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Alaska Facts and Figures

2021 Drug Overdose Mortality Update (July 25th, 2022)

Background

Drug overdoses are a significant contributor to mortality in Alaska and represent an ongoing public health concern. Deaths by overdose have been increasing annually since 2018. This report is designed to provide an update on the current state of Alaska drug overdose mortality through 2021. Data from 2021 may be incomplete and should be considered provisional and subject to change.

Methods

The Alaska Health Analytics and Vital Records Section's Electronic Vital Records System was queried for Alaska resident or non-resident certificates of death occurring in-state between 2012 and 2021. Overdoses are identified using the International Classification of Disease, 10th Revision (ICD-10) codes for unintentional (X40-X44), suicide (X60-X64), homicide (X85), or undetermined intent (Y10-Y14) drug poisoning. Overdose deaths are tabulated based on the decedent's underlying cause of death (defined as the condition or injury that initiated the train of morbid events leading directly to death). Deaths due to alcohol-poisoning or drug-related traumatic injuries such as motor vehicle accidents are not included.

Overdose deaths are further categorized by the multiple contributing causes of death (defined as all other causes in the train of morbid events) in order to identify select types of illicit drugs. This includes selected ICD-10 codes for narcotic and psychodysleptic (hallucinogen) drugs ("narcotics": T400-T409), antiepileptic, sedative-hypnotic and antiparkinsonism drugs ("sedatives": T420-T428) and psychotropic drugs, not elsewhere classified ("psychotropics": T430-T439). The literal text of the cause of death descriptions are also analyzed to identify additional drugs not directly captured using ICD-10 codes. This includes fentanyl and its analogues and methamphetamine, which are classified as sub-categories of other synthetic narcotic (T404) and psychostimulant (T436) drugs, respectively. Tabulations of overdose deaths by drug type are not mutually exclusive and a single overdose involving multiple drugs can be counted in multiple drug categories. Multidrug overdoses and the top fatal drug combinations are also examined.

Data are stratified by the demographic and regional characteristics of the decedent, including sex, bridged race, ethnicity, age, and Public Health Region where the death occurred. Death rates per 100,000 are calculated using population estimates from the Alaska Department of Labor and Workforce Development. If any population estimates were not available at the time of analysis, values were substituted using the previous year's estimate. Rates are age-adjusted by U.S. Standard Year 2000 Population levels, when possible, to correct for natural differences in the age distribution of the population. Results have not been tested for statistical significance and are subject to change.

Results

Overdose Summary

- 1,382 drug overdose deaths have occurred in Alaska between 2012 and 2021 (an average of about 138 deaths per year).
  - In 2021, there were 253 overdose deaths, up from 146 in 2020.
  - In 2021, the overdose death rate was 35.2 deaths per 100,000, up from 20.2 in 2020.
- By sex, men typically experience higher overdose death rates than women.
  - In 2021, the overdose death rate for men was 42.9 deaths per 100,000, compared to 26.9 for women.
- By race, American Indian/Alaska Native (AI/AN) people typically experience higher overdose death rates than other races.
  - In 2021, the overdose death rate for AI/AN people was 77.7 deaths per 100,000, compared to 40.1 in 2020.
  - In 2021, the overdose death rate for White people was 28.8 deaths per 100,000, compared to 15.6 in 2020.
  - In 2021, Asian/PI, Black, and Hispanic (of any race) people experienced fewer than 20 overdose deaths, making rate estimates statistically unreliable.
- By age, young adults and middle-aged people between 25 to 54 years old typically experience higher overdose death rates than other ages.
  - In 2021, the overdose death rate was highest among people aged 25 to 34 years old, at 64.6 deaths per 100,000. This was followed closely by people aged 45 to 54 years old and aged 35 to 44 years old, at 63.4 and 57.2 deaths per 100,000, respectively.
- By geography, the Anchorage Public Health Region had the state's highest overdose death rate in 2021, at 49.3 deaths per 100,000, up from 31.4 in 2020.

Figure 1. Overdose Deaths by Year (2012-2021)

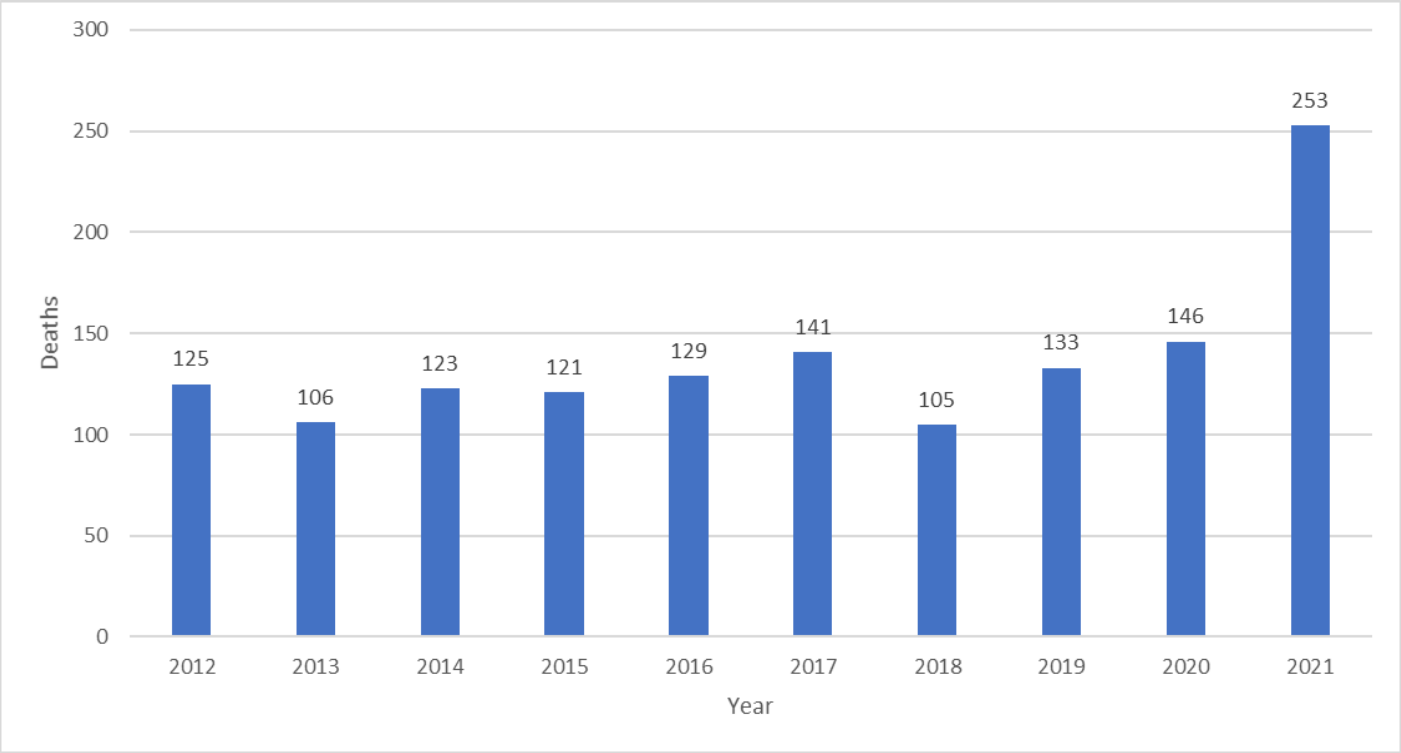

Table 1. Overdose Deaths by Year (2012-2021)

Underlying Cause	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Drug Overdose	125	106	123	121	129	141	105	133	146	253	1,382

Note: Drug poisoning (overdose) underlying cause of death ICD-10 codes: X40-X44, X60-X64, X85, Y10-Y14.

Table 2. Overdose Deaths (Rates) by Sex (2017-2021)[1]

Sex	2017	2018	2019	2020	2021
Male	82 (22.3)	60 (15.1)	93 (24.4)	94 (25.3)	159 (42.9)
Female	59 (16.1)	45 (12.7)	40 (11.3)	52 (14.8)	94 (26.9)

Table 3. Overdose Deaths (Rates) by Race/Ethnicity (2017-2021)[1]

Race/Ethnicity	2017	2018	2019	2020	2021
White	94 (18.3)	73 (13.5)	80 (15.3)	80 (15.6)	146 (28.8)
AI/AN	36 (30.7)	22 (20.7)	40 (34.8)	45 (40.1)	90 (77.7)
Asian/PI	2 (**)	1 (**)	5 (**)	4 (**)	2 (**)
Black	7 (24.2*)	8 (21.8*)	8 (27.0*)	12 (34.7*)	13 (39.4*)
Hispanic (Any Race)	8 (16.2*)	3 (**)	1 (**)	4 (**)	6 (11.3*)

Table 4. Overdose Deaths (Rates) by Age (2017-2021)[1]

Age	2017	2018	2019	2020	2021
<5 Years	0 (NA)	0 (NA)	1 (**)	0 (NA)	0 (NA)
5-14 Years	0 (NA)	0 (NA)	0 (NA)	0 (NA)	0 (NA)
15-24 Years	11 (11.4*)	10 (10.5*)	7 (7.5*)	18 (19.5*)	27 (29.2)
25-34 Years	35 (30.4)	22 (19.5)	46 (41.0)	33 (30.0)	71 (64.6)
35-44 Years	32 (34.1)	23 (24.1)	34 (35.0)	36 (36.1)	57 (57.2)
45-54 Years	36 (39.2)	23 (26.0)	19 (22.2*)	29 (34.7)	53 (63.4)
55-64 Years	21 (21.1)	24 (24.3)	17 (17.4*)	24 (25.3)	32 (33.7)
65-74 Years	4 (**)	3 (**)	7 (11.3*)	5 (**)	10 (15.5*)
75-84 Years	2 (**)	0 (NA)	2 (**)	1 (**)	3 (**)
85+ Years	0 (NA)	0 (NA)	0 (NA)	0 (NA)	0 (NA)

Table 5. Overdose Deaths (Rates) by Region (2017-2021)[1]

Region	2017	2018	2019	2020	2021
Anchorage	81 (27.3)	51 (16.5)	57 (19.3)	90 (31.4)	142 (49.3)
Gulf Coast	10 (13.1*)	15 (17.7*)	16 (18.8*)	12 (12.8*)	30 (40.3)
Interior	17 (14.8*)	12 (10.3*)	22 (19.3)	10 (8.2*)	19 (15.9*)
Mat-Su	13 (12.4*)	15 (14.1*)	15 (15.0*)	20 (19.0)	27 (24.5)
Northern	0 (NA)	1 (**)	5 (**)	3 (**)	3 (**)
Southeast	15 (20.5*)	7 (9.0*)	11 (15.3*)	7 (10.8*)	24 (35.0)
Southwest	5 (**)	4 (**)	7 (16.9*)	4 (**)	8 (21.1*)
Statewide	**141 (19.3)**	**105 (14.0)**	**133 (18.1)**	**146 (20.2)**	**253 (35.2)**

Note: Drug poisoning (overdose) underlying cause of death ICD-10 codes: X40-X44, X60-X64, X85, Y10-Y14.

1. Death rate per 100,000 population. Age-adjusted by U.S. Year 2000 Standard Populations for Sex, Race/Ethnicity, and Region.

* Rates based on fewer than 20 events are statistically unreliable and should be used with caution.

* Rates based on fewer than 6 events are not reported.

Overdoses by Drug

- 778 total drug overdose deaths occurred in Alaska between 2017 and 2021.
- 546 opioid overdose deaths occurred in Alaska between 2017 and 2021 (an average of about 109 deaths per year).
  - In 2021, there were 196 opioid overdose deaths, up from 102 in 2020.
  - In 2021, the opioid overdose death rate was 27.3 deaths per 100,000, up from 14.0 in 2020.
  - Other synthetic narcotics, a category that includes synthetic opioids such as fentanyl, were involved in 150 deaths.
- 403 psychostimulant overdose deaths occurred in Alaska between 2017 and 2021 (an average of about 81 deaths per year).
  - In 2021, there were 159 psychostimulant overdose deaths, up from 67 in 2020.
  - In 2021, the psychostimulant overdose death rate was 22.2 deaths per 100,000, up from 9.4 in 2020.

Table 6. Narcotics Overdose Deaths (Rates) by Drug (2017-2021)[1]

Drug (ICD-10 Code)	2017	2018	2019	2020	2021
Total Narcotics (T400-T409)	**107 (14.4)**	**72 (9.3)**	**88 (11.7)**	**107 (14.6)**	**199 (27.6)**
Opioids (T400-T404, T406)	100 (13.6)	65 (8.4)	83 (11.0)	102 (14.0)	196 (27.3)
Heroin (T401)	36 (4.9)	28 (3.7)	45 (6.0)	31 (4.3)	65 (9.0)
Analgesic Opioids (T402-T404)	75 (10.0)	46 (5.9)	60 (7.8)	88 (12.1)	177 (24.7)
Analgesics Excl. Other Synth. (T402-T403)	50 (6.6)	37 (4.8)	46 (6.0)	44 (5.7)	79 (10.9)
Other Opioids (T402)	46 (6.1)	33 (4.3)	41 (5.3)	37 (4.7)	72 (9.9)
Methadone (T403)	8 (1.0*)	9 (1.2*)	9 (1.2*)	8 (1.1*)	12 (1.6*)
Other Synthetic Narcotics (T404)	37 (4.8)	16 (2.0*)	23 (3.2)	61 (8.7)	150 (21.1)
Fentanyl (T404 + Fentanyl Or Analogue)	28 (3.6)	9 (1.1*)	15 (2.2*)	58 (8.2)	145 (20.4)
Other And Unspecified Narcotics (T406)	24 (3.4)	22 (2.9)	24 (3.0)	23 (3.0)	15 (2.0*)
Non-Opioids (T405, 407-409)	18 (2.3*)	11 (1.4*)	7 (0.9*)	21 (2.9)	13 (1.5*)
Cocaine (T405)	18 (2.3*)	10 (1.3*)	7 (0.9*)	21 (2.9)	11 (1.3*)
Cannabis (Derivatives) (T407)	0 (NA)	1 (**)	0 (NA)	0 (NA)	2 (**)

Table 7. Sedatives Overdose Deaths (Rates) by Drug (2017-2021)[1]

Drug (ICD-10 Code)	2017	2018	2019	2020	2021
Total Sedatives (T420-T428)	**39 (5.4)**	**26 (3.6)**	**26 (3.7)**	**26 (3.6)**	**20 (2.9)**
Benzodiazepines (T424)	32 (4.5)	24 (3.2)	18 (2.6*)	20 (2.8)	12 (1.7*)

Table 8. Psychotropics Overdose Deaths (Rates) by Drug (2017-2021)[1]

Drug (ICD-10 Code)	2017	2018	2019	2020	2021
Total Psychotropics (T430-T439)	**78 (10.8)**	**59 (8.2)**	**74 (9.9)**	**75 (10.4)**	**169 (23.6)**
Antidepressants (T430-T432)	13 (1.8*)	11 (1.7*)	11 (1.6*)	10 (1.3*)	13 (1.9*)
Antipsychotics (T433-T435)	7 (0.9*)	5 (**)	2 (**)	4 (**)	6 (0.9*)
Psychostimulants (T436)	64 (9.0)	49 (6.7)	64 (8.6)	67 (9.4)	159 (22.2)
Methamphetamine (T436 + Meth.)	60 (8.4)	44 (6.0)	59 (7.8)	62 (8.7)	154 (21.5)

Note: Drug categories are not mutually exclusive. A single overdose death involving multiple drugs can be counted in multiple categories.
1. Death rate per 100,000 population. Age-adjusted by U.S. Year 2000 Standard Population.
* Rates based on fewer than 20 events are statistically unreliable and should be used with caution.
* Rates based on fewer than 6 events are not reported.

Overdoses by Drug - Trends

- Total drug overdose death rates have increased annually since 2018.
  - In 2021, the overdose death rate was 35.2 deaths per 100,000, up from 17.0 in 2012.
  - Increases in overdose death rates since 2018 appear to be driven largely by increases in narcotic and psychotropic drugs, both of which have increased since 2012.
  - Sedative drug overdose rates have been relatively stable over time, decreasing slightly since 2012.

Figure 2. Overdose Death Rates by Drug (2012-2021)[1]

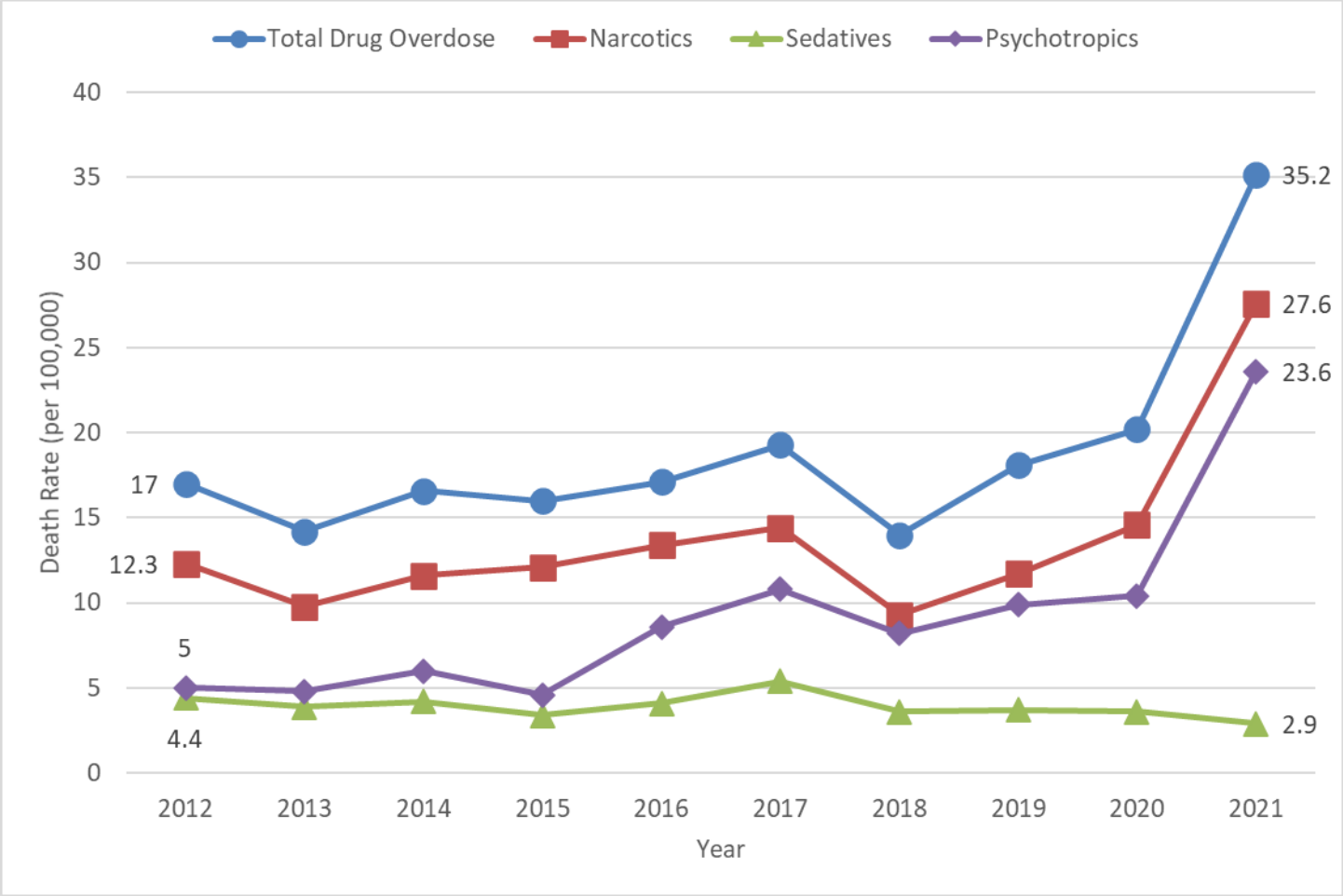

Table 9. Overdose Death Rates by Drug (2012-2021)[1]

Drug	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Total Drug Overdose	**17**	**14.2**	**16.6**	**16**	**17.1**	**19.3**	**14**	**18.1**	**20.2**	**35.2**
Narcotics	12.3	9.8	11.6	12.1	13.4	14.4	9.3	11.7	14.6	27.6
Sedatives	4.4	3.9	4.2	3.4	4.1	5.4	3.6	3.7	3.6	2.9
Psychotropics	5	4.8	6	4.6	8.6	10.8	8.2	9.9	10.4	23.6

Note: Drug categories are not mutually exclusive. A single overdose death involving multiple drugs can be counted in multiple categories.
1. Death rate per 100,000 population. Age-adjusted by U.S. Year 2000 Standard Population.

Multidrug Overdoses

- Between 2017 and 2021, 37% of drug overdose deaths involved a single type of narcotic, sedative, or psychotropic drug, 25% involved two drugs, and 34% involved three or more drugs.
- Between 2017 and 2021, heroin plus psychostimulants were the two most common lethal multidrug combinations, found in 18.6% of drug overdose deaths. This was followed closely by other synthetic narcotics plus psychostimulants, found in 18.4% of deaths.

Table 10. Drug Overdose Deaths (Percentage) by Number of Drugs (2017-2021)

Drugs	2017	2018	2019	2020	2021	Total
One Drug	48 (34%)	45 (43%)	48 (36%)	57 (39%)	88 (35%)	286 (37%)
Two Drugs	39 (28%)	19 (18%)	29 (22%)	36 (25%)	69 (27%)	192 (25%)
Three or More Drugs	49 (35%)	38 (36%)	42 (32%)	43 (29%)	90 (36%)	262 (34%)
Other or Unspecified Drugs	5 (4%)	3 (3%)	14 (11%)	10 (7%)	6 (2%)	38 (5%)
Total Drug Overdoses	**141 (100%)**	**105 (100%)**	**133 (100%)**	**146 (100%)**	**253 (100%)**	**778 (100%)**

Note: Multidrug overdose deaths with drug types in selected ICD-10 code ranges for narcotic, sedative, or psychotropic drugs: T400-T409, T420-T428, T430-T439. Deaths with codes outside the selected range or where no drug was identified are classified as other or unspecified.

Table 11. Top Ten Multidrug Overdose Combinations by Deaths (2017-2021)

Rank	Drug A (ICD-10 Code)	Drug B (ICD-10 Code)	Deaths	% Total ODs (N=778)
1	Heroin (T401)	Psychostimulants (T436)	145	18.6%
2	Other Synthetic Narcotics (T404)	Psychostimulants (T436)	143	18.4%
3	Other Opioids (T402)	Psychostimulants (T436)	107	13.8%
4	Other Opioids (T402)	Other Synthetic Narcotics (T404)	90	11.6%
5	Heroin (T401)	Other And Unspecified Narcotics (T406)	76	9.8%
6	Other And Unspecified Narcotics (T406)	Psychostimulants (T436)	72	9.3%
7	Heroin (T401)	Other Synthetic Narcotics (T404)	71	9.1%
8	Heroin (T401)	Other Opioids (T402)	70	9.0%
9	Benzodiazepines (T424)	Other Opioids (T402)	52	6.7%
10	Other And Unspecified Narcotics (T406)	Other Opioids (T402)	51	6.6%

Note: Multidrug overdoses with drug types in selected ICD-10 code ranges for narcotic, sedative, or psychotropic drugs: T400-T409, T420-T428, T430-T439. Drug A and B order is arbitrary and not indicative of each drug's level of contribution to the overdose death.

Discussion

In 2021, Alaska experienced the largest percent increase in overdose deaths of any state in the United States.[1] Between 2020–2021, drug overdose death rates increased for most drug categories examined in this report, resulting in a 74% increase in the overall drug overdose death rate. Of the drugs evaluated in the report, the largest increases were seen in overdose deaths involving fentanyl (a synthetic opioid) and methamphetamine (a psychostimulant), increasing 150% and 148%, respectively. The largest declines were seen in cocaine and benzodiazepine overdose deaths (48% and 40%, respectively). In 2021, individuals at comparatively higher risk of dying from drug overdose included men, American Indian/Alaska Native people, young adults, and those residing in the Anchorage Public Health Region. Multidrug use can be a significant driver of overdose mortality due to the physiological effects on the cardiovascular and respiratory systems when mixing categories of substances. Of the 778 total overdose deaths that occurred between 2017–2021, 58% involved drugs from more than one narcotic, sedative, or psychotropic category, including 34% that involved drugs from three or more categories.

[1] Ahmad FB, Rossen LM, Sutton P. Provisional drug overdose death counts. National Center for Health Statistics. 2021.

These data are consistent with recent national findings of most overdose deaths involving more than one substance.[2] 2019 data across 24 states and Washington DC revealed that fentanyl, heroin, cocaine, or methamphetamine (alone or in combination) were involved in nearly 85% of drug overdose deaths.[3] Overdose deaths involving synthetic opioids excluding methadone (primarily fentanyl) are projected to have increased for the ninth straight year in 2021,[4] as fentanyl continues to be mixed with heroin, stimulants, and counterfeit pills.[5] In Alaska, fentanyl was involved in nearly three out of four opioid overdose deaths, and many of these fentanyl-involved overdose deaths involved an additional substance, such as methamphetamine or heroin. The high potency of fentanyl combined with the tendency for mixing or co-use with other substances complicates intervention and treatment efforts.

In Alaska, the number of overdose deaths involving methamphetamines increased by 148% in 2021. The significant number of deaths involving psychostimulants warrants an increase in available and accessible stimulant use disorder treatment, and further analysis into risk and protective factors associated with stimulant misuse and addiction. Psychostimulants were involved in the top three overdose drug combinations (with heroin, other synthetic narcotics, and other opioids being the other substances) across 778 overdose deaths in the last five years. This suggests that harm reduction strategies should be integrated across multiple venues that include naloxone distribution to people who use stimulants, and multidrug use education on the lethality of combining substances.

More than a dozen State of Alaska (SOA) programs focus on prevention, treatment, and recovery strategies to counter overdose morbidity and mortality. Several initiatives specifically address fentanyl-involved overdose deaths. Since 2017, SOA Department of Health (DOH) Office of Substance Misuse and Addiction Prevention, through Project HOPE,[6] has distributed over 60,000 kits of naloxone to community members, a medication that has been demonstrated worldwide to reduce fatal overdose, with over 300 overdoses reversed in Alaska.[7, 8] Currently, Project HOPE incorporates fentanyl test strips and other resources into each naloxone kit. In 2022, a new initiative called Project Gabe,[9] supported by Project HOPE and the Section of Public Health Nursing, was launched to provide opioid misuse awareness, education, and prevention resources (including naloxone) to the fishing industry, as studies demonstrate employees in some occupational industries are at higher risk of being affected by the opioid epidemic. Finally, several public service announcements, posters, an Anchorage located bus advertisement, and website were developed and can be found at http://opioids.alaska.gov.

Engaging with people at high risk of overdose is key to preventing more deaths. Mobile crisis units connect people with the most appropriate resources from the onset of a behavioral health crisis through their recovery and follow up care. The Restore Hope in Linkage to Care Collaboration Program supports local behavioral health agencies, Anchorage Fire Department, and City of Fairbanks partners to connect people at point of emergency response to treatment and other social services. Since the inception of this program, 34 people engaged in treatment. The 1115 Medicaid Waiver Services is also integral to these efforts as it incorporated reimbursement rates for an increased breadth of behavioral health agencies as well as for mobile outreach and crisis response services.

SOA DOH has also been working with tribal and academic partners to incorporate a variety of provider education trainings, and tools including Project ECHO, a collaborative model of education that makes specialty knowledge more accessible to rural healthcare providers.[10] Improving awareness among providers of their existing prescribing practices is important to support the

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[2] Hedegaard, H., Bastian, B., Trinidad, J., Warner, M. (2018). "Drugs most frequently involved in drug overdose deaths: United State, 2011-2016." *National Vital Statistics Reports, 67*(9). Retrieved 22 Aug 2019 from: https://www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_09-508.pdf.

[3] O'Donnell, J., Gladden, RM., Mattson, C., et al. (2020). "Vital signs: characteristics of drug overdose deaths involving opioids and stimulants – 24 states and the District of Columbia, January-June 2019". *MMWR Morbidity and Mortality Weekly Report, 69*(35): 1189-1197.

[4] Ahmad FB, Rossen LM, Sutton P. Provisional drug overdose death counts. National Center for Health Statistics. 2021.

[5] Drug Enforcement Administration (DEA). "2020 National Drug Threat Assessment." Retrieved from: https://www.dea.gov/sites/default/files/2021-02/DIR-008-21%202020%20National%20Drug%20Threat%20Assessment_WEB.pdf.

[6] Project Hope: https://dhss.alaska.gov/health/osmap/Pages/hope.aspx.

[7] Chimbar, L., & Moleta, Y. (2018). "Naloxone effectiveness: a systematic review." *Journal of Addictions Nursing, 29*(3): 161-171.

[8] B. Hanson (personal communication, November 10, 2020).

[9] Project GABE: https://dhss.alaska.gov/health/News/Documents/press/2022/DHSS_PressRelease_DPH_ProjectGabe_20220607.pdf.

[10] Project ECHO: https://health.alaska.gov/dph/HealthPlanning/Pages/telehealth/ECHO.aspx.

increase in training opportunities. The Alaska Medicaid Drug Utilization Program continues to promote evidence-based opioid prescribing activities and has resulted in a decrease in overall opioid prescribing within the Alaska Medicaid population. The SOA Department of Commerce, Community, and Economic Development facilitates the Prescription Drug Monitoring Program,[11] a system that requires all providers to report prescriptions of opioids and benzodiazepines as well as other substances. The system has seen a 41% increase in the number of registered users since 2018 and a 30% decrease in the total number of opioid prescriptions between 2017 and 2021[12] The SOA DOH and Department of Corrections has scaled up screening, referral, linkage to care, and treatment funding and intervention through the implementation of the 1115 waiver,[13] Alaska Prenatal Screening Program,[14] and Medication Assisted Treatment training.[15] Studies indicate that mortality risk is lowered when people access methadone or buprenorphine treatment.[16]

Aside from these examples of the SOA's efforts, a variety of state, federal, and local organizations have conducted interventions across the spectrum of prevention, treatment, and recovery. To continue to see the impact in 2023, SOA and its partners have, and will continue to, work upstream addressing social determinants of health[17] and Adverse Childhood Experiences,[18] availability of medication assisted treatment, and the demographic disparities in overdose mortality.

Evidence-Based Strategies to Reduce Drug Overdose Deaths

1. Prevention:
    a. Educational campaigns.
    b. Interventions tailored to the community.
    c. Prescription drug monitoring programs.
    d. Opioid prescribing guidelines.
    e. Regulating promotion and marketing of opioids.
    f. Better mental health care.
    g. Opioid safe disposal locations.
2. Harm Reduction:
    a. Availability of fentanyl test strips.
    b. Naloxone access and training.
    c. Syringe services programs.
    d. Supervised injection sites.
3. Treatment:
    a. Increase access to treatment, including through telehealth.
    b. Medications for opioid use disorder.
    c. Expand and diversify treatment workforce.
    d. Improve health care workforce addiction training.
    e. Reduce stigma for seeking care.
    f. Access to culturally competent care.
    g. Treatment alternatives to incarceration.
4. Recovery:

[11] https://www.commerce.alaska.gov/web/cbpl/ProfessionalLicensing/PrescriptionDrugMonitoringProgram.aspx.

[12] Alaska Prescription Drug Monitoring Program. (2022). "Alaska Prescription Drug Monitoring Program report to the 32nd Alaska State Legislature (2022)." *Prepared for the 32nd Alaska Legislature on May 2, 2022.* Retrieved from: https://www.commerce.alaska.gov/web/portals/5/pub/PHA_PDMP_2022_LegislativeReport.pdf.

[13] https://health.alaska.gov/dbh/Pages/1115/default.aspx.

[14] Singleton, R., Slaunwhite, A., Herrick, M., Hirschfeld, M., Brunner, L., …Rider, E. (2019). "Research and policy priorities for addressing prenatal exposure to opioids in Alaska." *International Journal of Circumpolar Health, 78*(1).

[15] https://aws.state.ak.us/OnlinePublicNotices/Notices/View.aspx?id=192562.

[16] Sordo, L., Barrio, G., Bravo, M., Indave, B., Degehardt, L., …Pastor-Barriuso, R. (2017). "Mortality risk during and after opioid substation treatment: systematic review and meta-analysis of cohort studies." *The BMJ, 357*.

[17] Healthypeople.gov. (2019). "Substance Abuse." Retrieved 16 Sept 2019 from: https://www.healthypeople.gov/2020/leading-health-indicators/2020-lhi-topics/Substance-Abuse/determinants.

[18] Hughes, K., Bellis, M., Hardcastle, K., Sethi, D., Butchart, A., … Dunne, M. (2017). "The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis." *The Lancet, Public Health, 2*(8): ee356-e366.

   a. Employment opportunities for people in recovery.
   b. Expanded access to recovery housing.
   c. Peer counseling.
   d. Intensive support to sustain recovery.
5. Data Collection
   a. Promote timely collection of local data, including demographics.
   b. Make real-time, disaggregated data available for identifying at-risk groups.
   c. Use information gathered to inform effective, community tailored strategies.

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