

Summary of the Economic Costs of Fetal Alcohol Syndrome/Fetal Alcohol Spectrum Disorder in Alaska

The Alaska Mental Health Trust Authority contracted with McDowell Group to prepare a study, *The Economic Costs of Alcohol Misuse in Alaska, 2019 Update* completed in January 2020. In this study, a chapter estimated the costs associated with Fetal Alcohol Syndrome (FAS)/Fetal Alcohol Spectrum Disorders (FASD). This report excerpts data on FAS/FASD costs from this larger study.

- 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 screening positive for FASD on the AST to receive treatment were \$48.9 million between 2013 and 2017, an average of \$9.8 million/year.
- Among those individuals who screened positive for FASD on the AST IN 2017:
 - 11% were homeless, representing about \$4.7 million in services.
 - \circ 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 with FASD receiving special education services in Alaska represent a special education cost of \$3.9 million.

Methodology

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).

An Anchorage Mat-Su Pay for Success Permanent Supportive Housing Project presentation 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 Hospital Facilities Data Report 2018 dataset 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. Alcohol-related Disease Impact (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 Alaska Department of Health and Social Services 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.

What is FAS/FASD?

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)
- 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.¹ 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.²

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 children³. 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.⁴

Table 1. Estimated Weighted Prevalence (Percent) for Specific Classifications of FASDs,Eight Samples at Four U.S. Communities

¹ Streissguth, A. (1994). A Long-Term Perspective of FAS. Alcohol Health & Research World 18(1):74-81.

² National Organization on Fetal Alcohol Syndrome, What is FAS/FASD?, www.nofas.org/faqs.aspx?id=9

³ 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

⁴ 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

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
Average	0.4	2.8	3.3	6.5

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 2. Application of FASD Prevalence Classifications to Alaska's Population, 2018

Category	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
Total Fetal Alcohol Spectrum Disorder	6.5	47,860
Alaska Total Population		736,239

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 State Fiscal Year (SFY) 2018, 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).⁵ 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.⁶ 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.⁷ 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 the Appendix.

Table 3. 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
Total	72,964	5,833	8.0%	4,876
Average Per Year	14,593	1,167	8.0%	1,876

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.

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.

⁵ Behavioral Health Research & Services, FAS Evaluation, Cost of FASD Diagnostic Process in Alaska. University of Alaska Anchorage, February 2015.

⁶ Note that a screening is not the same as an assessment.

⁷ Since 2017, the AST is no longer required.

Table 4. 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
Total (2013-2017)	\$48,912,377
Annual Average	\$9,782,475

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.

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 5. Among Individuals Screening Positive for FASD on the Alaska Screening Tool, the ReportedLiving 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
Total	4,700	100.0%	940

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).⁸ 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 \$21⁹, 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.

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 4,992.¹⁰ 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.

⁸ 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

⁹ Per Lisa Aquina, Catholic Social Services, via email correspondence (November 3, 2019).

¹⁰ 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 6. 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 7. 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
TOTAL	26	127	\$1,024,302

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 8. 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
TOTAL	1	1	\$1,566

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.

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
TOTAL	49	76	\$21,491

Table 9. Unduplicated Alaska Outpatient (except Emergency Department) Visits, Length of Stay, and Total Charges Related to FASD, Primary or Secondary Diagnoses, 2018

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

Medicaid Spending

In SFY2018, there were 262 Medicaid beneficiaries with FASD diagnosis codes.¹¹ 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. ¹² 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.

¹¹ Data provided by DHSS. Based on all claims greater than \$100 with diagnoses for FASD.

¹² Per telephone conversation with Clayton Holland, Director of Student Support Services, Kenai Peninsula Borough School District, November 8, 2019.

References

Alaska Department of Corrections (DOC). "Alaska Offender Profile, 2017." June 2018. http://www.correct.state.ak.us/admin/docs/Final_2018_Profile.pdf. Accessed November 2019.

- Alaska Department of Health and Social Services. Alaska Division of Behavioral Health. (2019). AKAIMS-Alaska's Automated Information Management System [Data file from AKAIMS FASD_Screening_Cost]. Retrieved from <u>https://akaims-</u> reports.dhss.alaska.gov/Reports/report/FASD%20Diagnostic%20Team/FASD_Screening_Cost.
- Alaska Department of Health and Social Services. Alaska Division of Public Assistance. "Medicaid Cost and Utilization Data." Special Request. Received November 2019.
- Alaska Department of Health and Social Services. Alaska Division of Public Health. "Alaska Health Facilities Data Reporting Program." Special Request. Received October 2019.
- Alaska Department of Health and Social Services. Alaska Section of Epidemiology. (May 7, 2018). "Health Impacts of Alcohol Misuse in Alaska." <u>http://www.epi.alaska.gov/bulletins/docs/rr2018_02.pdf</u>. Accessed October 2019.
- Alaska Department of Health and Social Services. Bureau of Vital Statistics. *Special data request*. Received October 2019.
- Bouchery, Ellen, Carol Simon, and Henrick Hardwood. The Lewin Group, Inc. Prepared for the Centers for Disease Control and Prevention and the National Foundation for the Centers for Disease Control and Prevention. *"Economic Cost of Excessive Alcohol Consumption in the United States, 2006."* 2013 Update.
- Centers for Disease Control and Prevention (CDC). Alcohol and Public Health: Alcohol-Related Disease Impact (ARDI) Application. "Average for Alaska 2006-2010 Alcohol Attributable Fractions Excessive Alcohol Use." 2013. www.cdc.gov/ARDI. Accessed October 2019.

Institute for Social and Economic Research. "Behavioral Health Research & Services, FAS Evaluation, Cost of FASD Diagnostic Process in Alaska." University of Alaska Anchorage, February 2015.

- McDowell Group, Inc. "The Economic Costs of Alcohol Misuse in Alaska." Prepared for the Alaska Mental Health Trust Authority. January 2020.
- 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. Retrieved from: https://www.ncbi.nlm.nih.gov/pubmed/29411031. Accessed October 2019.
- National Institute of Health (NIH) National Institute on Drug Abuse (NIH/NIDA). "The Economic Costs of Alcohol and Drug Abuse in the United States 1992." 1998. http://archives.drugabuse.gov/EconomicCosts/Index.html. Accessed October 2019.

- Stade B, et al. "The Burden of Prenatal Exposure to Alcohol: Revised Measurement of Costs." Canadian Journal of Pharmacology, 2009 Winter; 16(1):e91-102. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/19168935. Accessed October 2019.
- United Way of Anchorage. "Anchorage Mat-Su Pay for Success Permanent Supportive Housing Project. Presentation to the Alaska Mental Health Trust Authority Board of Trustees." August 2018. <u>https://alaskamentalhealthtrust.org/wp-content/uploads/2018/06/HandOut-PayForSuccess-PSH-Project-Presentation-08-02-18-Final.pdf</u>. Accessed October 2018.

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 10. 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%
Total	2,494	53.1%	2,206	46.9 %	4,700	100.0%

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.

Income

Table 11. 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%
Total	4,700	100.0%	2,494	100.0%	2,206	100.0%

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.

Clinical Specialty

Table 12. 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%
Total	4,700	100.0%

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.

Primary Payor

Table 13. 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%
НМО	3	0.1%
Total	4,700	100.0%

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.

Primary Substance Treated

Table 14. 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%
Alcohol Related		
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%
Drug Related		
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%
Other		
Other	12	0.3%
Total	4,700	100.0%

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

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