0.8	2.5	3.4
Rocky Mountain City 1	0.7	2.2	3.8	6.7
Rocky Mountain City 2	0.5	5.9	3.5	9.9
Southeastern County 1	0.3	1.4	5.0	6.7
Southeastern County 2	0.4	0.9	1.8	3.1
Pacific Southwestern City 1	0.2	3.9	4.9	9.0
Pacific Southwestern City 2	0.5	4.1	3.8	8.4
<b>Average</b>	<b>0.4</b>	<b>2.8</b>	<b>3.3</b>	<b>6.5</b>

Source: May PA, Chambers CD, Kalberg WO, et al. Prevalence of Fetal Alcohol Spectrum Disorders in 4 US Communities. *JAMA*. 2018;319(5):474-482. doi:10.1001/jama.2017.21896

Applying these averages to Alaska’s 2018 population of 736,239 indicates that approximately 47,860 people have FASD in Alaska.

**Table 38. Application of FASD Prevalence Classifications to Alaska’s Population, 2018**

Region	Prevalence (%)	Population
Fetal Alcohol Syndrome	0.4	2,950
Partial Fetal Alcohol Syndrome	2.8	20,620
Alcohol-related Neurodevelopmental Disorder	3.3	24,300
<b>Total Fetal Alcohol Spectrum Disorder</b>	<b>6.5</b>	<b>47,860</b>
<b>Alaska Total Population</b>		<b>736,239</b>

Source: May PA, Chambers CD, Kalberg WO, et al. Prevalence of Fetal Alcohol Spectrum Disorders in 4 US Communities. *JAMA*. 2018;319(5):474-482. doi:10.1001/jama.2017.21896. McDowell Group calculations

The *Economic Costs of Excessive Alcohol Consumption in the United States, 2006 (2013 Update)* estimates the average annual cost of treatment for a person with FAS (all ages) at \$11,985 (2018 dollars). Applying this average to 2,950 people with FAS in Alaska suggests the total annual cost of services, including home and residential care associated with mental disability, medical equipment, special education, and lost productivity is \$35.4 million.

*The Burden of Prenatal Exposure to Alcohol (2009)* estimates the average annual cost for caregivers of children, youth and adults with FASD, from day of birth to 53 years was approximately \$21,079 (2018 dollars) per individual. Key cost components included medical, education, social services, out-of-pocket costs, and productivity losses. Applying this amount to the estimated Alaska population with FASD suggests an annual cost of \$1 billion.

## FAS Assessments

During SFY2018, FASD assessments were conducted on 139 individuals. FASD diagnostic team include an interdisciplinary clinical team. In Alaska, teams are required to follow the University of Washington's 4-Digit Diagnostic Code process. The process includes a range of assessments with a pediatrician, an occupational therapist, a psychologist, a speech-language pathologist, a social worker, a family advocate, and a public health professional. In 2005, the University of Alaska Anchorage Institute for Social and Economic Research estimated that FASD assessments cost an average of \$4,821 (or \$6,329 in 2018 dollars).<sup>16</sup> Total estimated cost to conduct the 139 FASD assessments 2018 is, therefore, \$879,731.

## FASD Screenings

The Alaska Screening Tool (AST) screens for substance misuse, mental illness, co-occurring substance misuse and mental illness, traumatic brain injury, and FASD.<sup>17</sup> All behavioral health grantee providers were required to administer and submit the AST as a condition of their grant award from the Alaska Division of Behavioral Health.<sup>18</sup> Between 2013 and 2017, 72,964 screenings were conducted, of which 5,833 (8%) were positive for FASD. These screenings were conducted with 4,876 individuals, some of whom had multiple intakes, and therefore multiple screenings. The AST billing rate is \$38.88, resulting in a total cost for screenings with a positive FASD of \$226,787. Additional demographic data on those with a positive FASD results may be found in Appendix B.

**Table 39. Alaska Screening Tool (AST): Total Screenings, Total Screened FASD Positive, Percentage of Screenings Positive for FASD, and Unique Number of Clients, 2013-2017**

Year	Total Number of AST Screenings	Total AST with FASD Screened Positive	Percentage of FASD Screening Positive Overall All Screenings	Number of Unique Clients
2013	16,259	1,301	8.0%	1,209
2014	14,727	1,159	7.9%	1,062
2015	13,529	1,061	7.8%	995
2016	13,797	1,128	8.2%	1,034
2017	14,652	1,184	8.1%	1,054
<b>Total</b>	<b>72,964</b>	<b>5,833</b>	<b>8.0%</b>	<b>4,876</b>
<b>Average Per Year</b>	<b>14,593</b>	<b>1,167</b>	<b>8.0%</b>	<b>1,876</b>

Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System [Data file from AKAIMS FASD\_Screening\_Cost].

Retrieved from [https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD\\_Screening\\_Cost](https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD_Screening_Cost).

Based on Medicaid billable rates, the cost for treatment (for all diagnoses) for those individuals who screened positive for FASD on the AST totaled \$48.9 million between 2013 and 2017, or \$9.8 million per year.

<sup>16</sup> Behavioral Health Research & Services, *FAS Evaluation, Cost of FASD Diagnostic Process in Alaska*. University of Alaska Anchorage, February 2005.

<sup>17</sup> Note that a screening is not the same as an assessment.

<sup>18</sup> Since 2017, the AST is no longer required.

**Table 40. Total Medicaid Charges Billed for Individuals Screening Positive for FASD on the Alaska Screening Tool, 2013-2017**

Year	Total Medicaid Charges Billed in AK AIMS for Individuals Screening FASD Positive on AST
2013	\$11,142,825
2014	\$9,931,803
2015	\$9,376,794
2016	\$10,151,847
2017	\$8,309,108
<b>Total (2013-2017)</b>	<b>\$48,912,377</b>
<b>Annual Average</b>	<b>\$9,782,475</b>

Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System [Data file from AKAIMS FASD\_Screening\_Cost]. Retrieved from [https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD\\_Screening\\_Cost](https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD_Screening_Cost).

Half (49.9%) of the individuals who screened positive for FASD on the AST received care in a private residence without supportive services, 11% were homeless, and 11% received care in a private residence with supportive services. A total of 6% of these individuals were in foster care.

**Table 41. Among Individuals Screening Positive for FASD on the Alaska Screening Tool, the Reported Living Situation, Average Number of Persons per Year by Living Situation, 2013-2017**

Living Situation	Total Number of Persons Screening Positive for FASD on the Alaska Screening Tool	Percent of Total	Average Number of Persons/Year
Private Residence Without Supportive Services	2,343	49.9%	469
Homeless	500	10.6%	100
Private Residence With Supportive Services	494	10.5%	99
Foster Care	301	6.4%	60
Other	166	3.5%	33
Residential Treatment	156	3.3%	31
Correction/Detention Facility	147	3.1%	29
Shelter	122	2.6%	24
Group Home	90	1.9%	18
Transitional Housing	88	1.9%	18
Assisted Living Facility	86	1.8%	17
Halfway House	68	1.4%	14
Unknown	35	0.7%	7
Hospital for Psychiatric Purposes	30	0.6%	6
Crisis Residence	22	0.5%	4
No Response	19	0.4%	4
Therapeutic Foster Care	16	0.3%	3
Nursing Home	7	0.1%	1
Hospital for Non-Psychiatric Purposes	4	0.1%	1
In-Household w/ Relatives	4	0.1%	1
Alone	2	0.0%	0
<b>Total</b>	<b>4,700</b>	<b>100.0%</b>	<b>940</b>

Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System [Data file from AKAIMS FASD\_Screening\_Cost].

## Homelessness Costs

The *Alaska Homelessness Dashboard* estimates the number of homeless persons based on a survey conducted at one point in time during the year. The estimate for SFY2018 is that approximately 2,016 people were homeless, including 1,248 in homeless shelters, 459 in transitional housing, and 309 who were living on the streets in Alaska. Approximately 100 people (5% of the Alaska homeless population), screened positive for FASD under the AST and received treatment in 2018.

Chronically homeless people tend to have frequent contact with shelters, emergency rooms, jails, and other intensive social services. In 2018, the United Way of Anchorage estimated the average annual cost of a homeless person in Anchorage or Mat-Su for these kinds of services was \$47,413, including emergency services (police, fire, Anchorage Safety Center), Department of Corrections (incarceration), and health payer costs (emergency, inpatient, and outpatient services).<sup>19</sup> If this per capita cost is used as a proxy for all homeless throughout Alaska, the total cost of services for homeless people who screened positive for FASD on the AST and received behavioral health services was \$4.7 million.

Of the individuals who screen positive for FASD on the AST, approximately 24 stay in a homeless shelter each night of the year on average. The average cost per person per night (in Anchorage) for a homeless shelter is \$21<sup>20</sup>, resulting in a total annual cost of \$183,960.

## Foster Care Costs

Annually, approximately 60 individuals who screened positive for FASD were receiving services while in foster care. As of July 2017, approximately 1,010 children were being cared for outside their homes in the custody of the Office of Children Services due to parental alcohol misuse. It is likely these children have a higher rate of FASD than the general population, but if it is assumed that the statewide average of 6% FASD incidence applies to them, then the portion of Office of Children Services cost for foster care attributable to FASD is \$1.5 million. (*For more information, refer to Child Protective Services under Chapter 4.*)

## Correctional/Detention Costs

An average of 29 individuals who live in a correctional or detention facility screened positive for FASD on the AST in 2017. In that year, the average daily census of the offender population was 4,992.<sup>21</sup> The SFY2018 budget was \$337 million, or an average annual cost of \$61,963 per offender. Applying this average cost to the 29 individuals screened positive for FASD, suggests an annual cost of \$1,796,927.

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<sup>19</sup> United Way of Anchorage, *Anchorage Mat-Su Pay for Success Permanent Supportive Housing Project*, August 2018. <https://alaskamentalhealthtrust.org/wp-content/uploads/2018/06/HandOut-PayForSuccess-PSH-Project-Presentation-08-02-18-Final.pdf>

<sup>20</sup> Per Lisa Aquina, Catholic Social Services, via email correspondence (November 3, 2019).

<sup>21</sup> Alaska Department of Corrections, 2017 Offender Profile. <https://doc.alaska.gov/admin/docs/2017Profile.pdf>

## Births

In 2017, approximately 18 babies were born in Alaska with FAS.

**Table 42. FAS Incidence and Estimated Annual Costs, 2017**

Alaska births in 2017	10,447
FAS prevalence per 1,000 live births	1.7
FAS births	18

Source: Birth data from the Alaska Vital Statistics 2017 Annual Report. FAS prevalence from *Health Impacts of Alcohol Misuse in Alaska (2018)*.

## Medical Costs

### Primary or Secondary Diagnoses

#### INPATIENT

Some of the health problems caused by FASD require admission to a hospital. In 2018, unduplicated inpatient charges in Alaska attributable to FASD primary or secondary diagnoses totaled \$1.0 million, including care for the mother and newborns (approximately 18 newborns). The number of admissions attributable to FASD totaled 26. The total length of hospital stays resulting from those admissions was 127 days.

**Table 43. Unduplicated Alaska Inpatient Hospital Admissions, Length of Stay, and Total Charges Related to FASD, Primary or Secondary Diagnoses, 2018**

Attributable	Number of Admissions	Length of Stay (days)	Total Charges
Alcohol Effects on Mother	2	5	\$45,880
Alcohol Effects on Newborn	24	122	\$978,422
<b>TOTAL</b>	<b>26</b>	<b>127</b>	<b>\$1,024,302</b>

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

#### EMERGENCY DEPARTMENT (ED) COSTS

Some patients with health problems caused by FASD receive treatment in the emergency department. In 2018, there was one Alaska visit attributable to FASD for a stay of one day, resulting in a total cost of \$1,566.

**Table 44. Unduplicated Alaska Inpatient Emergency Department Visits, Length of Stay, and Total Charges Related to FASD, Primary or Secondary Diagnoses, 2018**

Attributable	Number of Visits	Length of Stay (days)	Total Charges
Alcohol Effects on Newborn	1	1	\$1,566
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>\$1,566</b>

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

## OUTPATIENT IN-HOSPITAL COSTS (EXCLUDING ED COSTS)

Outpatient visits are visits to a physician office, outpatient surgery, and other outpatient settings in a hospital, excluding the ED. In 2018, 49 visits lasting a total of 76 day resulted in unduplicated outpatient charges in Alaska attributable to FASD totaling \$21,491.

**Table 45. Unduplicated Alaska Outpatient (except Emergency Department) Visits, Length of Stay, and Total Charges Related to FASD, Primary or Secondary Diagnoses, 2018**

Attributable	Number of Admissions	Length of Stay (days)	Total Charges
Alcohol Effects on Mother	3	3	\$2,508
Alcohol Effects on Newborn	46	73	\$18,983
<b>TOTAL</b>	<b>49</b>	<b>76</b>	<b>\$21,491</b>

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

## Medicaid Spending

In SFY2018, there were 262 Medicaid beneficiaries with FASD diagnosis codes.<sup>22</sup> Medicaid spending for treatment related directly to these codes was \$900,000. However, among the 262 Medicaid beneficiaries who had one or more of these codes, total spending for all their medical treatment (including FASD codes) was \$11.5 million. This amounts to \$44,000 per Medicaid enrollee or four times the average spending for an enrollee.

## Special Education

Student assessments for special education services do not include a specific category for FASD. While these students may meet requirements for multiple categories (such as speech/language impairments, developmentally delayed, etc.), most are classified in the “Other Health Impairments” category.<sup>23</sup> Using one school district in Alaska (Kenai Peninsula Borough School District) as a proxy, approximately 80 students out of 400 (or 20%) classified with “other health impairments” have an FASD designation. In 2018, there were 2,765 students with the primary classification of “other health impairments.” Assuming 20% of these students have FASD, this suggests about 550 students statewide have FASD and receive special education services (or about 3% of all students receiving special education services).

Estimating special education costs for the state is complex because they are based on a formula connected to the adjusted average daily membership (school enrollment). However, the Lewin Group study (2013) estimates \$7,023 in average national annual direct special education costs per individual under age 18 with FASD. For the State of Alaska, the equivalent total cost would be \$3.9 million.

<sup>22</sup> Data provided by DHSS. Based on all claims greater than \$100 with diagnoses for FASD.

<sup>23</sup> Per telephone conversation with Clayton Holland, Director of Student Support Services, Kenai Peninsula Borough School District, November 8, 2019.

# Chapter 7: Public Assistance and Social Services

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- In FFY2019, the U.S. government spent an estimated \$32 million in Alaska on social welfare supports attributable to alcohol 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 \$7 million on social welfare supports attributable to alcohol misuse. The largest expenditures were for Adult Public Assistance, followed by Temporary Assistance for Needy Families (TANF).

## Social Welfare Funding

Alcohol misuse results in greater demand for social welfare services. For example, problems with alcohol 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 alcohol 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, this report includes 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.

The aggregate federal social welfare payments attributable to alcohol misuse is estimated to be 1.6%.

**Table 46. Federal Social Welfare Spending in Alaska Attributable to Alcohol Misuse, FFY2019**

Social Welfare Program	Federal Funding Total	% Attributable to Alcohol Misuse <sup>1</sup>	\$ Attributable to Alcohol Misuse
OASDI (Social Security)	\$1,422,000,000 <sup>2</sup>	1.1%	\$15,642,000
SNAP Benefits	\$187,357,117 <sup>3</sup>	3.5%	\$6,557,499
SSI	\$78,840,000 <sup>2</sup>	2.2%	\$1,734,500
Head Start	\$45,064,700 <sup>4</sup>	2.2%	\$991,400
TANF	\$36,303,100 <sup>5</sup>	3.5%	\$1,270,600
Special Education	\$42,692,602 <sup>6</sup>	2.2%	\$939,237
Child Care	\$33,656,500 <sup>7</sup>	2.7%	\$908,700
Public Assistance Field Services	\$26,602,100 <sup>7</sup>	2.7%	\$718,300
Women, Infants & Children (WIC)	\$23,314,900 <sup>7</sup>	2.2%	\$512,900
Alaska Temporary Assistance Program	\$20,621,800 <sup>7</sup>	3.5%	\$721,800
Vocational Rehabilitation	\$18,863,700 <sup>7</sup>	2.2%	\$415,000
SNAP Administrative Costs	\$13,301,800 <sup>3</sup>	3.5%	\$465,600
Energy Assistance Program	\$10,122,900 <sup>7</sup>	2.7%	\$273,300
Public Assistance Administration	\$4,920,000 <sup>7</sup>	2.7%	\$132,800
Alaska Public Assistance	\$1,730,00 <sup>7</sup>	2.7%	\$46,700
<b>Total</b>	<b>\$1,974,968,462</b>	<b>1.6%<sup>8</sup></b>	<b>\$31,579,610</b>

Sources and notes:

<sup>1</sup>1998 NIDA study, *The Economic Costs of Alcohol and Drug Abuse in the United States - 1992*

<sup>2</sup>Social Security Administration (OASDI data from CY 2017, SSI data from CY 2018)

<sup>3</sup>SNAP Analysis Branch, Office of Policy Support, USDA Food & Nutrition Services (FFY 2018 data)

<sup>4</sup>Division of Public Assistance, Alaska Dept. of Health & Social Services

<sup>5</sup>Office of Family Assistance, U.S. Dept. of Health & Human Services

<sup>6</sup>U.S. Department of Education, funds for state formula-allocated and selected student aid programs

<sup>7</sup>Alaska Office of Management & Budget

<sup>8</sup>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.

In SFY2019, \$6.5 million, or 2.9% of state social welfare spending, was attributable to alcohol misuse.

**Table 47. State Social Welfare Spending in Alaska Attributable to Alcohol Misuse, SFY2019**

Social Welfare Program	State Funding Total	% Attributable to Alcohol Misuse	\$ Attributable to Alcohol Misuse
Adult Public Assistance	\$60,356,900	2.7%	\$1,629,600
TANF	\$36,558,500 <sup>1</sup>	3.5%	\$1,279,500
Public Assistance Field Services	\$26,105,300	2.7%	\$704,800
Senior Benefits Program	\$20,786,100	2.7%	\$561,200
Permanent Fund Dividend Hold Harmless	\$17,724,700	2.7%	\$478,600
SNAP administrative costs	\$13,511,700	3.5%	\$472,900
Tribal Assistance Programs	\$17,172,000	2.7%	\$463,600
Child care	\$8,253,300	2.7%	\$222,800
Alaska Temporary Assistance Program	\$5,663,900	3.5%	\$198,200
Head Start	\$6,800,000	2.2%	\$149,600
Vocational Rehabilitation	\$5,644,800	2.2%	\$124,200
Women, Infants & Children (WIC)	\$3,819,500	2.7%	\$103,100
Public Assistance Administration	\$3,209,000	2.7%	\$86,600
General Relief Assistance	\$1,205,400	2.7%	\$32,500
Work Services	\$214,100	2.7%	\$5,800
<b>Total</b>	<b>\$227,025,200</b>	<b>2.9%<sup>2</sup></b>	<b>\$6,513,300</b>

<sup>1</sup>Office of Family Assistance, U.S. Dept. of Health & Human Services, FY 2018 data

<sup>2</sup>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: Underage Drinking Costs

Underage drinking imposes costs in the form of health, social, and economic problems and is a causal factor for serious problems such as homicide, suicide, traumatic injury, drowning, burns, violent and property crime, high-risk sex, fetal alcohol syndrome, alcohol poisoning, and the need for treatment for alcohol misuse and dependence.

In 2016-2017, 10% of Alaskan youths age 12-17 were underage drinkers and 5% were binge drinkers.<sup>24</sup>

It was estimated that the total costs of underage drinking in Alaska in 2018 was \$361 million. These costs include mental distress associated with physical or emotional injury as a result of youth alcohol consumption. Costs associated with youth violence represent almost half (48%) of underage drinking costs in Alaska, followed by youth traffic accidents (28%).

**Table 48. Costs of Underage Drinking in Alaska, by Problem, 2010, \$ millions (\$ 2018)**

Category	Total Alaska Alcohol-Related Costs (\$ millions)	Percentage of Alaska Alcohol-Related Costs
Youth violence	174	48%
Youth traffic collisions	103	28
Youth alcohol treatment	28	8
Youth injury	24	7
Youth property crime	13	4
Fetal Alcohol Syndrome among mothers (ages 15-20)	5	2
High-risk sex (ages 14-20)	12	3
Poisonings and psychoses	2	1
<b>Total Underage Drinking Costs</b>	<b>\$361</b>	<b>100%</b>

Source: Pacific Institute for Research and Evaluation. Underage Drinking Enforcement Training Center, *Underage Drinking in Alaska: The Facts*. (2010). Inflation-adjustments to 2018 dollars calculated by McDowell Group.

<sup>24</sup> Binge drinking is defined as a female consuming four or more drinks or a male consuming 5 or more drinks on a single occasion on at least one day in the past 30 days.

# Chapter 9: Employment and Income from Alcoholic Beverage Manufacturing and Sales in Alaska

- In 2018, 2,774 private sector jobs in Alaska were related to alcohol manufacturing and sales, totaling \$71.6 million in wages.
- Employment in most alcohol-related categories has been trending down over the past decade. However, beverage manufacturing employment grew by 163% between 2008 and 2018.

## Employment in Alaska’s Alcoholic Beverage Industry

In 2018, beverage manufacturing, alcohol wholesale and retail distribution, and alcoholic drinking places accounted for 2,774 jobs in Alaska (0.8% of all jobs).<sup>25</sup> Alcohol drinking establishments accounted for 51% of alcohol-related employment, alcohol wholesale and retail trade 31%, and beverage manufacturing 18% of the total. These workers earned \$71.6 million in total annual wages (0.4% of all wages in Alaska). These figures do not include the portion of restaurant employment that could be attributed to alcohol sales.

Figure 8. Alcohol-Related Jobs in Alaska, by Sector, 2018

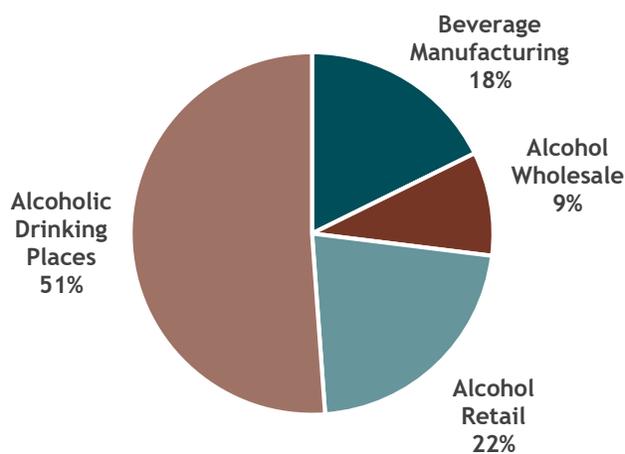
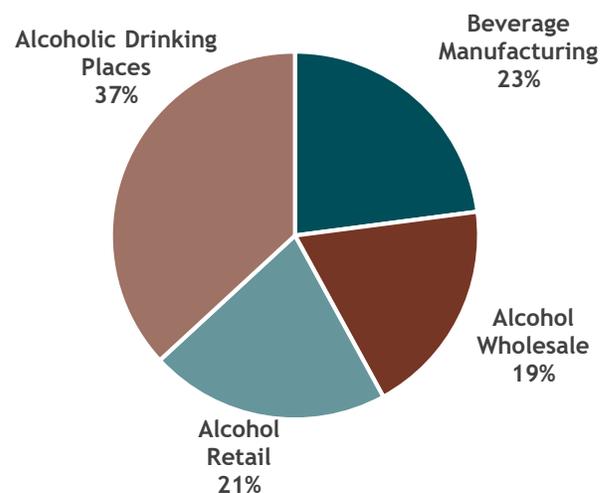


Figure 9. Alcohol-Related Wages in Alaska, by Sector, 2018



Source: Alaska Department of Labor and Workforce Development

<sup>25</sup> DOLWD employment and wage data does not include self-employed individuals (sole proprietorships).

Employment in three of the four categories (wholesale, retail, and alcoholic drinking places) has gradually declined since 2002. Only the manufacturing sector (which includes breweries, distilleries, wineries, and non-alcoholic beverages) has increased, from 86 employees in 2002 to 491 employees in 2018.

A decline of about 200 alcohol-related jobs (mainly in drinking places) in Alaska in 2003 may be related to the State alcoholic beverage tax increase in October 2002.

**Table 49. Annual Average Jobs, by Alcohol-Related Private Sector Categories, Alaska, 1997-2018**

Year	Beverage manufacturing	Beer, wine, distilled beverage Wholesale	Beer, wine, liquor stores - Retail	Alcoholic Drinking places	Total Alcohol-related Jobs	Total Alaska Jobs	Alcohol-related Jobs as a % of Total Alaska Jobs
1997	56	278	595	*	*	266,112	
1998	61	273	621	*	*	271,907	
1999	88	300	586	*	*	274,570	
2000	99	546	519	*	*	280,664	
2001	96	541	528	*	*	287,941	
2002	86	398	697	2,043	3,224	292,286	1.1%
2003	99	413	672	1,815	2,999	296,876	1.0%
2004	119	423	669	1,883	3,094	301,385	1.0%
2005	123	428	695	1,840	3,086	307,757	1.0%
2006	108	447	707	1,759	3,021	314,139	1.0%
2007	156	435	711	1,706	3,008	317,188	0.9%
2008	186	438	738	1,628	2,990	321,724	0.9%
2009	182	**	755	1,581	**	320,265	**
2010	219	**	751	1,640	**	323,410	**
2011	236	**	765	1,633	**	328,566	**
2012	275	**	809	1,586	**	333,952	**
2013	343	269	651	1,516	2,779	335,366	0.8%
2014	356	270	674	1,587	2,887	336,764	0.9%
2015	391***	268	672	1,535	2,866	338,592	0.8%
2016	424***	263	639	1,477	2,803	332,174	0.8%
2017	447	257	618	1,407	2,729	327,924	0.8%
2018	491	257	607	1,419	2,774	326,824	0.8%

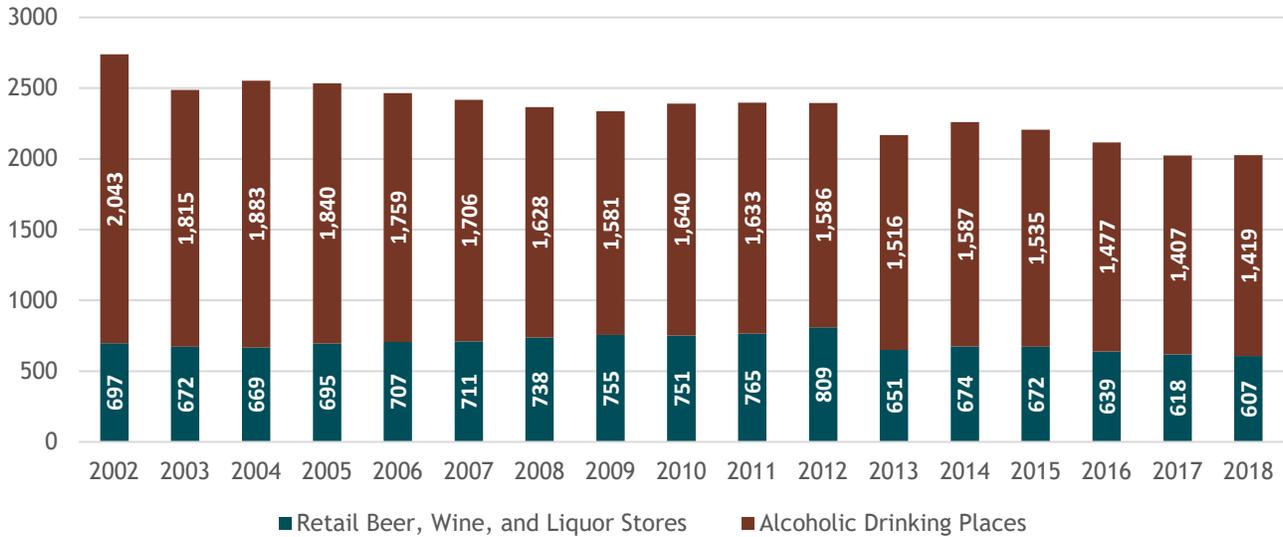
Notes: \*Drinking Places and Alcoholic - Leisure and Hospitality is a sub-category of Food Services and Drinking Places. The category was first reported in the QCEW data in 2002.

\*\*Jobs cannot be totaled for all alcohol-related categories as wholesale employment data (2009-2012) is confidential.

\*\*\*Includes one tobacco manufacturing business.

Source: DOLWD, QCEW data.

**Figure 10. Annual Average Employment in Alcohol Retail and Drinking Places in Alaska, 2002-2018**



Note: Does not include wholesale job data (not available for 2009-2012) or manufacturing-related jobs.  
 Source: DOLWD QCEW.

**Figure 11. Beverage Manufacturing Annual Average Employment, 1997-2018**



Source: DOLWD QCEW.

# Chapter 10: Taxes Generated from Alcohol Use

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- In SFY2018, the Alaska Department of Revenue collected \$39.2 million in Alcoholic Beverages Tax payments, of which \$19.6 million was deposited in the Alcohol and Other Drug Abuse Treatment and Prevention Fund, and \$19.6 million in General Fund receipts.

## History of Alaska's Alcoholic Beverages Tax

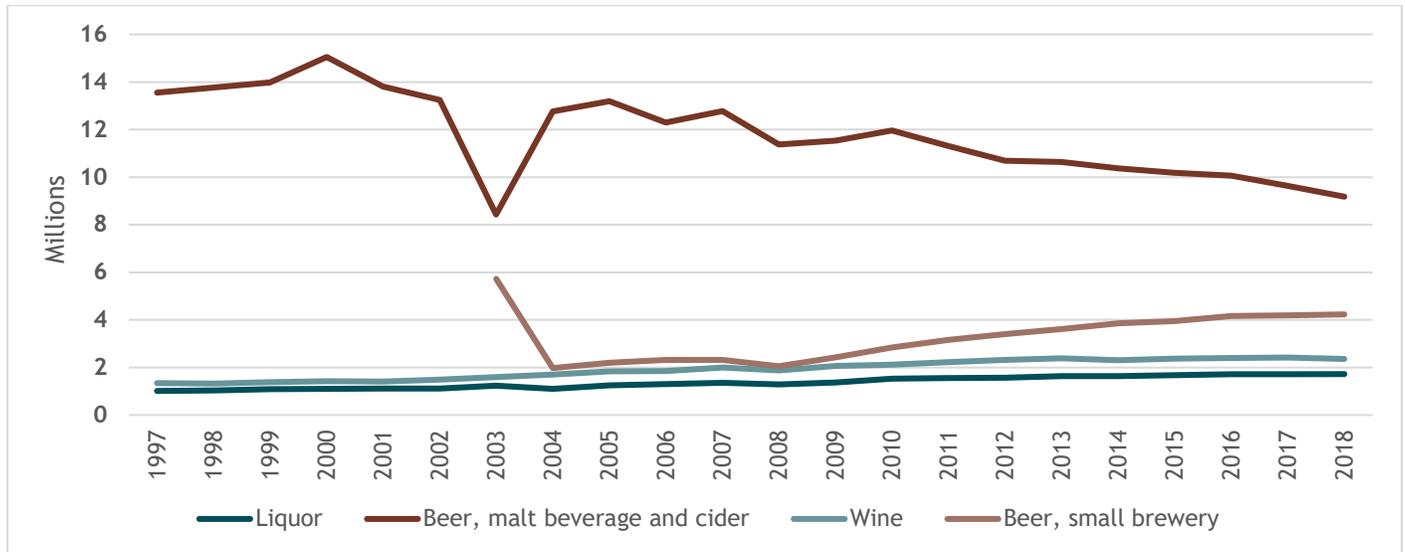
Since 1933, Alaska has levied a tax on alcoholic beverages sold in the state, collected primarily from wholesalers and distributors of alcoholic beverages. From 1933 to 2001, tax rates increased in small increments, normally in response to rate changes by other states, and all revenue was deposited into the General Fund. This changed in 2002 when the legislature significantly increased the tax rates on all alcoholic beverages, effective October 1 of that year, to create and fund the Alcohol and Other Drug Abuse Treatment and Prevention Fund. The Department of Administration deposits 50% of the tax collected into the Fund.

## Alaska's Current Alcoholic Beverages Tax

Currently, the tax levied per gallon of alcoholic beverages is as follows: \$12.80 for liquor, \$2.50 for wine, \$1.07 for beer (malt beverages), and \$0.35 for beer produced in small breweries. At the time of the 2002 increase, the legislature also defined small breweries and established the lower rate for them. Small breweries are defined as meeting the requirements of 26 USC. 5051 (a)(2)(small breweries), which applies a lower tax rate to the first 60,000 barrels of beer (malt beverages) produced and sold.

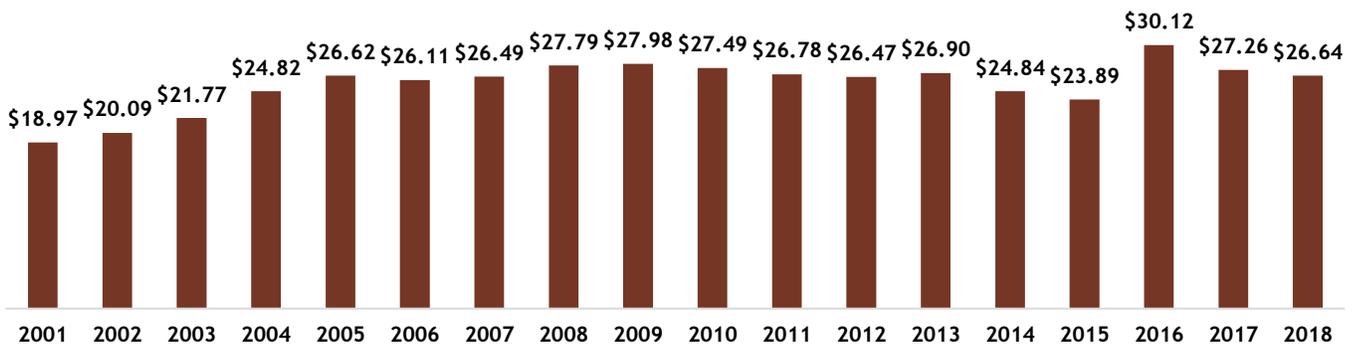
In SFY2018, the Alaska Department of Revenue collected \$39.2 million in Alcoholic Beverages Tax. A total of \$19.6 million was directed to the Treatment and Prevention Fund, and the remaining \$19.6 million placed in the General Fund. Since 1997, the amount of liquor and wine taxed has remained relatively stable. The amount of beer, malt beverage, and cider taxed has declined since 2010 and small-brewery beer has increased since 2008.

**Figure 12. Total Alcohol Taxed by Type, Alaska, Millions of Gallons, SFY1997-2018**



Source: Alaska Department of Revenue.

**Figure 13. Alcoholic Beverage Taxes Retained in the General Fund, \$ Per Capita, Alaska, SFY2001-2018**



Source: Alaska Department of Revenue

# Chapter 11: Alcohol Misuse Impacts on State General Fund Spending

- In SFY2018, Medicaid spending for beneficiaries with an acute alcohol-related diagnosis totaled \$567,983, including \$182,415 (or 32%) for specific services related to acute alcohol-related conditions. Approximately 28.7% of Medicaid spending in Alaska is drawn from the General Fund. For beneficiaries receiving acute alcohol-related services, the state's General Fund portion was \$52,353.
- Medicaid beneficiaries with chronic alcohol-related diagnoses accounted for a total of \$130.3 million, including \$43.6 million (or 33%) for specific services related to chronic alcohol addiction. The average spending per Medicaid beneficiary with a chronic alcohol-related condition was \$30,312 for all Medicaid reimbursed claims, including an average of \$10,149 for chronic alcohol-related services. For those with chronic alcohol-related diagnoses, the state's General Fund portion for Medicaid was \$37.4 million.
- In SFY2019, the Division of Behavioral Health provided approximately \$10.2 million in state-funded grants attributable to prevention of alcohol misuse.
- In SFY2019, the state spent \$227 million on social welfare programs, of which about \$6.5 million (2.9%) was attributable to alcohol misuse.
- An estimated \$106 million is attributed to alcohol misuse arrests and offenses in Alaska, representing about 5.5% of total justice system costs (state, federal, and local) in Alaska. If the same rate is applied to total state undesignated general fund spending on the justice system (\$564 million), about \$31 million of that spending is attributable to alcohol 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

#### ACUTE ALCOHOL-RELATED DIAGNOSES

For Medicaid beneficiaries with acute alcohol-related diagnoses, a total of \$567,983, including \$182,415 (or 32%) for specific services related to acute alcohol addiction, was spent. The average spending per Medicaid beneficiary with an acute alcohol-related condition was \$31,555 for all Medicaid reimbursed claims, including an average of \$10,134 for acute alcohol-related services.

Some Medicaid beneficiaries with acute alcohol 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 \$38,897 (or 7% for all services)

in claims. The chronic condition with the highest claims was mental health (\$18,349 or 47% of all chronic condition claims), followed closely by lung conditions (\$18,296 or 47% of all chronic condition claims).<sup>26</sup>

For acute alcohol-related services, females represented 18% of Medicaid claims, zero percent are children under age 18, and 39% live in the Anchorage/Mat-Su region.

Approximately 28.7% of Medicaid spending in Alaska is paid by the General Fund. For beneficiaries receiving acute alcohol-related services, the state’s General Fund portion was \$52,353.

**Table 50. Medicaid Reimbursement Claims, Beneficiaries with Acute Alcohol-related Diagnosis Receiving \$1,000 or More in Services, by Demographic Characteristics, Alaska, Date of Service SFY2018**

Demographics	Number of Beneficiaries <sup>1</sup>	Total Medicaid Claims for Acute Alcohol-related Services	Percent of Total Medicaid Claims for Acute Alcohol-related Services	Total Medicaid Claims for All Services <sup>2</sup>	Percent of Total Medicaid Claims for All Services
<b>Gender</b>					
Female	4	\$31,965	18%	\$189,157	33%
Male	14	\$150,449	82%	\$378,825	67%
<b>Age Group</b>					
Under age 18	0	\$0	0%	\$0	0%
Age 19-20	1	\$8,277	5%	\$19,017	3%
Age 21-64	17	\$174,138	95%	\$548,966	97%
Age 65+	0	\$0	0%	\$0	0%
<b>Alaska Region</b>					
Anchorage/Mat-Su	8	\$70,963	39%	\$335,180	59%
Northern	1	\$1,667	1%	\$2,661	0%
Southcentral	2	\$10,281	6%	\$19,863	3%
Southeast	2	\$4,348	2%	\$36,533	6%
Western	5	\$95,156	52%	\$173,746	31%
<b>Total</b>	<b>18</b>	<b>\$182,415</b>		<b>\$567,983</b>	
<b>Estimated State-General Fund Portion (28.7%)</b>		<b>\$52,353</b>		<b>\$163,001</b>	
<b>Average Spend Per Medicaid Beneficiary with Acute Alcohol-related Diagnosis</b>		<b>\$10,134</b>		<b>\$31,555</b>	

<sup>1</sup> 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.

<sup>2</sup> 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

### CHRONIC ALCOHOL-RELATED DIAGNOSES

For Medicaid beneficiaries with chronic alcohol-related diagnoses, a total of \$130.3 million, including \$43.6 million (or 33%) for specific services related to chronic alcohol addiction, was spent. The average spending per

<sup>26</sup> DHSS, MMIS data.

Medicaid beneficiary with a chronic alcohol-related condition was \$30,312 for all Medicaid reimbursed claims, including an average of \$10,149 for chronic alcohol-related services.

Some Medicaid beneficiaries with acute alcohol 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 \$12.9 million (or 10% for all services) in claims. The chronic condition with the highest claims was mental health (\$9.7 million or 75% of all chronic condition claims).<sup>27</sup>

For chronic alcohol-related services, females represented 51% of Medicaid claims, 3% are children under age 18, and 38% live in the Anchorage/Mat-Su region.

**Table 51. Medicaid Reimbursement Claims, Beneficiaries with Chronic Alcohol-related Diagnosis Receiving \$1,000 or More in Services, by Demographic Characteristics, Alaska, Date of Service SFY2018**

Demographics	Number of Beneficiaries <sup>1</sup>	Total Medicaid Claims for Chronic Alcohol-related Services	Percent of Total Medicaid Claims for Chronic Alcohol-related Services	Total Medicaid Claims for All Services <sup>2</sup>	Percent of Total Medicaid Claims for All Services
<b>Gender</b>					
Female	2,040	\$22,196,070	51%	\$64,588,899	50%
Male	2,258	\$21,425,244	49%	\$65,691,800	50%
<b>Age Group</b>					
Under age 18	111	\$1,298,851	3%	\$4,983,396	4%
Age 19-20	67	\$470,178	1%	\$1,928,337	1%
Age 21-64	4,041	\$40,921,850	94%	\$121,266,522	93%
Age 65+	79	\$930,436	2%	\$2,102,443	2%
<b>Alaska Region</b>					
Anchorage/Mat-Su	1,776	\$16,770,719	38%	\$54,366,752	42%
Northern	660	\$10,052,777	23%	\$23,319,446	18%
Southcentral	440	\$5,302,825	12%	\$14,220,720	11%
Southeast	500	\$4,716,779	11%	\$17,335,154	13%
Western	922	\$6,778,214	16%	\$21,038,627	16%
<b>Total</b>	<b>4,298</b>	<b>\$43,621,314</b>		<b>\$130,280,699</b>	
<b>Estimated State-General Fund Portion (28.7%)</b>		<b>\$12,519,317</b>		<b>\$37,390,561</b>	
<b>Average Spend Per Medicaid Beneficiary with Chronic Alcohol-related Diagnosis</b>		<b>\$10,149</b>		<b>\$30,312</b>	

<sup>1</sup> 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.

<sup>2</sup> 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

<sup>27</sup> DHSS, MMIS data.

## Prevention Grants

The State of Alaska Division of Behavioral Health (DBH) allocates grant funding to programs aimed at preventing mental health problems and alcohol 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 that is directed toward preventing alcohol misuse.

In SFY2019, DBH allocated an estimated total of \$10.2 million toward prevention of alcohol misuse.

**Table 52. State of Alaska Grant Funding for the Prevention of Alcohol Misuse, SFY2019 (thousands\$)**

Grant Recipient	Total State Funding	% Attributable to Alcohol Misuse	\$ Attributable to Alcohol Misuse
Alcohol Safety Action Program	\$4,183.0	100%	\$4,183.0
Sobering Center, Withdrawal Management & Residential SUD Treatment Services	\$3,200.0	67%	\$2,144.0
Comprehensive Behavioral Health Prevention & Early Intervention Services	\$2,319.1	35%	\$811.7
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	67%	\$219.8
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%	\$104.6
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
<b>Total</b>	<b>\$19,247.8</b>	<b>53%</b>	<b>\$10,161.3</b>

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 about \$227 million. Among these programs is Adult Public Assistance, Temporary Assistance for Needy Families (TANF), and Senior Benefits. Approximately \$6.5 million funded social welfare attributable to alcohol misuse (see chapter on *Public Assistance and Social Assistance*).

## Criminal Justice & Corrections Costs

In 2017, 12,217 offenses and arrests related to alcohol misuse represented 29% of total offenses and arrests, and total criminal justice costs associated with those offenses were an estimated \$106 million. These costs include local, state, and federal government spending on police protection, legal and adjudication services, and corrections programs.

**Table 53. Summary of Criminal Justice Costs  
Attributed to Alcohol Misuse in Alaska, 2017**

	Alcohol-Related
<b>Alcohol-Related Counts</b>	
Offenses and arrests	12,217
Percentage offenses-arrests	29%
<b>Costs</b>	
Criminal justice system	\$106.3 million

Source: McDowell Group calculations.

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. Nationally, state government expenditures represent 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	\$ Thousands
<b>Police Protection</b>		
Federal	22%	\$32,488,137
State	11%	\$16,688,707
Local	68%	\$94,422,263
<b>Total</b>		<b>\$143,600,328</b>
<b>Judicial and Legal Services</b>		
Federal	26%	\$17,572,994
State	36%	\$24,345,484
Local	39%	\$24,395,801
<b>Total</b>		<b>\$66,314,279</b>
<b>Corrections</b>		
Federal	9%	\$8,047,345
State	58%	\$53,696,840
Local	34%	\$29,867,725
<b>Total</b>		<b>\$91,611,910</b>
<b>Total Justice System</b>		
Federal	19%	\$58,108,477
State	30%	\$94,731,031
Local	51%	\$148,681,962
<b>Total</b>		<b>\$301,528,652</b>

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 <sup>1</sup>	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%
<b>Total</b>	<b>\$620,976.6</b>	<b>\$86,189.3</b>	<b>\$707,165.9</b>	<b>88%</b>

Note: Columns may not sum due to rounding.

<sup>1</sup> 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 SFY2018 of \$620 million represents the national average of approximately 30% of total justice spending, including local and federal government spending, that implies total annual justice system spending of \$2.1 billion in Alaska.

Table 23 (Chapter 4) shows that approximately \$106 million is attributed to alcohol misuse arrests and offenses in Alaska, representing about 5.0% of the \$2.1 billion in total justice system costs in Alaska. The state’s portion of that total spending is \$620 million, so it follows that 5.0% or \$31 million is the portion of state Undesignated General Fund justice system spending that is attributable to alcohol 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: Attribution Fractions and Mortality

Table 56. ICD-10 Codes and Alcohol Attributable Fractions by Attribution Group, Gender, and Age Group

Attribution Group	ICD-10	Sex	Age Group	AAF
<b>Chronic</b>				
Acute pancreatitis	K85	Both	All Ages	24%
Alcohol abuse	F10.0, F10.1	Both	All Ages	100%
Alcohol dependence syndrome	F10.2	Both	All Ages	100%
Alcohol polyneuropathy	G62.1	Both	All Ages	100%
Alcoholic psychosis	F10.3-F10.9	Both	All Ages	100%
Alcohol use complicating pregnancy	O99	F	All Ages	100%
Alcohol-induced chronic pancreatitis	K86.0	Both	All Ages	100%
Alcoholic cardiomyopathy	I42.6	Both	All Ages	100%
Alcoholic gastritis	K29.2	Both	All Ages	100%
Alcoholic liver disease	K70-K70.4, K70.9	Both	All Ages	100%
Alcoholic myopathy	G72.1	Both	All Ages	100%
Breast cancer, females	C50	F	All Ages	1%
Cholelithiasis	K80	Both	All Ages	-1%
Chronic hepatitis	K73	F	All Ages	1%
Chronic hepatitis	K73	M	All Ages	2%
Chronic pancreatitis	K86.1	Both	All Ages	84%
Cirrhosis of liver without mention of alcohol	K74.3-K74.6	Both	All Ages	40%
Degeneration of nervous system due to alcohol	G31.2	Both	All Ages	100%
Diabetes mellitus	E10, E11, E13.1	Both	35+	5%
Diseases of esophagus, stomach, and duodenum	J86.0, K20-K29, K52.81, K94, K31	Both	35+	10%
Epilepsy	G40, G41	Both	All Ages	15%
Esophageal cancer	C15	Both	All Ages	5%
Esophageal varices	I85, I98.2	Both	All Ages	40%
Fetal alcohol syndrome	Q86.0	Both	All Ages	100%
Fetus and newborn affected by maternal use of alcohol	P04.3, O35.4	Both	All Ages	100%
Hypertension	I10-I15	F	All Ages	1%
Hypertension	I10-I15	M	All Ages	2%
Ischemic heart disease	I20-I25	Both	All Ages	-1%
Laryngeal cancer	C32	F	All Ages	9%
Laryngeal cancer	C32	M	All Ages	11%
Liver cancer	C22	F	All Ages	7%
Liver cancer	C22	M	All Ages	8%
Low birth weight, prematurity, intrauterine growth retardation or death	O36.5, O36.4, P05, P07	Both	All Ages	2%
Malignant neoplasm of stomach	C16	Both	35+	20%
Oropharyngeal cancer	C01-C06, C09-C10, C12-C14	Both	All Ages	3%
Other and unspecified chronic liver disease	K76.0, K76.89, K74.1, K76.9	Both	35+	50%
Portal hypertension	K76.7	Both	All Ages	40%

Attribution Group	ICD-10	Sex	Age Group	AAF
<b>Chronic (continued)</b>				
Prostate cancer	C61	M	All Ages	1%
Psoriasis	L40.0-L40.4, L40.8, L40.9	Both	All Ages	2%
Spontaneous abortion	O03	F	All Ages	4%
Stroke, hemorrhagic	I60-I62, I69.0-I69.2	F	All Ages	3%
Stroke, hemorrhagic	I60-I62, I69.0-I69.2	M	All Ages	8%
Stroke, ischemic	G45, I63, I65-I67, I69.3	F	All Ages	1%
Stroke, ischemic	G45, I63, I65-I67, I69.3	M	All Ages	3%
Supraventricular cardiac dysrhythmia	I47.1, I47.9, I48	F	All Ages	4%
Supraventricular cardiac dysrhythmia	I47.1, I47.9, I48	M	All Ages	5%
<b>Acute</b>				
Accidental drowning and submersion	W65-W74	Both	All Ages	34%
Accidental falls	W00-W19	Both	All Ages	32%
Accidents caused by firearms	W32-W34	Both	All Ages	18%
Accidents caused by fires and flames	X00-X09	Both	All Ages	42%
Air and space transport accidents	V95-V97	Both	All Ages	18%
Alcohol poisoning	X45, Y15, T51.0, T51.1, T51.9	Both	All Ages	100%
Child maltreatment	X85-Y09, Y87.1	Both	0-17	16%
Excessive blood level of alcohol	R78.0	Both	All Ages	100%
Homicide and injury purposely inflicted by other persons	X85-Y09, Y87.1	Both	All Ages	47%
Hypothermia	X31	Both	All Ages	42%
Motor-vehicle nontraffic crashes	V02.0, V03.0, V04.0, V09.0, V12-V14(.0-.2), V19.0-V19.3, V20-V28(.0-.2), V29.0-V29.3, V30-V39(.0-.2), V40-V49(.0-.3), V50-V59(.0-.3), V60-V69(.0-.3), V70-V79(.0-.3), V81.0, V82.0, V83-V86(.4-.9), V88.0-V88.8, V89.0	Both	All Ages	18%
Motor-vehicle traffic crashes		F	0-14	15%
Motor-vehicle traffic crashes		F	15-19	20%
Motor-vehicle traffic crashes		F	20-24	36%
Motor-vehicle traffic crashes		F	25-34	37%
Motor-vehicle traffic crashes		F	35-44	34%
Motor-vehicle traffic crashes	V02(.1, .9), V03(.1, .9), V04(.1, .9), V09.2, V12-V14(.3-.9), V19.4-V19.6, V20-V28(.3-.9), V29.4-V29.9, V30-V39(.4-.9), V40-V49(.4-.9), V50-V59(.4-.9), V60-V69(.4-.9), V70-V79(.4-.9), V80.3-V80.5, V81.1, V82.1, V83-V86(.0-.3), V87.0-V87.8, V89.2	F	45-54	28%
Motor-vehicle traffic crashes		F	55-64	16%
Motor-vehicle traffic crashes		F	65+	8%
Motor-vehicle traffic crashes		M	0-14	15%
Motor-vehicle traffic crashes		M	15-19	26%
Motor-vehicle traffic crashes		M	20-24	46%
Motor-vehicle traffic crashes		M	25-34	49%
Motor-vehicle traffic crashes		M	35-44	47%
Motor-vehicle traffic crashes		M	45-54	41%
Motor-vehicle traffic crashes		M	55-64	28%
Motor-vehicle traffic crashes		M	65+	12%
Occupational and machine injuries	W24-W31, W45	Both	All Ages	18%

Attribution Group	ICD-10	Sex	Age Group	AAF
<b>Acute (continued)</b>				
Other road vehicle crashes	V01, V05-V06, V09.1, V09.3, V09.9, V10-V11, V15-V18, V19.3, V19.8-V19.9, V80.0-V80.2, V80.6-V80.9, V81.2-V81.9, V82.2-V82.9, V87.9, V88.9, V89.1, V89.3, V89.9	Both	All Ages	18%
Pneumonia and influenza	J10.1, J11, J12, J14.0, J15, J17, J18, A22.1, A37.91, A48.1, B25.0	Both	35+	5%
Respiratory tuberculosis	A15.0, A15.4-A15.6	Both	35+	25%
Suicide and self-inflicted injury	X60-X84 (except X65), Y87.0	Both	All Ages	23%
Suicide by and exposure to alcohol	X65	Both	All Ages	100%
Water transport accidents	V90-V94	Both	All Ages	18%

Notes: The ARDI Tool provides low, medium, and high estimates. For purposes of this report, the medium attributable estimate was used. Source: Centers for Disease Control and Prevention (CDC), Alcohol and Public Health, Alcohol-Related Disease Impacts (ARDI).

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

	Total Deaths 2014-2018	Alcohol Attributable Deaths 2014-2018	Annual Average Alcohol Attributable Deaths
<b>Causes of Death 100% Attributable to Alcohol</b>	<b>839</b>	<b>839</b>	<b>168</b>
Alcohol abuse	82	82	16
Alcohol cardiomyopathy	38	38	8
Alcohol dependence syndrome	109	109	22
Alcohol poisoning	142	142	28
Alcohol polyneuropathy	0	0	0
Alcoholic gastritis	2	2	0
Alcoholic liver disease	426	426	85
Alcoholic myopathy	0	0	0
Alcoholic psychosis	36	36	7
Alcohol-induced chronic pancreatitis	1	1	0
Degeneration of nervous system due to alcohol	2	2	0
Excessive blood level of alcohol	0	0	0
Fetal alcohol syndrome	1	1	0
Fetus and newborn affected by maternal use of alcohol	0	0	0
Suicide by and exposure to alcohol	0	0	0
<b>Causes of Death Partially Attributable to Alcohol</b>	<b>7,665</b>	<b>1,023</b>	<b>205</b>
Acute pancreatitis	25	6	1
Air-space transport	59	11	2
Aspiration	12	2	0
Breast cancer, females	316	3	1
Child maltreatment	284	45	9
Cholelithiasis	15	0	0
Chronic hepatitis	0	0	0
Chronic pancreatitis	1	1	0
Drowning injuries	118	40	8
Epilepsy	34	5	1
Esophageal cancer	174	2	0

	Total Deaths 2014-2018	Alcohol Attributable Deaths 2014-2018	Annual Average Alcohol Attributable Deaths
<b>Causes of Death Partially Attributable to Alcohol (continued)</b>			
Esophageal varices	3	1	0
Fall injuries	261	84	17
Fire injuries	53	22	4
Firearms	19	3	1
Gastroesophageal hemorrhage	1	0	0
Homicide	284	133	27
Hypertension	422	8	2
Hypothermia	74	31	6
Ischemic heart disease	2,300	0	0
Laryngeal cancer	20	1	0
Liver cancer	224	9	2
Liver cirrhosis, unspecified	197	79	16
Low birth weight, prematurity, intrauterine growth retardation or death	22	1	0
Motor-vehicle nontraffic crashes	67	12	2
Motor-vehicle traffic crashes	381	120	24
Occupational and machine injuries	10	2	0
Oropharyngeal cancer	62	1	0
Other road vehicle crashes	8	1	0
Poisoning (not alcohol)	553	160	32
Portal hypertension	2	1	0
Prostate cancer	215	0	0
Psoriasis	0	0	0
Spontaneous abortion	0	0	0
Stroke, hemorrhagic	171	3	1
Stroke, ischemic	106	2	0
Suicide	934	215	43
Supraventricular cardiac dysrhythmia	164	3	1
Water transport	74	13	3
<b>Total</b>	<b>8,504</b>	<b>1,862</b>	<b>372</b>

Notes: Due to rounding columns may not add to totals. See Appendix for ICD-10 codes used and specific alcohol attribution rates by gender and age groups.

Source: Death counts from DHSS' Bureau of Vital Statistics' (BVS) unpublished data, and McDowell Group calculations. Attribution rates from Centers for Disease Control and Prevention (CDC), Alcohol and Public Health, Alcohol-Related Disease Impacts (ARDI).

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

	Total Alcohol Attributable Deaths	PYLL Attributable to Alcohol	Annual Average Alcohol Attributable PYLL
<b>Causes of Death 100% Attributable to Alcohol</b>	<b>839</b>	<b>19,406</b>	<b>3,881</b>
Alcohol abuse	82	1,472	294
Alcohol cardiomyopathy	38	878	176
Alcohol dependence syndrome	109	1,922	384
Alcohol poisoning	142	4,587	917
Alcohol polyneuropathy	0	0	0
Alcoholic gastritis	2	18	4
Alcoholic liver disease	426	9,457	1,891
Alcoholic myopathy	0	0	0
Alcoholic psychosis	36	951	190
Alcohol-induced chronic pancreatitis	1	22	4
Degeneration of nervous system due to alcohol	2	24	5
Excessive blood level of alcohol	0	0	0
Fetal alcohol syndrome	1	75	15
Fetus and newborn affected by maternal use of alcohol	0	0	0
Suicide by and exposure to alcohol	0	0	0
<b>Causes of Death Partially Attributable to Alcohol</b>	<b>1,023</b>	<b>31,793</b>	<b>6,359</b>
Acute pancreatitis	6	97	19
Air-space transport	11	304	61
Aspiration	2	64	13
Breast cancer, females	3	36	7
Child maltreatment	45	1,827	365
Cholelithiasis	0	-1	0
Chronic hepatitis	0	0	0
Chronic pancreatitis	1	16	3
Drowning injuries	40	1,339	268
Epilepsy	5	117	23
Esophageal cancer	2	15	3
Esophageal varices	1	34	7
Fall injuries	84	782	156
Fire injuries	22	637	127
Firearms	3	176	35
Gastroesophageal hemorrhage	0	5	1
Homicide	133	5,366	1,073
Hypertension	8	98	20
Hypothermia	31	750	150
Ischemic heart disease	0	0	0
Laryngeal cancer	1	8	2
Liver cancer	9	97	19
Liver cirrhosis, unspecified	79	1,123	225
Low birth weight, prematurity, intrauterine growth retardation or death	1	50	10

	Total Alcohol Attributable Deaths	PYLL Attributable to Alcohol	Annual Average Alcohol Attributable PYLL
<b>Causes of Death Partially Attributable to Alcohol (continued)</b>			
Motor-vehicle nontraffic crashes	12	388	78
Motor-vehicle traffic crashes	120	4,521	904
Occupational and machine injuries	2	70	14
Oropharyngeal cancer	1	5	1
Other road vehicle crashes	1	33	7
Poisoning (not alcohol)	160	5,428	1,086
Portal hypertension	1	6	1
Prostate cancer	0	0	0
Psoriasis	0	0	0
Spontaneous abortion	0	0	0
Stroke, hemorrhagic	3	33	7
Stroke, ischemic	2	22	4
Suicide	215	7,940	1,588
Supraventricular cardiac dysrhythmia	3	6	1
Water transport	13	401	80
<b>Total</b>	<b>1,862</b>	<b>51,199</b>	<b>10,240</b>

Notes: Due to rounding columns may not add to totals. See Appendix for ICD-10 codes used and specific alcohol attribution rates by gender and age groups.

Source: Death counts from DHSS' Bureau of Vital Statistics' (BVS) unpublished data, and McDowell Group calculations. Attribution rates from Centers for Disease Control and Prevention (CDC), Alcohol and Public Health, Alcohol-Related Disease Impacts (ARDI).

## Appendix B: FASD Demographics

The following tables provide demographic details (age, gender, income, clinical specialty, primary payor, and primary substance of treatment) of individuals who screened FASD positive on the Alaska Screening Tool and received behavioral health services between 2013 and 2017. All data was available from Alaska Division of Behavioral Health, AKAIMS- Alaska's Automated Information Management System.

### Age and Gender

**Table 59. Age and Gender Distribution Among Persons Screening Positive on the Alaska Screening Tool, 2013-2017**

Age at Screening	Females	Female % of Total	Males	Male % of Total	Total	Distribution by Age
Under age 18	724	47.4%	802	52.6%	1,526	32.5%
18 years or older	1,770	55.8%	1,404	44.2%	3,174	67.5%
<b>Total</b>	<b>2,494</b>	<b>53.1%</b>	<b>2,206</b>	<b>46.9%</b>	<b>4,700</b>	<b>100.0%</b>

Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System [Data file from AKAIMS FASD\_Screening\_Cost].

Retrieved from [https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD\\_Screening\\_Cost](https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD_Screening_Cost).

### Income

**Table 60. Income Distribution Among Persons Screening Positive on the Alaska Screening Tool, 2013-2017**

Income Range	Number Screening Positive for FASD on AST	% of Total Screened	Number of Females Screening Positive for FASD on AST	Female % of Total	Number of Males Screening Positive for FASD on AST	Males % of Total
\$0 to \$20,479	3,836	81.6%	2,063	82.7%	1,773	80.4%
\$20,480 to \$27,628	18	0.4%	7	0.3%	11	0.5%
\$27,629 to \$34,776	232	4.9%	119	4.8%	113	5.1%
\$34,777 to \$41,924	169	3.6%	90	3.6%	79	3.6%
\$41,925 to \$49,073	9	0.2%	6	0.2%	3	0.1%
\$49,074 to \$56,221	401	8.5%	192	7.7%	209	9.5%
\$56,222 to \$63,370	6	0.1%	2	0.1%	4	0.2%
\$63,371 to \$70,546	6	0.1%	3	0.1%	3	0.1%
\$70,547 or more	23	0.5%	12	0.5%	11	0.5%
<b>Total</b>	<b>4,700</b>	<b>100.0%</b>	<b>2,494</b>	<b>100.0%</b>	<b>2,206</b>	<b>100.0%</b>

Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System [Data file from AKAIMS FASD\_Screening\_Cost].

Retrieved from [https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD\\_Screening\\_Cost](https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD_Screening_Cost).

## Clinical Specialty

Table 61. Clinical Specialty Provided Among Persons Screening Positive on the Alaska Screening Tool, 2013-2017

Type of Clinical Specialty	Number of Persons Screening Positive for FASD on AST	% of Total
Youth meeting criteria of Severely Emotionally Disturbed with NO Substance Use Disorder	998	21.2%
Adult meeting criteria of Severely Mentally Ill WITH a Substance Use Disorder	701	14.9%
Youth or Adult with a Substance Use Disorder ONLY / NO other Mental Health Diagnosis	696	14.8%
Emotionally Disturbed Adult WITH a Substance Use Disorder	657	14.0%
Emotionally Disturbed Adult with NO Substance Use Disorder	575	12.2%
Adult meeting criteria of Severely Mentally Ill with NO Substance Use Disorder	496	10.6%
Emotionally Disturbed Youth with NO Substance Use Disorder	285	6.1%
Youth meeting criteria of Severely Emotionally Disturbed WITH a Substance Use Disorder	238	5.1%
Emotionally Disturbed Youth WITH a Substance Use Disorder	54	1.1%
<b>Total</b>	<b>4,700</b>	<b>100.0%</b>

Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System [Data file from AKAIMS FASD\_Screening\_Cost].

Retrieved from [https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD\\_Screening\\_Cost](https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD_Screening_Cost).

## Primary Payor

Table 62. Among Individuals Screening Positive for FASD on the Alaska Screening Tool, Primary Payor Source, 2013-2017

Primary Payor for Treatment Services	Number of Persons Screening Positive for FASD on AST	% of Total
Medicaid	2,602	55.4%
Indian Health Services	529	11.3%
Client Self-Pay	418	8.9%
Alaska Native Health Care	173	3.7%
Sliding Scale, Client Partial Payment	150	3.2%
Other government grant	146	3.1%
Unknown	132	2.8%
Other Private	128	2.7%
Blue Cross/Blue Shields	92	2.0%
No charge	65	1.4%
Medicare	54	1.1%
Aetna	53	1.1%
Other Public	52	1.1%
Sliding Scale, No Charge	46	1.0%
Not Collected	24	0.5%
CIGNA	17	0.4%
Other Native Health Care	12	0.3%
Moda Health	4	0.1%
HMO	3	0.1%
<b>Total</b>	<b>4,700</b>	<b>100.0%</b>

Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System [Data file from AKAIMS FASD\_Screening\_Cost].

Retrieved from

[https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD\\_Screening\\_Cost](https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD_Screening_Cost).

## Primary Substance Treated

Table 63. Among Individuals Screening Positive for FASD on the Alaska Screening Tool, Primary Substance Treated, 2013-2017

Primary Substance Treated	Total Number of Persons Screening Positive for FASD on AST	% of Total
None	2,507	53.3%
<b>Alcohol Related</b>		
Alcohol To Intoxication	540	11.5%
Alcohol	449	9.6%
Alcohol Any Use Last 30 days	195	4.1%
Alcohol More than 1 Per Day	37	0.8%
Non-Beverage Alcohol	1	0.0%
<b>Drug Related</b>		
Cannabis	269	5.7%
Methamphetamines	225	4.8%
Heroin	219	4.7%
Other Opiates/Synthetics	60	1.3%
Marijuana/Hashish	50	1.1%
Cocaine/Crack	33	0.7%
Nicotine	33	0.7%
Unknown	15	0.3%
Other Amphetamines	12	0.3%
Other Stimulants	10	0.2%
Oxycodone	7	0.1%
Inhalants	5	0.1%
OxyContin	5	0.1%
Benzodiazepines	4	0.1%
Designer Drugs	4	0.1%
Other Hallucinogens	4	0.1%
Other Sedative/Hypnotic	2	0.0%
Barbiturates	1	0.0%
Non-Prescription Methadone	1	0.0%
<b>Other</b>		
Other	12	0.3%
<b>Total</b>	<b>4,700</b>	<b>100.0%</b>

Source: Alaska Division of Behavioral Health. (2019). AKAIMS- Alaska's Automated Information Management System [Data file from AKAIMS FASD\_Screening\_Cost]. Retrieved from [https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD\\_Screening\\_Cost](https://akaimsreports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD_Screening_Cost).