

Summary of Methamphetamine Use in Montana

Background

What is methamphetamine?

Methamphetamine is a powerful and addictive stimulant that affects the central nervous system. The use of methamphetamine may result in increased activity and talkativeness, decreased appetite, and a pleasurable sense of well-being or euphoria. It may be injected, snorted, smoked, or ingested orally. Also known as meth or crystal, methamphetamine is a white, odorless, bitter-tasting crystalline powder that can be dissolved easily in water or alcohol.¹

Methamphetamine is classified by the US Drug Enforcement Administration (DEA) as a Schedule II substance. Methamphetamine-based medications have limited medical use in the form of treatment for attention deficient hyperactivity disorder (ADHD) and to some extent as a weight-loss aid, but it is rarely prescribed. These methamphetamine-based medications should not be confused with the more commonly prescribed dextroamphetamine-based medications. Use of methamphetamine is associated with a wide range of negative health consequences, including psychosis, cardiovascular and renal dysfunction, infectious disease transmission, and overdose.

National methamphetamine use

Methamphetamine use and overdose mortality increased from 2015 to 2019, nationally. Overdose deaths involving methamphetamine increased 180% and use increased 43% during this time frame. Though methamphetamine use among adults has increased in recent years, the percent of high school students who report ever using methamphetamines in their lifetime continues to decline.

Purpose

This report provides an update to a 2020 surveillance report on methamphetamine use in Montana.⁶

Data appendix

The datasets used in this document did not all have standard methodology for identifying a methamphetamine-related event. In some cases, stimulant-use was a stand-in for methamphetamine. A data appendix containing a description of the dataset, the definition used to identify methamphetamine, limitations to the dataset and definition, as well as any additional notes is found at the end of this report for reference.

State Epidemiology Outcomes Workgroup

PO Box 202951

Helena, Montana 59620-2951

victoria.troeger@mt.gov



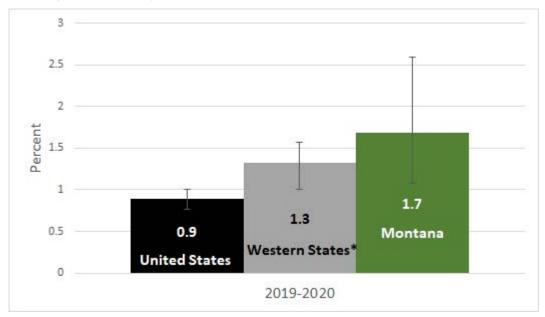


Methamphetamine Use in Montana

Prevalence

Challenges encountered during the COVID-19 pandemic caused the National Survey on Drug Use and Health to undergo methodological changes in data collection in 2020. Due to this, comparison of 2020 to prior years should be done with caution. Nevertheless, Montana and other Western states continue to have higher percentages of adults reporting methamphetamine use compared to the rest of the nation (Figure 1). In 2019-2020, 1.7% of Montana adults used methamphetamine in the last year.⁷

Figure 1. Self-Reported Past-Year Methamphetamine Use Among Adults Aged 18+, **United States, Western States***, and **Montana**, 2016-2020



^{*}Western States: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Data source: National Survey on Drug Use and Health, 2016-2020

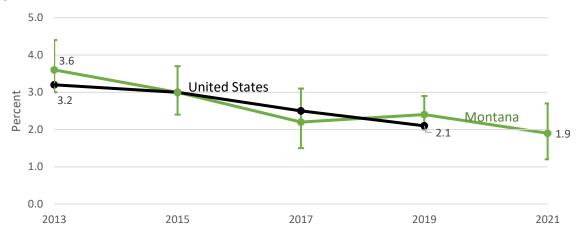
The percentage of Montana high school students who reported ever using methamphetamine at any point in their lifetime decreased from 3.6% in 2013 to 1.9% in 2021 (Figure 2).8 Students who reported using methamphetamine were more likely than students who had not used methamphetamine to binge drink (52% vs 16%) and misuse prescription medication (67% vs 11%).9



¹2020 estimates should be compared to prior years with caution due to methodological changes in data collection due to the COVID-19 pandemic



Figure 2. Lifetime Methamphetamine Use Among High School Students, Montana and United States, 2013-2021



Youth Risk Behavior Survey, 2013-2021

Mortality

Estimating the number of methamphetamine-related deaths using only death certificates is complicated. This is due, in part, by the lack of an International Classification of Disease Tenth Revision (ICD-10) code that is directly associated with methamphetamine. For this report, deaths with a contributing cause of death ICD-10 code implicating psychostimulants with abuse potential, which includes substances such as amphetamines, Ecstasy, MDMA, and caffeine, were considered a methamphetamine death. Montana received funding for the collection of comprehensive data gleaned from death certificates and medical examiner/coroner reports to compile into the State Unintentional Overdose Reporting System (SUDORS) in 2019. This allows for better identification of specific substances, such as methamphetamine itself, in an overdose death.

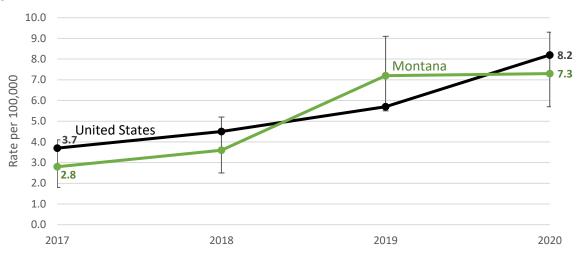
From 2017 to 2020, the age-adjusted rate of methamphetamine-related overdose has increased in Montana by 161% (Figure 3). Montana's death rate increased along with the United States as a whole; there is no statistically significant difference between Montana and the rest of the nation's methamphetamine-related death rate. 10,11

The number of overdose deaths has increased among Montana residents in recent years from all substances, and methamphetamine is one of the top substances identified in those deaths. In 2020, methamphetamine was found in 48% of all drug overdose deaths in Montana, and 23% of all overdoses in the state were due to methamphetamine alone.¹²





Figure 3. Age-adjusted Methamphetamine*-related Death Rate, Montana and United States, 2017-2020

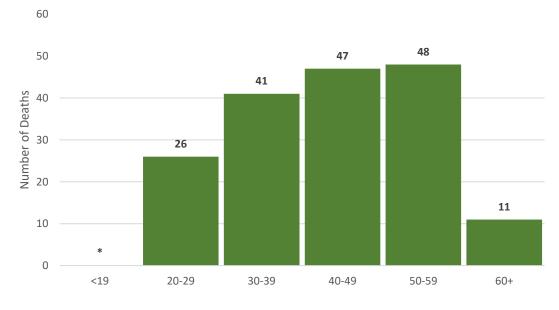


Data source: CDC Wonder, 2017-2020

*ICD-10 Code: T43.6; includes methamphetamine, MDMA, Ritalin, caffeine

Decedents from methamphetamine-related deaths between 2017 and 2020 were predominantly male (67%). From 2015-2018, the greatest number of deaths occurred among the age groups 30-39 and 40-49; however, from 2017-2020 the age groups 40-49 and 50-59 had the most deaths (Figure 4). 6,10

Figure 4. Age at Death for Methamphetamine*-related Deaths Among Montana Residents, 2017-2020



Montana Vital Statistics, 2017-2020

*ICD-10 Code: T43.6; includes methamphetamine, MDMA, Ritalin, caffeine

[†]Counts <5 suppressed





Hospitalizations, Emergency Department (ED) Visits, and Emergency Medical Services (EMS) Responses

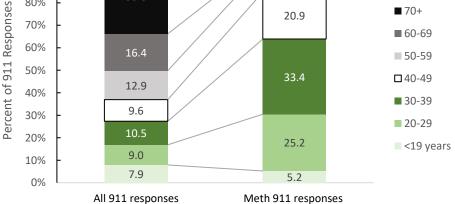
Stimulant-related emergency department (ED) visits and hospital admissions represent a small proportion of all hospital visits statewide. However, these visits are increasing each year; the proportion of ED visits increased from 0.8% in 2018 to 1.1% in 2020 (from 2,478 to 3,028 ED visits, respectively) and hospital admissions increased from 1.7% in 2018 to 2.0% in 2020 (from 1,726 to 1,776 admissions, respectively). From 2018-2020, inpatient hospitalizations were split evenly between male and female (48.6% and 51.4%, respectively) and patients aged 20-39 years represented the majority (56.0%) of admissions. Patients from small metro areas, defined as areas with less than 250,000 people, represented 59.6% of stimulant-related inpatients. In the control of the proportion of ED visits increased from 0.8% in 2018 to 2.0% in 2020 (from 2,478 to 3,028 ED visits, respectively) and hospital admissions increased from 1.7% in 2018 to 2.0% in 2020 (from 1,726 to 1,776 admissions, respectively). The proportion of ED visits increased from 0.8% in 2018 to 2.0% in 2020 (from 2,478 to 3,028 ED visits, respectively) and hospital admissions increased from 1.7% in 2018 to 2.0% in 2020 (from 2,478 to 3,028 ED visits, respectively). The proportion of ED visits increased from 0.8% in 2018 to 2.0% in 2020 (from 2,478 to 3,028 ED visits, respectively). The proportion of ED visits increased from 0.8% in 2018 to 2.0% in 2020 (from 2,478 to 3,028 ED visits, respectively). The proportion of ED visits increased from 0.8% in 2018 to 2.0% in 2020 (from 2,478 to 3,028 ED visits, respectively). The proportion of ED visits increased from 0.8% in 2018 to 2.0% in 2020 (from 2,478 to 3,028 ED visits, respectively). The proportion of ED visits increased from 0.8% in 2018 to 2.0% in 2020 (from 2,478 to 3,028 ED visits, respectively). The proportion of ED visits increased from 0.8% in 2020 (from 2,478 to 3,028 ED visits, respectively). The proportion of ED visits increased from 0.8% in 2020 (from 2,478 to 2,020 (from 2,478 to 2,020 (from 2,478 to 2,0

In Montana, the total costs associated with stimulant-related hospitalizations and ED visits continues to grow, from 39 million dollars in 2018 to over 48 million in 2020. The average cost to treat an individual patient grew from \$9,303 in 2018 to \$10,097 in 2020; this, combined with more patients seeking medical care for stimulant-related incidents is likely driving the growing cost burden.¹³

From January 2020 to December 2021 there were 2,452 methamphetamine-related 911 responses, representing 1% of all EMS runs in Montana. Though they represent a small proportion of all EMS responses, this was a 30.6% increase in methamphetamine-related responses compared to 2018-2019 (Data not shown). Slightly more males than females needed EMS services for methamphetamine-related events (55.8% male, 42.4% female, 1.8% not reported), and persons involved in these events were disproportionately young compared to the general EMS patient population (Figure 5). From 2020 to 2021, Montanans aged 20-29 years represented 9.0% of all 911 responses but accounted for 25.2% of all methamphetamine-related 911 responses. This trend was also observed for Montanans aged 30-39 (10.5% vs 33.4%) and 40-49 years (9.6% vs 20.9%).

100% 90% 50 80% 10.8 10.8 10.8 20.9 16.4

Figure 5. Percentage of 911 Responses by Age, Montana, 2020-2021



Montana EMS data, 2020-2021

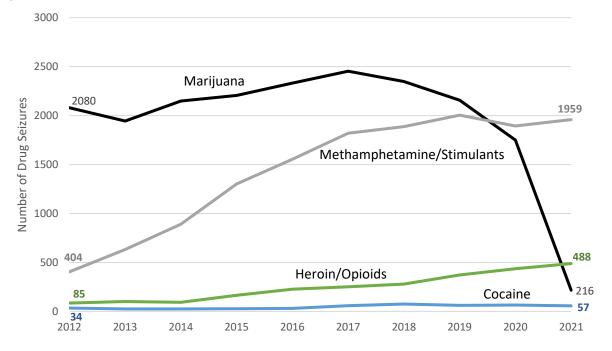




Drug Seizures

From 2012-2021, there was a 385% increase in the number of methamphetamine and stimulant seizures in Montana. While heroin and other opioid seizures saw a greater percentage increase during the same period (474%), methamphetamine and stimulants made up the majority of drug seizures for all years reported aside from marijuana (Figure 6).¹⁵

Figure 6. Drug Seizures by Year and Drug Type, Montana, 2012-2020



Montana Incident Based Reporting System (MTIBRS), 2012-2021

According to the Montana Department of Justice's Forensic Science Division, methamphetamine remains the drug most frequently encountered by local law enforcement and the largest drug threat in Montana. Seizure amounts in 2021 were down significantly compared to 2020. Most of the meth-related interdictions resulted in user-amounts, indicative of the seizures occurring after major traffickers distributed to local dealers or users.

In 2020, 23% of drug fatalities occurred among Montanans using methamphetamine alone. However, the impact of polysubstance use and increasing fentanyl-contamination of the drug supply should not be overlooked. Seizures involving meth accounted for most highway interdiction felony arrests in 2021 and were primarily polydrug interdictions. The most common polydrug combination was meth paired with heroin. Studies show that combined methamphetamine and opioid use increase the odds of nonfatal overdose compared to opioid or methamphetamine use alone, and overdose deaths in Montana with both methamphetamine and opioids implicated have risen in recent years. ^{17,18}





Implications of COVID and Opioid Epidemic

Interviews conducted among people who use drugs in rural areas of Washington found that the COVID-19 pandemic impacted their mental health and substance use patterns in negative ways. ¹⁹ The strategies used to keep people safe from SARS-CoV-2 (the virus which causes COVID-19 disease) infection and transmission lead to greater feelings of isolation, worsening mental health, and an increased risk of using substances alone and subsequent overdose. Rural areas such as Montana already face lack of access to substance use treatment options, and fears of COVID-19 transmission in inpatient settings or lack of interest in seeking treatment due a desire to self-medicate through stressful times were also cited as reasons people halted or did not receive treatment for their substance use disorder. ¹⁹

Treatment and Opportunities

Although there are some effective medications for treating some substance use disorders, there are no current medications specifically for treating methamphetamine use disorders. Most treatments for methamphetamine addiction are behavioral.²⁰ A common behavioral treatment is contingency management (CM), a technique employing the systematic delivery of positive reinforcement for desired behaviors, such as awarding vouchers or prizes when patients submit methamphetamine-free urine samples. Other treatment methodologies that have some empirical evidence include Cognitive Behavioral Therapy (CBT) and the Matrix Model, which combines several treatment styles including CM, CBT, and 12-step groups and meetings. Treatment for methamphetamine misuse may be complicated by several factors such as polydrug use and mental illness, which require targeted treatment options.²¹

Montana has <u>nine</u> residential treatment facilities that can provide inpatient treatment for substance use disorders, including methamphetamine. In addition, there are six non-hospital inpatient residential facilities that can provide high-level care for those in treatment.²²

In addition, the Montana Department of Public Health and Human Services (DPHHS) received approval from the Centers for Medicare and Medicaid Services to expand available behavioral health treatment for Medicaid Members. This application, called the "Healing and Ending Addiction through Recovery and Treatment" (HEART) "enables the state to receive federal financial participation for state plan services provided to otherwise-eligible Medicaid beneficiaries, age 18--64 years, who are primarily receiving treatment and withdrawal management services for substance use disorder (SUD) while residing in residential and inpatient settings that qualify as institutions for mental diseases (IMD)."²³ This will allow for more Montanans to access SUD treatment that may otherwise have been not covered by insurance.

DPHHS recently received funding from SAMHSA's State Opioid Response (SOR) grant to expand the use of evidence-based treatment modalities in Montana. While the focus of this grant is opioids, funds may also be used to support evidence-based prevention, treatment and recovery support services to address stimulant misuse and use disorders, including for cocaine and methamphetamine. DPHHS is also working with the original developers of the Matrix model to participate in a pilot project to update the model, now called the TRUST (Treatment of Users of Stimulants) protocol.²⁴





Conclusions

Summary of data findings

Data summarized in this report show that methamphetamine use continues to be a public health concern in Montana. Methamphetamine mortality continues to rise; hospitalizations and ED visits due to methamphetamine use are also increasing. Most methamphetamine-related deaths occur among males (67%), while hospitalizations and ED visits occur among both males and females. While representing only 1% of all 911 EMS responses, methamphetamine-related calls increased 30% from 2020-2021 compared to 2018-2019. This, combined with a rise in the cost of caring for patients hospitalized for methamphetamine-related events shows the burden that this substance has on the medical system in the state.

Data gaps and challenges

The data gaps outlined in the prior summary <u>report</u> remain the same. ⁶ Accurate information on methamphetamine-related deaths, emergency department visits, and hospitalizations are hindered by the lack of ICD-10 diagnostic codes specific to methamphetamine use (see data appendix). Stigmatized behaviors such as drug misuse are underreported in survey data, so prevalence of methamphetamine use along with demographic information is difficult to obtain.

Moving forward, it is important to continue monitoring methamphetamine when conducting surveillance of drug overdose events and prevalence of use.





Know the Signs and Symptoms of an Overdose

Chronic methamphetamine use can permanently damage the heart and brain; damage the liver, kidneys, and lungs; lead to anxiety, confusion, and insomnia; create changes in personality or mental state; as well as lead to dental problems and premature osteoporosis.²⁵

Common signs of an acute methamphetamine overdose include:

- Enlarged pupils
- Rapid, slowed, or irregular heart rate
- Difficulty breathing
- Chest pains
- High body temperature
- Stomach pain
- Altered mental status, agitation, or paranoia

An acute overdose can be life-threatening, securing medical attention as quickly as possible is important. Risk factors that may increase the risk of overdosing on methamphetamine include:

- Mixing methamphetamine with other drugs and alcohol
- Using large amounts of methamphetamine
- Injecting methamphetamine
- Having pre-existing health conditions, such as hypertension

Many people who could benefit from treatment do not know they have an addiction or do not think treatment will work for them. However, with the right treatment plan, recovery is possible.

If you, or someone you know, need help to stop using substances – whether the problem is methamphetamine, alcohol or another drug – there are services available to you.

SAMHSA's National Helpline: 1-800-662-HELP (4357) or TTY: 1-800-487-4889, or text your zip code to 435748 (HELP4U) or use the SAMHSA Behavioral Health Treatment Services Locator to get help.²⁶





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Data Appendix

Mortality Data	
Data Source	
Vital Statistics (Montana)	<u>Description</u> : The Montana Office of Vital Records collects data on six vital events that are required to be reported and maintained by law; live births, deaths, fetal deaths, induced abortion, marriage, and divorce.
	 Definition: Methamphetamine deaths were defined as a death by a Montana resident with an underlying cause of death ICD-10 code: X40-X44 (accidental poisoning), or X60-X64 (intentional self-poisoning), or X85 (assault by poisoning), or Y10-Y14 (poisoning with unknown intent) that included a contributing cause of death code of: T43.6 (psychostimulant with abuse potential) Limitations: There is no ICD-10 code that is directly associated with methamphetamine. Methamphetamine falls within the class of "psychostimulants with abuse potential," which contains other substances such as amphetamines, Ecstasy, MDMA, and caffeine.
	Notes: For this report, all deaths with a code of T43.6 were referred to as a methamphetamine-related death, not a 'psychostimulant-related death.'
CDC WONDER— Underlying Cause of	<u>Description</u> : CDC Wonder is an integrated information and communication system for public health. The Underlying Cause of Death database contains mortality and population counts for all U.S. counties based on death certificates for U.S. residents.
Death (United States,	<u>Definition</u> : Methamphetamine deaths were queried using the "Drug/Alcohol Induced Causes: Drug Induced Causes" and MCD-ICD-10 Code T43.6
Montana)	<u>Limitations</u> : There is no ICD-10 code that is directly associated with methamphetamine. Methamphetamine falls within the class of "psychostimulants with abuse potential," which contains other substances such as amphetamines, Ecstasy, MDMA, and caffeine.
	Notes: For this report, all deaths with a code of T43.6 were referred to as a methamphetamine-related death, not a 'psychostimulant-related death.'
State	<u>Description:</u> SUDORS incorporates multiple data sources, such as death certificates, medical
Unintentional	examiner/coroner reports, and postmortem toxicology to help researchers gain a better understanding
Drug	of the circumstances that surround unintentional overdose deaths.
Overdose	Definition: Deaths with a direct mention of "methamphotamine" in toxical aguranarts, either as a
Reporting System (SUDORS)	<u>Definition:</u> Deaths with a direct mention of "methamphetamine" in toxicology reports, either as a causative or contributing agent, were included.
(Montana)	<u>Limitations:</u> SUDORS data is relatively new; data collection began in 2019, with 2020 being the first full calendar year of data available.





Prevalence Data

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National Survey on Drug Use and Health (NSDUH)

<u>Description</u>: NSDUH is an annual survey of the civilian, noninstitutionalized population of the United States aged 12 years and older. State and regional estimates are based on small area estimation (SAE) methodology in which state-level NSDUH data are combined with county and census block group/tract-level data from the state.

(United States, Western States, Montana)

<u>Definition</u>: Questions about methamphetamine were prefaced by the statement: "Methamphetamine, also known as crank, ice, crystal meth, speed, glass, and many other names, is a stimulant that usually comes in crystal or powder forms. It can be smoked, 'snorted,' swallowed or injected." <u>Limitations</u>: Survey responses about stigmatized behavior such as illicit drug use may suffer from underreporting.

Youth Risk Behavior Surveillance System (YRBSS) (United States, Montana)

<u>Description</u>: The YRBSS monitors six categories of health-related behaviors through a national school-based survey conducted by the CDC and state, territorial, tribal and local agencies and tribal governments.

<u>Definition</u>: The question about methamphetamine also lists the drug as being called "speed, crystal meth, crank, ice, or meth."

<u>Limitations</u>: These data apply only to youth who attend school and, therefore, are not representative of all persons in this age group. Survey responses about stigmatized behavior such as illicit drug use may suffer from underreporting. Paradoxically, some teens may overreport stigmatized behavior as a joke.

Morbidity Data

Data Source

Hospital Discharge Data System (Montana)

<u>Description</u>: These data are a subset of inpatient admission (2000 onward) and emergency department (2010 onward) data elements based on the Uniform Billing 2004 form (UB-04). Large Montana hospitals all submit data annually, most critical access hospitals also submit data; this captures an estimated 95% of admissions in Montana, and include demographic elements, health related elements, and billing elements.

<u>Definition</u>: Patients with an ICD-10-CM code of:

- T43.62[1-4][BLANK or A] (amphetamine poisoning)
- F15.[129][0,2,4-9] (other stimulant dependence, uncomplicated)

<u>Limitations</u>: These data do not include Montana residents hospitalized out of state and does not include information from federal facilities such as Indian Health Service hospitals or Veterans Affairs hospitals. It also does not include data from the Montana State Hospital. There is no direct code that corresponds to just methamphetamine.

<u>Notes</u>: For this report, patients with the abovementioned ICD-10-CM codes were considered a methamphetamine case.





Emergency Medical Services (EMS) Data (Montana)

<u>Description</u>: Montana statute requires all ambulance (ground and air) services licensed in the state to submit a patient care report (PCR) for each patient encountered during an EMS activation. These PCRs must be compliant with National Emergency Medical Services Information System (NEMSIS) standards.

<u>Definition</u>: Methamphetamine-related cases were defined as:

- Incident location in Montana
- Type of service requested (eResponse.05)= 2205001 "911 Response (Scene)"
- Narrative (eNarrative.01) or chief/secondary complaint (eSituation.04) contains "meth" or "methamphetamine". Certain phrases are ignored, for example: "methadone", "denies meth use", "draw sheet method", phrases associated with "Methodist" hospitals or other locations with "meth" in the name

<u>Limitations</u>: These criteria identify overdose, use, treatment, withdrawal, or history of methamphetamine use based on terms or phrases found in the record narrative, which is a free text entry field. There is no ICD-10-CM code specific to methamphetamine use/abuse, so the provider impressions (which are ICD-10-CM coded fields) cannot be used to conclusively identify methamphetamine-related incidents.

Impact Data Data Source National Description: Around 108 of Montana's 135 active law enforcement agencies report their crime data Incident into NIBRS. This system counts offenses and victims, and up to 10 different drug types can be Based reported on a single criminal incident. Reporting System <u>Definition</u>: Crimes referring to methamphetamine were counted. (NIBRS) (Montana) Limitations: Not all crimes are reported to the police, national surveys suggest 50% of property crime and 80% of all crimes are reported. Not all agencies in Montana report to NIBRS, including tribal law enforcement.

