Drug Overdose Deaths in Montana 2014-2023

Key Takeaways

4th leading cause of injury death

Drug overdose death rates are higher than historical levels, with fentanyl and methamphetamine as major contributors the increase.

Most deaths are unintentional

About 8 in 10 drug overdose deaths are unintentional.

American Indian people are most affected

The drug overdose death rate among American Indians was over 3x the state rate in the 2019-2023 period.

Introduction

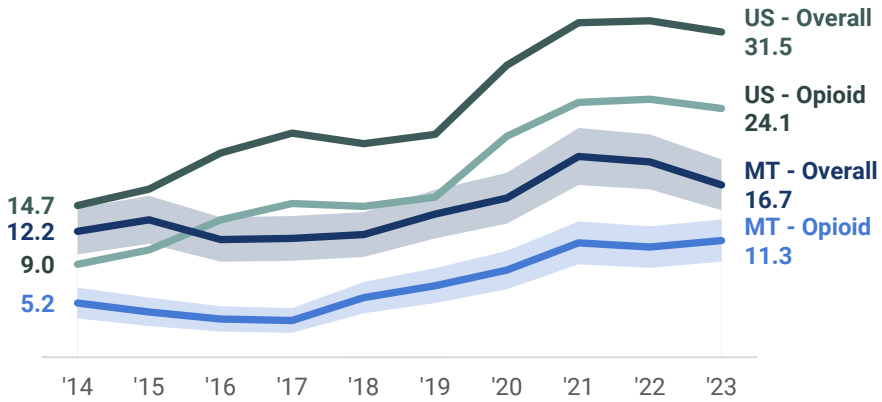
Drug overdoses were the fourth-leading cause of injury deaths in Montana, accounting for 1,501 deaths between 2014-2023, after unintentional falls (1,912), motor vehicle crashes (1,930), firearm deaths (2,244).[1,2] This amounts to an average of 150 drug overdose deaths per year. Drug overdoses nationally have risen significantly in the past decade and continue to remain higher than historical levels.[3] This report describes drug overdose deaths in Montana from 2014-2023 by demographic factors and drug type (see Table 1 for a list of drugs chosen for analysis). This report is an update to prior reports published in 2020 and 2022 by the Montana Department of Public Health and Human Services.[4,5] Public health professionals are better able to implement effective interventions through continuous monitoring of these drug overdose trends.

Throughout this report, drug overdose death rates include all drug types and all intents (unintentional, suicide, homicide, and undetermined) unless specifically mentioned otherwise.

Overall Trends

Drug overdose death rates increased over the past decade but have recently started to stabilize. Overall, Montana drug overdose deaths increased 37%, from 12.2 deaths per 100k residents in 2014 to 16.7

Figure 1. Drug overdose death rates increased nationally and in Montana but have leveled off since 2021.
US and Montana age-adjusted drug and opioid overdose death rates per 100k residents, 2014-2023



Notes: Shaded areas around the MT estimates represent the 95% confidence intervals. The MT overall age-adjusted drug overdose death rate was stable from 2014 to 2018, increased about 17% annually from 2018 to 2021, then was stable from 2021 to 2023 (p<0.05). The MT opioid-specific age-adjusted drug overdose death rate decreased about 22% annually from 2014 to 2016, increased about 23% annually from 2016 to 2021, then was stable from 2021 to 2023 (p<0.05).

US data: National Center for Health Statistics.[3,6] Montana data: Montana Vital Statistics[2]

deaths per 100k residents in 2023. The rate of change varied across this timeframe, with most increases occurring from 2018 to 2021 (Figure 1, Table 9). Rates have remained relatively stable from 2021 to 2023.

Drug overdose death rates in Montana were lower than the national rates but followed similar trends. In 2023, the Montana drug overdose death rate was about half that of the nation, which had a drug overdose death rate of 31.5 per 100k residents.

Opioid overdose death rates in Montana followed similar trends as the overall rate. Overall, opioid drug overdose deaths increased 117%, from 5.2 deaths per 100k residents in 2014 to 11.3 deaths per 100k residents in 2023. The rate of change has varied across this timeframe, with most increases occurring from 2016 to 2021 (Figure 1, Table 9). Rates have remained relatively stable from 2021 to 2023.

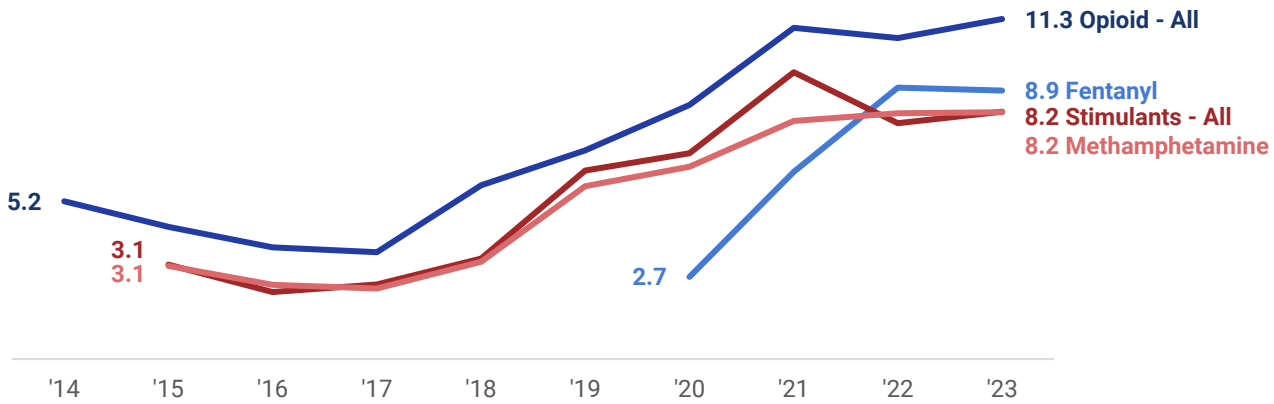
Drug Type

Drug overdose death rates were driven by fentanyl and methamphetamine (Figure 2).

Opioid drug overdose deaths increased from 5.2 deaths per 100k residents in 2014 to 11.3 deaths per 100k residents in 2023. This has mainly been driven by an increase in fentanyl-related deaths. Fentanyl-related overdose deaths were too low to calculate a rate until 2020, when the rate was 2.7 deaths per 100k residents. This has more than tripled to 8.9 deaths per 100k residents in 2023.

Similarly, stimulant drug overdose deaths increased from 3.1 deaths per 100k residents in 2014 to 8.2 deaths per 100k residents in 2023. This is mainly the result of deaths due methamphetamine. Overdose deaths involving methamphetamine had nearly equivalent overdose death rates as for all stimulants in most years, increasing from 3.1 deaths per 100k residents in 2014 to 8.2 deaths per 100k residents in 2023 (Figure 2).

Figure 2. Drug overdose death rates increased primarily due to fentanyl and methamphetamine.
Age-adjusted drug overdose death rates by drug type per 100k residents, 2014-2023



Notes: Analysis used a multiple-cause approach, so the sum of individual drugs will not add up to the total for all drugs. For example, a drug overdose death involving both stimulants and opioids would be counted in both stimulant and opioid rates. Rates for all opioids, all stimulants, and benzodiazepines were identified using an "any mention" search of the relevant ICD-10 codes within the multiple cause of death fields. Fentanyl and methamphatamine deaths were identified using keyword searches of drug overdose death records. Rates for fentanyl and bezodiazepines are not presented for all years because counts were too low to caculate rates (n<20) in some years. Some drugs are excluded from this chart due to low counts of overdose deaths. Information on additional drugs can be found in Tables 2-3.

Source: Montana Vital Statistics

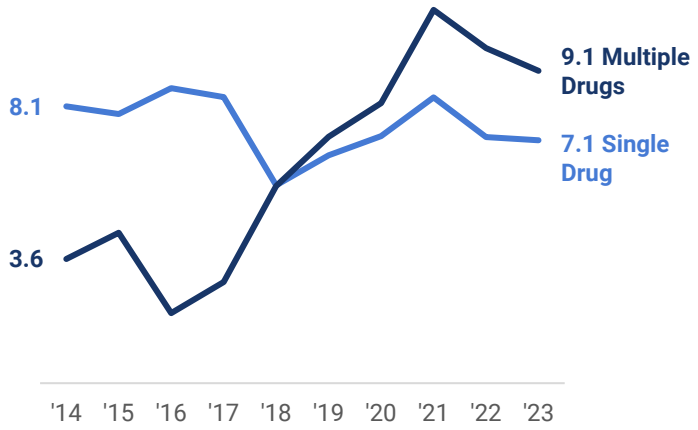
In some years, methamphetamine overdose death rates were slightly higher than the overall stimulant rate because methamphetamine-related overdoses were identified using a keyword search rather than an ICD-10 code. The keyword method was able to capture additional cases that did not receive a stimulant-related ICD-10 code. See the Methods section for further details.

Polydrug Fatalities

Drug overdose deaths that involve multiple drugs have risen since 2014. Until 2018, drug overdose deaths most commonly involved a single drug as cause of death. Since then, drug overdose deaths due to multiple drugs became more common than single drug overdose deaths (Figure 3). From 2019 to 2023, 55.2% of drug overdose deaths involved at least two drugs as contributing to the cause of death (Figure 4). This may be due to a combination of factors, such as increases in contamination of the drug supply, increases in people experiencing addiction to multiple substances, and improved coroner/medical examiner documentation of drugs involved in overdose deaths.

Figure 3. Drug overdose deaths involving multiple drugs have increased.

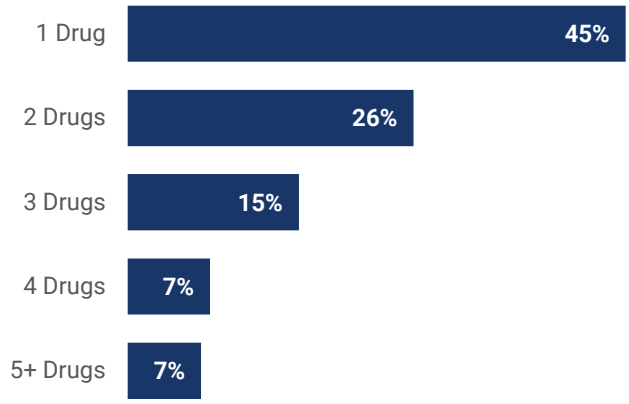
Age-adjusted drug overdose death rates by single/multiple drug involvement per 100k residents, 2014-2023



Source: Montana Vital Statistics

Figure 4. Drug overdose deaths since 2019 involved multiple drugs most of the time.

Percentage of drug overdose deaths by count of drugs involved, 2019-2023

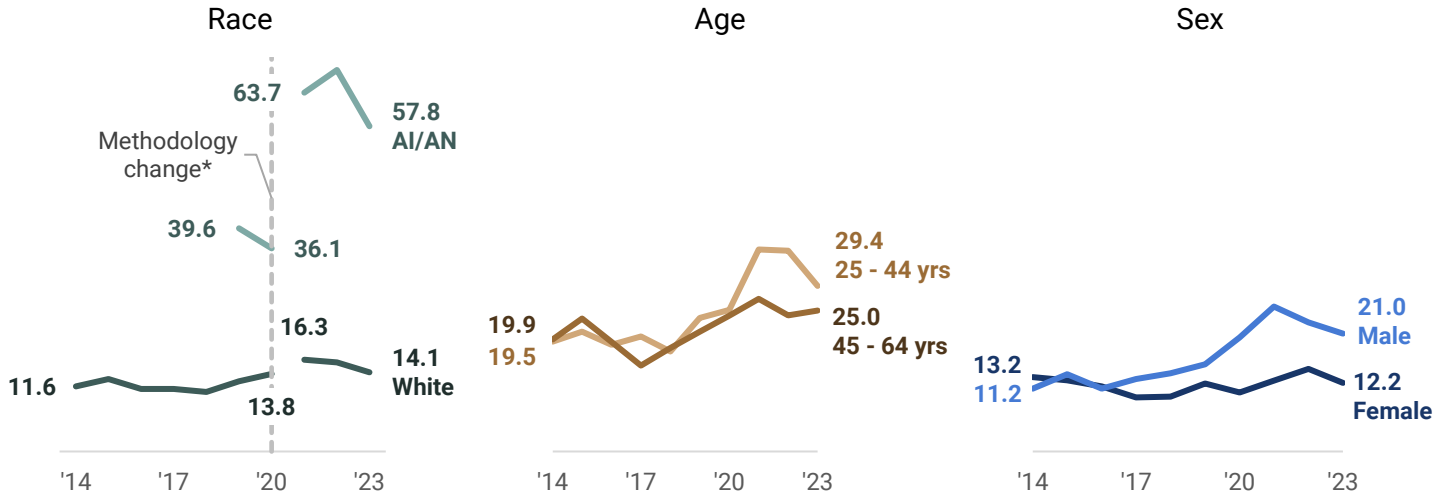


Source: Montana Vital Statistics

Demographics

Figure 5. American Indians, working-age adults (25-64 years), and men were most affected by drug overdose deaths.

Drug overdose death rates by demographic per 100k residents, 2014-2023



Notes: AI/AN: American Indian/Alaska Native. Sex- and race-specific rates are age-adjusted. Data for AI/AN (years 2014-2018), ≤24 years (all years), and 65+ years (all years) are not shown because counts were too low to calculate rates (n<20).

Source: Montana Vital Statistics

Race

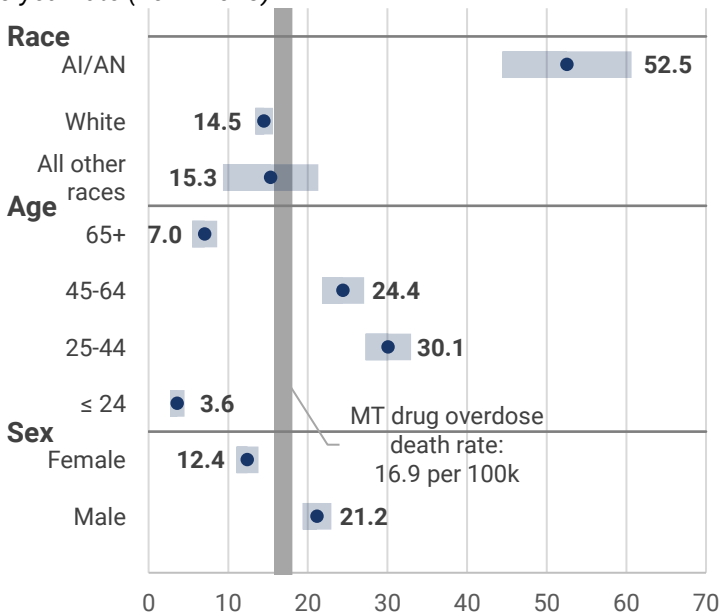
Drug overdose death rates among Montana American Indian/Alaska Native (AI/AN) people are much higher than other demographic groups (Figures 5-6). The age-adjusted death rate among AI/AN residents over the past five years (2019-2023) was over three times as high as the state rate (52.5 vs 16.9 deaths per 100,000 people, respectively, Figure 6). Due to changes in the methods of calculating population estimates for race, changes over time could not be assessed. See Limitations for further details.

Age

Drug overdose death rates remained relatively stable over time for most age groups. However, working-age adults (25-64 years) saw small increases in drug overdose death rates. For the 25-44 year-old age group, the drug overdose death rate increased from 19.5 deaths per 100k residents in

Figure 6. American Indians have a drug overdose death rate about three times higher than the state rate.

Drug overdose death rates by demographic per 100k residents, 5-year rate (2019-2023)



Notes: Sex- and race-specific rates are age-adjusted. Shaded bands around estimates represent 95% confidence intervals

Source: Montana Vital Statistics

2014 to 29.4 deaths per 100k residents in 2023. For the 45-64 year-old age group, the drug overdose death rate increased from 19.9 deaths per 100k residents in 2014 to 25.0 deaths per 100k residents in 2023 (Figure 5). From 2019-2023 combined, both the 25-44 and 45-64 year-old age groups had drug overdose death rates higher than the state rate (30.1 and 24.4 deaths per 100k residents, respectively; Figure 6).

Sex

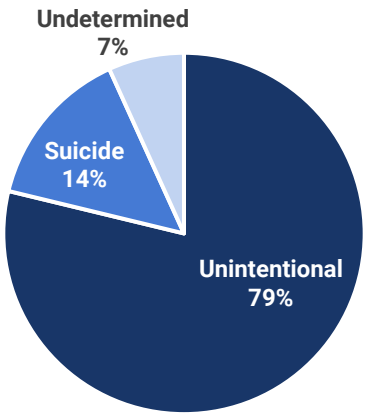
In Montana, the **drug overdose death rate for males increased** from 11.2 deaths per 100k residents in 2014 to 21.0 deaths per 100k residents in 2023 (Figure 5). They also had a higher drug overdose death rate than the state rate over the past five years (21.2 deaths per 100k residents from 2019-2023; Figure 6). In contrast, the drug overdose death rate for females remained relatively stable and below the state rate.

Intent

About 8 in 10 drug overdose deaths in the past ten years were unintentional (78.8%); the remaining were suicides (14.4%) or undetermined (6.8%; Figure 7). Unintentional drug overdose deaths increased from 7.4 deaths per 100k residents in 2014 to 15.0 deaths per 100k residents in 2023. In contrast, suicide drug overdose deaths declined from 2.9 deaths per 100k residents in 2014 to 2.2 deaths per 100k residents in 2020 (Figure 8). The number of undetermined drug overdose deaths has been less than ten annually since 2017 and may be a result of improved documentation, toxicology, and death investigation. Improved documentation may result in classifying more cases as unintentional, which may partially account for increases in unintentional drug overdose death rates. Only two homicide drug overdose deaths occurred during the 2014-2023 period.

Figure 7. Most drug overdose deaths are unintentional.

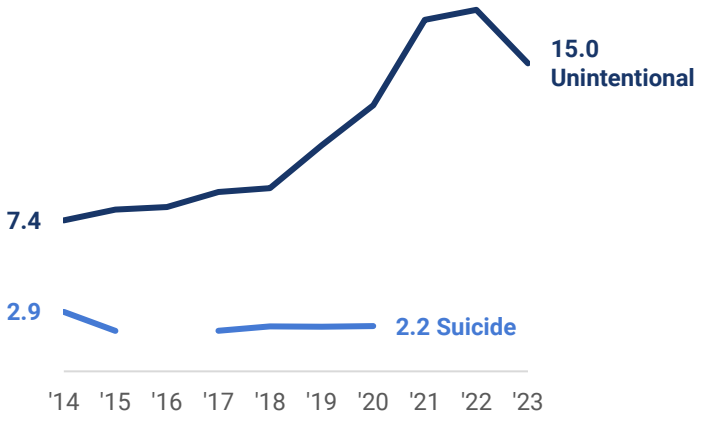
Proportion of drug overdose deaths by intent, 2014-2023



Source: Montana Vital Statistics

Figure 8. Increases in the drug overdose death rate have been mainly due to unintentional overdoses.

Age-adjusted drug overdose death rates by intent per 100k residents, 2014-2023



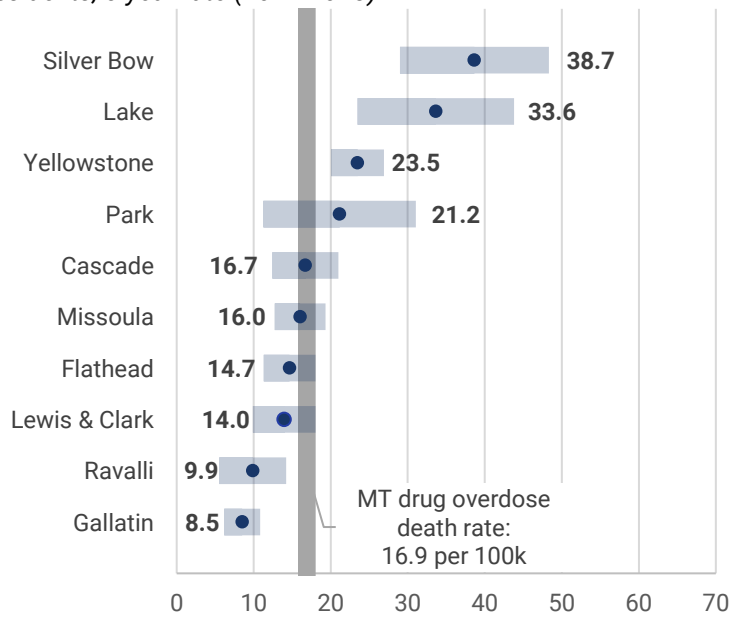
Notes: Only drug overdose death rates for unintentional and suicide intents are shown due to small counts among homicide and undetermined intents (n<20 per year). Suicide data for years 2021 to 2023 are also omitted due to small counts.

Source: Montana Vital Statistics

County

County-level analyses primarily focused on the past five years to provide a more current perspective on communities most affected by drug overdose deaths. Overall, ten counties in Montana had sufficient counts of drug overdose deaths from 2019 to 2023 to calculate a rate (n ≥ 20). Of these counties, **Silver Bow County had the highest drug overdose death rate** at 38.7 deaths per 100k residents, and Gallatin County had the lowest drug overdose death rate at 8.5 deaths per 100k residents. Silver Bow, Lake, and Yellowstone counties all had drug overdose death rates higher than the state rate (Figure 6). Most counties experienced an increase from the 2014-2018 rate to the 2019-2023 rate (Table 8).

Figure 9. Silver Bow, Lake, and Yellowstone counties have drug overdose death rates higher than the state rate.
Age-adjusted drug overdose death rates by county per 100k residents, 5-year rate (2019-2023)



Notes: Only counties with 20 or greater drug overdose deaths from 2019-2023 are shown. Shaded bands around each estimate represent the 95% confidence interval.

Source: Montana Vital Statistics

Nonresident Deaths

Fifty nonresident drug overdose deaths occurred in Montana from 2014 to 2023. The most common state of residence was Wyoming, with nine deaths (18%). The remaining states all had fewer than five residents die of a drug overdose in Montana. Nonresident drug overdose deaths were not included in the above analyses.

Discussion

While Montana consistently had a lower drug overdose death rate than the nation, it has followed a similar trend in the past ten years. The drug overdose death rate increased most sharply from 2017 to 2021 and has since leveled off. Fentanyl, methamphetamine, and polydrug use have driven the rise in drug overdose deaths in recent years. Despite the recent leveling off, rates are still higher than 2014 levels.

Recent analyses suggest that while COVID-19 may have played a role in increased drug overdose deaths, there is insufficient evidence to conclude that it was a major driver of this increase. Increases in drug overdose deaths began prior to the pandemic and any increases that occurred during the pandemic appear to be a continuation of this trend, which has been attributed to fentanyl at the national level.[7] Improved public health approaches to fentanyl may be influencing the recent leveling off of national drug overdose death rates; however this is an area in need of further study.

Drug overdose deaths have a greater impact on certain populations in Montana, particularly American Indians. Montana American Indians have experienced dramatic increases in their drug overdose death rate, which was over three times higher than the state rate from 2019-2023. Working-age adults and men also tend to experience higher rates of drug overdose deaths. This is similar to demographic differences observed nationally.[8]

Implementation of evidence-based practices can help to address and reduce the burden of drug overdose deaths.[9,10] A few examples of evidence-based strategies include (but are not limited to):

- Improving access to substance abuse treatment, including medications for opioid use disorder (MOUD). This can involve linkage to care efforts in settings such as emergency departments.
- Increasing availability of fentanyl test strips. Fentanyl test strips help to reduce risky drug use and overdose risk.
- Distributing naloxone to first responders and communities most at risk. Naloxone, an opioid overdose reversal drug, is widely available through pharmacies and community partners to prevent overdose deaths.

Methods

Data used in this report came from the Montana Office of Vital Records and were restricted to drug overdose deaths among Montana residents. The Montana Office of Vital Records also receives data on deaths to Montana residents who die out of state, but information on decedents who died in another jurisdiction may be incomplete; often only the underlying cause of death is reported. National studies reporting state-level information may differ from the number and rates reported in this publication. There were very few (n=50) drug overdose deaths among nonresidents, and these are described only briefly in this report.

Analysis included a total of 1,501 drug overdose deaths that occurred between 2014 and 2023 in Montana. Age-adjusted death rates were calculated with the direct method using the 2000 US standard population.[11] Some analyses combined multiple years to improve precision of estimates. Rates were not calculated for events with fewer than 20 observations and counts less than five were not shown. Data were analyzed using SAS 9.4.

Trend analyses were restricted to Montana overall and opioid-specific age-adjusted death rates. Statistical significance of trends was assessed using joinpoint weighted least squares regression models and followed guidelines provided by the National Center for Health Statistics (NCHS).[12] A log transformation was applied to the response variable (age-adjusted death rates) and all possible models using zero (linear trend), one, or two joinpoints were evaluated, using BIC as the model selection criteria. Statistical significance of trends was tested using an alpha level of 0.05.

Drug overdose deaths were defined as having an ICD-10 underlying cause of death code of X40-X44 (unintentional poisoning), X60-X64 (suicide by drug poisoning), X85 (homicide by drug poisoning), or Y10-Y14 (undetermined intent by drug poisoning).[13,14] Among deaths with an underlying cause of death of drug overdose, ICD-10 codes indicating the specific types of drugs involved were ascertained in the accompanying multiple cause of death fields. ICD-10 codes for specific drugs analyzed are in Table 1.

ICD-10 codes are unable to identify specific drugs involved in the cause of death, such as fentanyl and methamphetamine. Deaths involving these drugs were identified using keyword searches of drug overdose death records. At times, this captured additional cases where the ICD-10 code for the corresponding drug was not listed, often because the multiple cause of death fields were left blank. For example, a text field may state "methamphetamine overdose" but an ICD-10 code of T43.6 may be missing.

To determine counts of drugs involved in an overdose death, analysts counted the number of times an ICD-10 code in the range of T36-T50.8 appeared in the multiple cause of death fields.

Analyses calculated frequency and rates separately for each drug of interest mentioned on the death certificate. Medical examiners may list more than one drug on the death certificate, thus reported counts of specific drug deaths may exceed the total number of overdose deaths reported.

Limitations

- The information contained on death certificates is limited by the person certifying the event, their access to medical/legal records, autopsy results, and information provided by relatives, friends, or witnesses.
- There may be inconsistencies with coroner's and medical examiner's methodology in completing death certificate data.
- Not every overdose death receives an autopsy or has toxicologic testing, which means the specific substance(s) involved in a death may not be definitively known.

In recent years, the CDC has provided support for a new data source, the State Unintentional Drug Overdose Reporting System (SUDORS).[15] The SUDORS program collects data from death certificates and coroner/medical examiner reports, which include a variety of documents including autopsy reports, toxicology reports, and occasionally investigation summaries and scene descriptions. This dataset contains more complete and comprehensive information on drug overdose deaths in Montana. Because this dataset only goes back to 2019 it could not be used for this report. However, future 10-year drug overdose mortality reports will begin to use SUDORS as its data source.

Additionally, methodology for calculating population estimates for race changed in 2021, which prevented the ability to assess trends for race in this report. Prior to 2021, NCHS provided bridged race population estimates,

which were used for calculating rates. From 2021 onward, NCHS discontinued bridged race population estimates and rates are now based on single race population estimates.[16] This change can result in a meaningful shift in race estimates, particularly among American Indian/Alaska Native people. Rates cannot be compared across this change in methodology, so this analysis did not assess trends for racial subgroups.

Resources

Substance Use Disorder Services and Resources

Information on substance use in Montana and treatment information:

https://dphhs.mt.gov/bhdd/SubstanceAbuse/index

Behavioral Health Treatment Services Locator

A confidential and anonymous source of information for persons seeking treatment facilities in the United States for substance use and/or mental health problems:

https://findtreatment.gov/

Montana Suicide Prevention Lifeline

If you are in crisis and want help, please call, text, or chat the Montana Crisis Lifeline, 24/7, at 988.

Naloxone Resources

Information on accessing naloxone for yourself or your organization, and other guidance:

https://dphhs.mt.gov/BHDD/naloxone/

References

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Table 1. ICD-10 codes and labels for select drugs

ICD-10 Code	Literal text label and example from ICD-10 manual	Generic and brand name examples
T40.1	Heroin	
T40.2	**Other opioids** Codeine Morphine	Hydrocodone MS Contin™ Percocet™ OxyContin™ Vicodin™
T40.3	**Methadone**	Methadose™
T40.4	**Other synthetic narcotics**	Fentanyl Propoxyphene Meperidine Duragesic™ Darvan™ Demerol™
T40.5	**Cocaine**	
T40.6	**Other and unspecified narcotics**	
T40.7	**Cannabis (derivatives)**	
T42.4	**Benzodiazepines**	Alprazolam Ativan Valium Xanax™
T43.0	**Tricyclic and tetracyclic antidepressants**	Amitriptyline Doxepin Tofranil™
T43.2	**Other and unspecified antidepressants**	SSRIs Zoloft™ Prozac™
T43.6	**Psychostimulants with abuse potential (excludes cocaine)**	Methamphetamine Dexadrine Adderall™
T50.9	**Unspecified drug**	

Notes: [†]T40.2 “Other opioids” indicates opioids other than heroin or opium. T40.4 “Other synthetic narcotics” indicates synthetic opioids other than methadone, which is also synthetic. Adapted from a table by the Council of State and Territorial Epidemiologists Overdose Subcommittee.[17]

Table 2. Counts of drug overdose deaths by drug type mentioned, Montana residents, 2014-2023

ICD-10 Code[1]	Substance	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
T40.1	Heroin	†	5	5	8	21	26	29	20	†	5	123
T40.2	Codeine, morphine, and other opioids	22	23	11	21	21	24	35	27	31	26	241
T40.3	Methadone	16	6	8	†	†	10	†	†	10	11	76
T40.4	Other synthetic narcotics	13	7	10	6	10	16	30	72	86	92	342
T40.5	Cocaine	†	0	†	0	†	7	5	9	8	†	37
T40.6	Other and unspecified narcotics	†	†	5	7	11	†	18	16	†	†	74
T40.7	Cannabis	†	†	†	0	†	0	†	0	0	0	8
T42.4	Benzodiazepines	†	6	†	8	12	15	17	16	15	18	115
T43.0	Tricyclic/tetracyclic antidepressants	†	†	0	†	†	†	†	†	†	†	30
T43.2	Other/unspecified antidepressants	12	9	†	8	11	15	19	21	19	14	132
T43.6	Psychostimulants with abuse potential	6	30	20	24	30	57	65	87	79	88	486
T50.9	Unspecified drug	71	81	60	62	64	64	69	79	67	56	673
Keyword[2]	Fentanyl	6	6	11	6	8	10	26	62	95	93	323
Keyword	Methamphetamine	6	30	23	23	30	56	64	79	87	89	487
T40.0[3]-40.4, T40.6	All opioids	51	42	37	37	59	68	85	113	113	123	728
T40.5, T43.6	All stimulants	7	30	21	24	31	61	69	94	84	90	511
Multiple	**All drugs**	**123**	**133**	**117**	**116**	**123**	**141**	**161**	**198**	**204**	**185**	**1,501**

Notes: Analysis used a multiple-cause approach, so the sum of individual drugs will not add up to the total for all drugs. For example, a drug overdose death involving both stimulants and opioids would be counted in both stimulant and opioid counts.

[1]Counts were identified using an "any mention" search of the relevant ICD-10 codes within the multiple cause of death fields.

[2]Fentanyl and methamphatamine deaths were identified using keyword searches of drug overdose death records.

[3]Counts for all opioids included ICD-10 code T40.0 (opium) in its search, however it is not listed separately because there were no drug overdose death cases with this code.

† Counts too low to present (0<n<5).

Table 3. Rates of drug overdose deaths by drug type mentioned, Montana residents, 2014-2023

ICD-10 Code[1]	Substance	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
T40.1	Heroin	¥	¥	¥	¥	2.2 (1.2-3.2)	2.8 (1.7-3.9)	3.1 (2.0-4.3)	1.9 (1.1-2.8)	¥	¥	**1.3 (1.0-1.5)**
T40.2	Codeine, morphine, and other opioids	2.1 (1.2-3.1)	2.4 (1.4-3.4)	¥	2.0 (1.1-2.8)	1.9 (1.0-2.7)	2.2 (1.3-3.1)	3.1 (2.0-4.2)	2.7 (1.7-3.7)	2.9 (1.8-3.9)	2.1 (1.3-3.0)	**2.2 (1.9-2.5)**
T40.3	Methadone	¥	¥	¥	¥	¥	¥	¥	¥	¥	¥	**0.8 (0.6-0.9)**
T40.4	Other synthetic narcotics	¥	¥	¥	¥	¥	¥	3.2 (2.0-4.3)	7.1 (5.4-8.8)	8.1 (6.4-9.8)	8.8 (7.0-10.6)	**3.5 (3.1-3.8)**
T40.5	Cocaine	¥	¥	¥	¥	¥	¥	¥	¥	¥	¥	**0.4 (0.3-0.5)**
T40.6	Other and unspecified narcotics	¥	¥	¥	¥	¥	¥	¥	¥	¥	¥	**0.7 (0.6-0.9)**
T40.7	Cannabis	¥	¥	¥	¥	¥	¥	¥	¥	¥	¥	**¥**
T42.4	Benzodiazepines	¥	¥	¥	¥	¥	¥	¥	¥	¥	¥	**1.1 (0.9-1.3)**
T43.0	Tricyclic/tetracyclic antidepressants	¥	¥	¥	¥	¥	¥	¥	¥	¥	¥	**0.3 (0.2-0.4)**
T43.2	Other/unspecified antidepressants	¥	¥	¥	¥	¥	¥	¥	2.1 (1.2-3.0)	¥	¥	**1.2 (1.0-1.5)**
T43.6	Psychostimulants with abuse potential	¥	3.1 (2.0-4.3)	2.1 (1.2-3.1)	2.5 (1.4-3.5)	3.3 (2.1-4.4)	5.8 (4.3-7.4)	6.4 (4.8-8.1)	8.8 (6.9-10.7)	7.3 (5.7-9.0)	8.0 (6.3-9.7)	**4.9 (4.4-5.3)**
T50.9	Unspecified drug	7.1 (5.4-8.8)	7.6 (5.9-9.3)	5.7 (4.2-7.2)	5.9 (4.4-7.5)	6.0 (4.5-7.6)	6.2 (4.7-7.8)	6.3 (4.8-7.9)	7.8 (6.1-9.6)	6.1 (4.6-7.7)	4.8 (3.5-6.1)	**6.4 (5.9-6.9)**
Keyword[2]	Fentanyl	¥	¥	¥	¥	¥	¥	2.7 (1.7-3.8)	6.2 (4.7-7.8)	9.0 (7.2-10.9)	8.9 (7.1-10.8)	**3.3 (2.9-3.7)**
Keyword	Methamphetamine	¥	3.1 (2.0-4.2)	2.5 (1.4-3.5)	2.3 (1.3-3.3)	3.2 (2.1-4.4)	5.7 (4.2-7.3)	6.4 (4.8-8.0)	7.9 (6.1-9.7)	8.2 (6.4-9.9)	8.2 (6.5-9.9)	**4.9 (4.5-5.4)**
T40.0[3] - 40.4, T40.6	All opioids	5.2 (3.7-6.7)	4.4 (3.0-5.8)	3.7 (2.5-4.9)	3.6 (2.4-4.7)	5.8 (4.2-7.3)	6.9 (5.2-8.6)	8.4 (6.6-10.3)	11.0 (8.9-13.1)	10.7 (8.7-12.7)	11.3 (9.3-13.3)	**7.2 (6.7-7.7)**
T40.5, T43.6	All stimulants	¥	3.1 (2.0-4.3)	2.2 (1.3-3.2)	2.5 (1.4-3.5)	3.3 (2.1-4.5)	6.3 (4.7-7.9)	6.8 (5.2-8.5)	9.5 (7.6-11.5)	7.8 (6.1-9.6)	8.2 (6.5-10.0)	**5.2 (4.7-5.6)**
Multiple	**All drugs**	**12.2 (10.0-14.4)**	**13.2 (10.9-15.5)**	**11.4 (9.2-13.5)**	**11.3 (9.2-13.5)**	**11.9 (9.7-14.1)**	**13.9 (11.5-16.2)**	**15.4 (13.0-17.9)**	**19.4 (16.6-22.2)**	**18.9 (16.3-21.6)**	**16.7 (14.2-19.2)**	**14.5 (13.8-15.3)**

Notes: Analysis used a multiple-cause approach, so the sum of individual drugs will not add up to the total for all drugs. For example, a drug overdose death involving both stimulants and opioids would be counted in both stimulant and opioid counts. Rates are age-adjusted per 100k Montana residents. 95% confidence intervals are presented in parentheses.

[1]Counts were identified using an "any mention" search of the relevant ICD-10 codes within the multiple cause of death fields.

[2]Fentanyl and methamphatamine deaths were identified using keyword searches of drug overdose death records.

[3]Counts for all opioids included ICD-10 code T40.0 (opium) in its search, however it is not listed separately because there were no drug overdose death cases with this code.

¥ Insufficient counts to produce rates (n<20).

Table 4. Counts and rates of drug overdose deaths by number of drugs recorded, Montana residents, 2014-2023

Drug Count	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
					Count						
Single Drug	82	81	89	85	59	68	75	87	78	79	**783**
Multiple Drugs	36	43	20	31	60	73	86	110	106	101	**666**
					Rate						
Single Drug	8.1 (6.3-9.9)	7.9 (6.1-9.7)	8.6 (6.8-10.5)	8.4 (6.5-10.2)	5.8 (4.3-7.3)	6.7 (5.0-8.3)	7.2 (5.5-8.9)	8.4 (6.6-10.2)	7.2 (5.6-8.8)	7.1 (5.5-8.7)	**7.5 (7.0-8.1)**
Multiple Drugs	3.6 (2.4-4.9)	4.4 (3.0-5.8)	2.0 (1.1-3.0)	3.0 (1.9-4.1)	5.8 (4.2-7.3)	7.2 (5.5-8.9)	8.2 (6.4-10.0)	10.9 (8.8-13.0)	9.8 (7.9-11.7)	9.1 (7.3-11.0)	**6.5 (6.0-7.0)**

Notes: Rates are age-adjusted per 100k Montana residents. 95% confidence intervals are presented in parentheses. Excludes deaths where data on specific drugs involved were missing (n=52).

Table 5. Proportions of drug overdose deaths by number of drugs recorded, Montana residents, 2019-2023

Count of drugs involved in death	Count	Percent
1 Drug	387	44.8%
2 Drugs	222	25.7%
3 Drugs	133	15.4%
4 Drugs	64	7.4%
5+ Drugs	57	6.6%
Total	**863**	**100.0%**

Table 6. Counts of drug overdose deaths by selected characteristics, Montana residents, 2014-2023

Characteristic	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Race											
AI/AN	14	13	12	9	16	25	25	38	43	39	**234**
White	108	118	105	105	103	114	132	150	156	140	**1,231**
All other races	†	†	0	†	†	†	†	10	5	6	**36**
Age											
≤ 24 years	10	6	9	10	13	7	13	13	15	12	**108**
25-44 years	48	53	48	53	47	64	69	102	104	87	**675**
45-64 years	56	66	54	42	50	57	64	73	65	67	**594**
65+ years	9	8	6	11	13	13	15	10	20	19	**124**
Sex											
Female	67	61	60	50	51	63	53	68	81	69	**623**
Male	56	72	57	66	72	78	108	130	123	116	**878**
Intent											
Unintentional	72	80	82	90	90	108	133	175	188	164	**1182**
Suicide	30	21	17	20	25	26	26	17	14	19	**215**
Undetermined	21	31	17	6	8	7	†	6	†	†	**102**

Note: AI/AN: American Indian/Alaska Native.
† Counts too low to present (0<n<5).

Table 7. Rates of drug overdose deaths by selected characteristics, Montana residents, 2014-2023

Characteristic	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Race*											
AI/AN	¥	¥	¥	¥	¥	39.6 (23.3-56.0)	36.1 (21.5-50.7)	63.7 (43.1-84.4)	67.8 (47.1-88.5)	57.8 (39.4-76.2)	36.6 (31.7-41.4)
White	11.6 (9.3-13.8)	12.9 (10.5-15.3)	11.1 (8.9-13.3)	11.1 (8.9-13.3)	10.6 (8.5-12.7)	12.5 (10.1-14.8)	13.8 (11.3-16.2)	16.3 (13.6-19.0)	15.8 (13.3-18.4)	14.1 (11.7-16.5)	13.0 (12.3-13.8)
All other races	¥	¥	¥	¥	¥	¥	¥	¥	¥	¥	13.4 (8.8-17.9)
Age											
≤ 24 years	¥	¥	¥	¥	¥	¥	¥	¥	¥	¥	3.3 (2.7-3.9)
25-44 years	19.5 (14.0-25.1)	21.3 (15.5-27.0)	19.0 (13.6-24.3)	20.4 (14.9-25.9)	17.8 (12.7-22.8)	23.8 (17.9-29.6)	25.2 (19.2-31.1)	35.9 (28.9-42.9)	35.7 (28.8-42.5)	29.4 (23.3-35.6)	25.1 (23.2-27.0)
45-64 years	19.9 (14.7-25.1)	23.6 (17.9-29.3)	19.4 (14.3-24.6)	15.3 (10.6-19.9)	18.4 (13.3-23.5)	21.3 (15.7-26.8)	24.1 (18.2-30.0)	27.1 (20.9-33.3)	24.2 (18.3-30.0)	25.0 (19.0-31.0)	21.8 (20.0-23.6)
65+ years	¥	¥	¥	¥	¥	¥	¥	¥	8.9 (5.0-12.8)	¥	6.2 (5.1-7.3)
Sex											
Female	13.2 (9.9-16.6)	12.6 (9.3-15.9)	11.6 (8.5-14.7)	9.6 (6.8-12.4)	9.8 (7.0-12.6)	12.1 (8.9-15.2)	10.5 (7.6-13.4)	12.6 (9.5-15.7)	14.7 (11.4-18.0)	12.2 (9.2-15.2)	11.9 (10.9-12.9)
Male	11.2 (8.2-14.2)	13.7 (10.4-17.0)	11.2 (8.2-14.1)	12.9 (9.7-16.1)	13.9 (10.6-17.2)	15.5 (12.0-19.0)	20.2 (16.3-24.2)	25.8 (21.3-30.2)	22.9 (18.8-27.1)	21.0 (17.1-24.9)	17.0 (15.9-18.2)
Intent											
Unintentional	7.4 (5.6-9.1)	7.9 (6.1-9.7)	8.0 (6.2-9.8)	8.7 (6.9-10.6)	8.9 (7.0-10.8)	11.0 (8.9-13.1)	13.0 (10.7-15.2)	17.1 (14.5-19.7)	17.6 (15.0-20.2)	15.0 (12.7-17.4)	11.6 (10.9-12.3)
Suicide	2.9 (1.8-4.0)	2.0 (1.1-2.9)	¥	2.0 (1.1-2.9)	2.2 (1.3-3.1)	2.2 (1.3-3.0)	2.2 (1.3-3.1)	¥	¥	¥	1.9 (1.6-2.2)
Undetermined	1.9 (1.1-2.8)	3.2 (2.0-4.4)	¥	¥	¥	¥	¥	¥	¥	¥	1.0 (.8-1.2)

Notes: AI/AN: American Indian/Alaska Native. Rates for race, sex, and intent are age-adjusted per 100k Montana residents. 95% confidence intervals are presented in parentheses.

*Rates for racial groups before and after 2021 should not be compared due to differences in methodology. See Limitations for details.

¥ Insufficient counts to produce rates (n<20).

Table 8. Counts and rates of drug overdose deaths by county, Montana residents, 2014-2023

County	2014-2018 Count	2019-2023 Count	2014-2018 Rate	2019-2023 Rate
Beaverhead	†	†	¥	¥
Big Horn	8	13	¥	¥
Blaine	†	5	¥	¥
Broadwater	†	7	¥	¥
Carbon	9	6	¥	¥
Carter	0	0	¥	¥
Cascade	38	62	11.0 (7.4-14.6)	16.7 (12.4-21.0)
Chouteau	†	†	¥	¥
Custer	11	11	¥	¥
Daniels	†	0	¥	¥
Dawson	†	†	¥	¥
Deer Lodge	9	12	¥	¥
Fallon	0	†	¥	¥
Fergus	6	8	¥	¥
Flathead	64	79	13.2 (9.8-16.6)	14.7 (11.3-18.0)
Gallatin	30	54	5.7 (3.6-7.8)	8.5 (6.2-10.8)
Garfield	0	0	¥	¥
Glacier	9	18	¥	¥
Golden Valley	0	0	¥	¥
Granite	†	†	¥	¥
Hill	8	13	¥	¥
Jefferson	7	8	¥	¥
Judith Basin	0	0	¥	¥
Lake	27	45	21.3 (12.9-29.6)	33.6 (23.5-43.8)
Lewis & Clark	42	47	12.5 (8.5-16.4)	14.0 (9.9-18.0)
Liberty	0	†	¥	¥
Lincoln	6	11	¥	¥
McCone	0	0	¥	¥
Madison	5	†	¥	¥
Meagher	†	0	¥	¥
Mineral	5	†	¥	¥
Missoula	67	95	11.2 (8.4-14.0)	16.0 (12.7-19.3)
Musselshell	†	†	¥	¥
Park	14	20	¥	21.2 (11.3-31.1)
Petroleum	0	0	¥	¥
Phillips	0	†	¥	¥
Pondera	†	†	¥	¥
Powder River	†	0	¥	¥
Powell	7	8	¥	¥
Prairie	0	0	¥	¥
Ravalli	23	23	10.4 (5.7-15.1)	9.9 (5.5-14.2)
Richland	6	8	¥	¥
Roosevelt	12	14	¥	¥
Rosebud	0	9	¥	¥
Sanders	†	12	¥	¥
Sheridan	†	†	¥	¥
Silver Bow	35	66	19.3 (12.5-26.1)	38.7 (29.0-48.3)
Stillwater	†	†	¥	¥
Sweet Grass	†	†	¥	¥
Teton	6	†	¥	¥

County	2014-2018 Count	2019-2023 Count	2014-2018 Rate	2019-2023 Rate
Toole	ŧ	ŧ	¥	¥
Treasure	0	0	¥	¥
Valley	ŧ	7	¥	¥
Wheatland	ŧ	ŧ	¥	¥
Wibaux	ŧ	0	¥	¥
Yellowstone	114	187	14.6 (11.9-17.4)	23.5 (20.0-26.9)

Notes: Rates are age-adjusted per 100k residents. 95% confidence intervals are presented in parentheses.

ŧ Counts too low to present (n<5).

¥ Insufficient counts to produce rates (n<20).

Table 9. Results of joinpoint regression modelling

Regression model line segments	Slope	Standard Error	*p* value of test that slope=0
Overall			
2014-2018	-0.023	0.016	0.212
2018-2021	0.174	0.019	0.000
2021-2023	-0.063	0.030	0.080
Opioid			
2014-2016	-0.218	0.052	0.006
2016-2021	0.230	0.017	0.000
2021-2023	0.014	0.034	0.695

Notes: 0.000 quantity more than zero but less than 0.0005. Joinpoint regression was run with a minimum of zero (linear trend) and maximum of two joinpoints. All possible models were assessed, using BIC to select the best model. Statistical tests used an overall alpha level of 0.05.