

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 stimulant. Amphetamine-based medications have limited medical use in the form of treatment for attention deficit hyperactivity disorder (ADHD) and to some extent as a weight-loss aid, but it is rarely prescribed.² These methamphetamine-based medications should not be confused with the more commonly prescribed dextroamphetamine-based medications which are used in the treatment of narcolepsy and attention deficit hyperactivity disorder. Use of methamphetamine is associated with a wide range of negative health consequences, including psychosis, cardiovascular and renal dysfunction, infectious disease transmission, and overdose.³

National methamphetamine use

Nationally, the prevalence of methamphetamine use among adults has remained steady in recent years, although the availability of the drug and its involvement in overdose deaths has seen an increase.³ The 2017-2018 National Survey on Drug Use and Health (NSDUH) estimated that 0.69% (95% CI [0.63%, 0.76%]) of adults in the United States used methamphetamine in the last year, with significantly higher usage in western states (1.01%; (95% CI [0.84%, 1.21%])).⁴ Conversely, the percentage of US high school students who report having ever used methamphetamines has declined steadily since peaking in the early 2000s.⁵

Purpose

This report describes what is known about illicit methamphetamine use in Montana, given the available data. This report also identifies data limitations and gaps relevant to illicit methamphetamine surveillance in the state.

Data appendix

The datasets used in this document did not all have a standard methodology for identifying a methamphetamine-related death. 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 can be found at the end of this report for reference.

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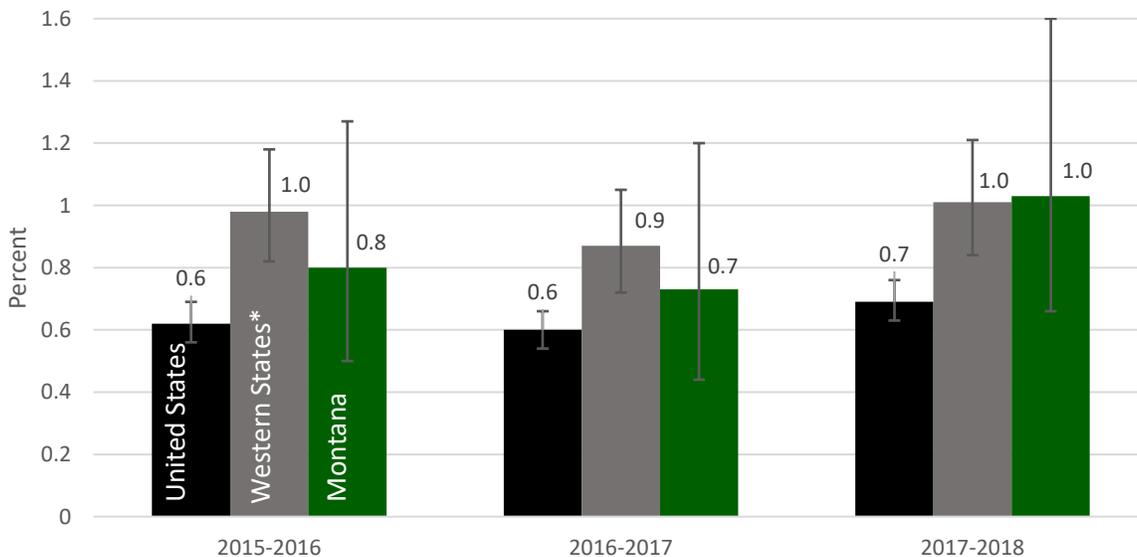


Methamphetamine Use in Montana

Prevalence

In 2017-2018, 1% of Montana adult residents reported using methamphetamine in the past year (Figure 1). Since 2015, methamphetamine use in the past year was significantly higher in the western United States (US) than the rest of the country. Montana observed an increase in the prevalence of methamphetamine use among adults (aged 18 years and older) from 2015-2016 to 2017-2018, however this increase was not statistically significant. The prevalence of methamphetamine use in Montana was not significantly higher than the rest of the US during this time period (Figure 1).

Figure 1. Self-Reported Past-Year Methamphetamine Use Among Adults aged 18+, United States, Western States*, and Montana, 2015-2018

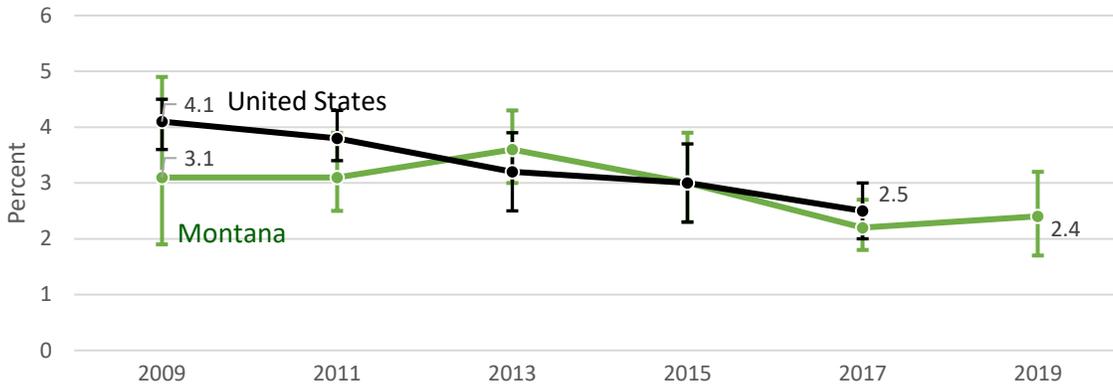


*Western States: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

National Survey on Drug Use and Health, 2015-2018

The percentage of Montana high school students who reported ever using methamphetamine in their lifetime declined over the past decade (2009-2019), following national trends, though this decline was not statistically significant (Figure 2).⁶ Furthermore, the percentage of Montana teens that reported methamphetamine use in the last month decreased by half since 2012, dropping from 0.4% in 2012 to 0.2% in 2018.⁷

Figure 2. Lifetime Methamphetamine Use Among High School Students, Montana and United States, 2009-2019



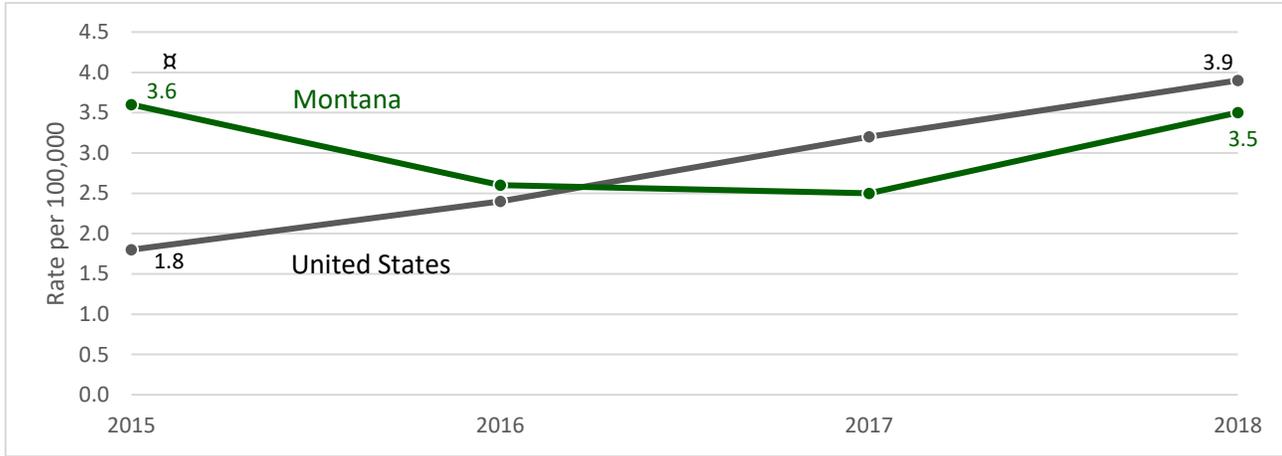
Youth Risk Behavior Survey, 2009-2019

Mortality

Estimating the number of methamphetamine-related deaths 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 the purpose of 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-related death.

Since 2009, the number of methamphetamine-related deaths in Montana has increased. From 2009-2014, the number of these deaths were relatively low each year, ranging from 2 to 16 among Montana residents. Then between 2015 and 2018, methamphetamine deaths increased to 24 to 34 deaths per year; the death rate for these years remained statistically stable while the rates for the US increased significantly (Figure 3). In 2015, Montana’s age-adjusted death rate was significantly higher than the US, but as of 2018 there was no statistically significant difference.⁸

Figure 3. Age-adjusted Methamphetamine*-related Death Rate, Montana and United States, 2015-2018



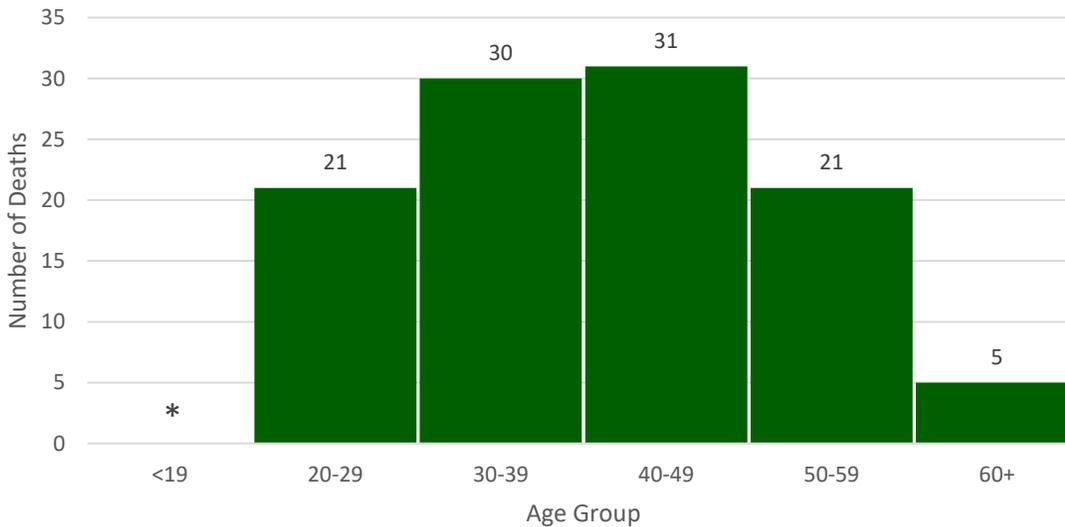
CDC Wonder, 2015-2018

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

†Statistically significant difference between US and Montana rates

Decedents from methamphetamine-related deaths between 2015 and 2018 were predominantly male (70%) and the vast majority of all deaths occurred between the ages of 20 and 60 years (93%), with 46% among those aged 20—39 years (Figure 4).⁸

Figure 4. Age at Death for Methamphetamine-related Deaths among Montana Residents, 2015-2018



Montana Vital Statistics, 2015-2018

* Counts <5 suppressed



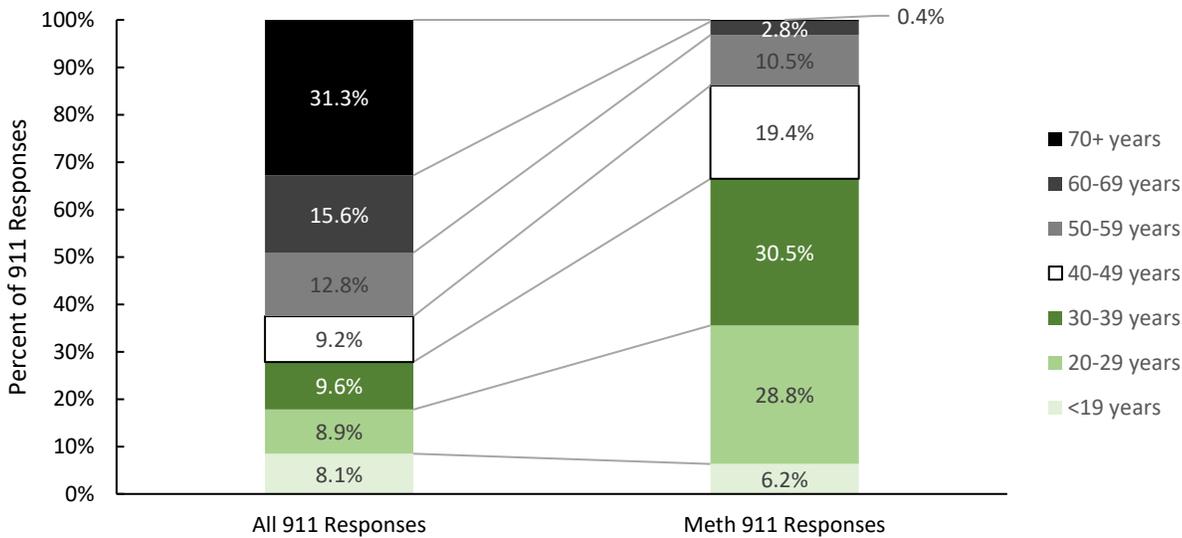
Hospitalizations, Emergency Department (ED) Visits, and Emergency Medical Services (EMS) Responses

Stimulant-related emergency department (ED) visits and hospital admissions represent a small proportion of all hospital visits statewide. However, these visits have increased in recent years. ED visits increased from 0.6% in 2016 to 0.8% in 2018 (from 1885 to 2478 cases, respectively) and hospital admissions increased from 1.5% in 2016 to 1.7% in 2018 (from 1481 to 1726 cases, respectively); the increase during this time was statistically significant. From 2016-2018, 52.6% of those hospitalized were male and the majority were younger adults aged 20--39 years (60.9%). Half of these hospitalizations occurred among residents of small metro counties (<250,000 population). Though small metro areas contain 35% of the state’s population, they accounted for 49.7% of the hospitalizations.⁹

The total costs associated with stimulant-related hospitalizations and ED visits have grown, from around 29 million dollars in 2016 to over 39 million dollars in 2018. This is likely due to the growth in cases related to stimulant use as well as rise in average cost charged to treat an individual patient (\$8,643 in 2016 to \$9,303 in 2018).⁹

Furthermore, from January of 2018 to December of 2019, there were 1,877 methamphetamine-related 911 responses, representing 1.1% of all EMS runs in Montana.¹⁰ Much like in the case of hospitalizations, the sex-ratio of those needing EMS services for methamphetamine-related events was split evenly (51.5% male, 46.2% female, 2.2% not-recorded), and were disproportionately young when compared to the general EMS patient population (Figure 5). From 2018 to 2019, Montanans aged 20-29 years represented 8.9% of all 911 responses but were 28.8% of all methamphetamine-related 911 responses. This trend was also observed for Montanans aged 30-39 (9.6% vs 30.5%) and 40-49 years (9.2% vs 19.4%). American Indians were also disproportionately represented, making up 29.7% of methamphetamine-related 911 responses but 7% of the Montana population.

Figure 5. Percentage of 911 Responses by Age, Montana, 2018-2019

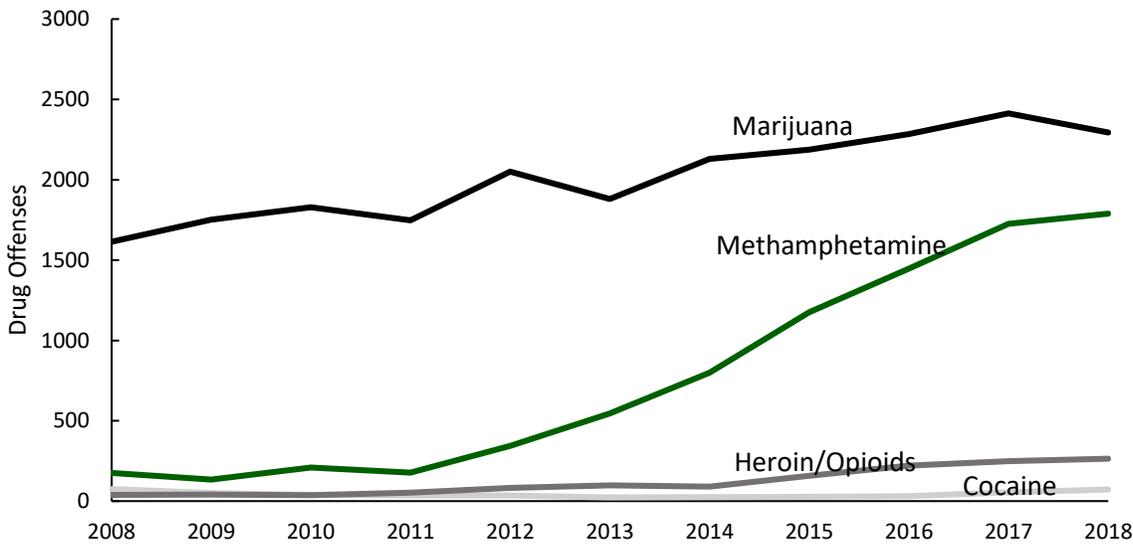


Montana EMS data, 2018-2019

Other Impacts of Methamphetamine Use in Montana

From 2008 to 2018, the number of drug-related crimes reported in Montana increased by 100%, with the greatest increase seen for methamphetamine (Figure 6). The most commonly reported offenses for methamphetamine-related incidents include possession of drugs and drug paraphernalia, sale of or intent to sell drugs, obstruction of a peace officer, and probation violations (Table 1).¹¹

Figure 6. Reported Drug-Related Offenses, Montana, 2008-2018



National Incident Based Reporting System (NIBRS), 2008-2018

Table 1 Top-ten Methamphetamine-related Incidents, Montana, 2011-2018

Offense Description	Total Offenses, 2011-2018
Possession of dangerous drugs	7424
Possession of drug paraphernalia	5377
Sale of dangerous drugs	925
Possession with Intent to sell	787
Obstructing a peace officer or other public servant	660
Probation violation	319
Criminal contempt	247
Resisting arrest	217
Shoplifting	214
DUI, intoxication by drugs or alcohol	193

National Incident Based Reporting System (NIBRS), 2011-2018



Furthermore, among Montana children removed from their homes in 2019 due to child abuse and neglect, 68.4% of reports indicated there was parental drug use or involvement. Methamphetamine was listed as the primary drug in 65.3% of these removals.¹²

Treatment

Between 2018 and 2019, there were 1,295 admissions to treatment centers in Montana where clients listed methamphetamine as either their primary, secondary, or tertiary drug of choice. Of these admissions, 49% were male and 51% were female, and three-quarters were between 20 and 40 years of age.¹³

Currently, there are no effective pharmacotherapies for the treatment of stimulant use disorder (SUD). Treatment combining contingency management (CM) and community reinforcement approaches has been found to be the most efficacious and acceptable treatment, both in the short and long term.¹⁴ Contingency management is 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.

As of July 2020, there were 781 Licensed Addiction Counselors (LACs) and Addiction Counselor Candidates.¹⁵ Though it is estimated that approximately 79,000 Montanans have a substance use disorder, realistically only a fraction of these people would seek treatment in any given year.¹⁶ The number of individual's seeking treatment services are not currently overburdening the current supply of practicing LACs.

Causative Factors and Implications: Context from Yellowstone County

A series of key-informant interviews were conducted in Yellowstone County in 2019 with individuals with lived experience regarding methamphetamine use. These sessions provided valuable information regarding initiation of methamphetamine use, causative factors behind use, life while using, and outlook for treatment and reintegration into the community. Many spoke of growing up and living in an environment where substance use was normalized and started using methamphetamine in their late teens and early twenties to cope with trauma, self-medicate for mental health concerns, to lose weight, or heighten social experiences.¹⁷

Those being treated for substance use disorder in the justice system in Billings expressed frustration at the cycle of recidivism that they are caught in as they relapse or continue to use drugs. They feel that they have difficulty reintegrating into the community due to lack of economic and treatment resources.¹⁷



Conclusions

Summary of data findings

This report documents several worrisome trends regarding methamphetamine use in Montana. Since 2015 and 2016, methamphetamine-related deaths and hospitalizations and ED visits in Montana have increased. Methamphetamine-related deaths were majority male (70%) while hospitalizations and ED visits were more evenly split by gender with 52.6% male. Methamphetamine-related hospitalizations were skewed toward younger adults as compared to methamphetamine-related deaths, 60.9% and 47% aged 20-39 years, respectively. Methamphetamine-related crime also increased in recent years. However, despite these troubling trends among adults, youth use of methamphetamine has steadily declined over the past decade.

Treatment options for stimulant use disorder are limited in scope and efficacy at this time. Though there are enough Licensed Addiction Counselors to treat the estimated number of Montanans who currently seek treatment each year, if the demand for treatment increased by 20%, there would need to be an additional 190 LACs added to the workforce. The ages of those in treatment correspond with the ages of those who utilized the EMS or were hospitalized for methamphetamine-related illness. However, fewer men were in treatment for a methamphetamine use disorder than were hospitalized, visited the ED, or died of methamphetamine-related causes.

Data gaps

As previously described, 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. Methamphetamine falls under the broad category of “psychostimulants with abuse potential” which also includes amphetamine and caffeine.

Survey data attempting to collect accurate information about stigmatized behaviors, such as illicit drug use, are subject to limitations that affect this method’s ability to capture true prevalence. These limitations include underreporting of these behaviors resulting in low numbers and rates, which makes it difficult to analyze by demographic characteristics. Prevalence information from sources like the National Survey on Drug Use and Health also has pitfalls in its sampling methodology such as excluding homeless or institutionalized populations. People living in these settings have been identified as target populations for prevention and treatment interventions from other data sources.

At this time, there is no identified data source that provides population-level estimate of methamphetamine prevalence that would accurately describe illicit methamphetamine users by demographic or other socio-economic factors.

Data describing initiation of methamphetamine use and other risky behaviors during use is limited. These qualitative data are only available for a small sample in a single geographic location and may not be generalizable to the entire Montana population. More qualitative data are needed to target prevention and treatment interventions.

Prioritizing these data gaps is necessary to develop targeted, evidence-based social service interventions for methamphetamine use in Montana.



Next Steps

The qualitative information provided by the key-informant interviews in Yellowstone County provided an understanding of causative factors behind methamphetamine use as well as the daily struggles and challenges faced by those in treatment for methamphetamine use disorder. Further interviews done over a larger area, with a greater variety of people, would be beneficial to creating a complete picture of methamphetamine use in the state.

An inability to enumerate true prevalence of methamphetamine use in the state hinders our ability to target effective interventions to prevent use and mitigate negative health outcomes. Continued surveillance using our current data sources should be combined with new sources as well. The Montana Department of Public Health and Human Services is piloting questions to obtain population-level illicit drug use data on the 2020 Behavioral Risk Factor Surveillance System survey. Results from these questions will be available in August 2021. More in-depth analysis of hospital data looking into length of stay as well as discharge status would give a better picture of the healthcare burden faced by the state in treating this population.

The addition of other information sources such as the Montana State Hospital, syringe exchange programs, and Housing and Urban Development data would also provide valuable insight into the scope of methamphetamine use and its effects in the state.



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Data Appendix

Mortality Data	
Data Source	
<p>Vital Statistics (Montana)</p>	<p><u>Description:</u> The Montana Office of Vital Statistics 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.</p> <p><u>Definition:</u> Methamphetamine deaths were defined as a death by a Montana resident with an underlying cause of death ICD-10 code:</p> <ul style="list-style-type: none"> • X40-X44 (accidental poisoning), or • X60-X64 (intentional self-poisoning), or • X85 (assault by poisoning), or • Y10-Y14 (poisoning with unknown intent) <p>that included a contributing cause of death code of:</p> <ul style="list-style-type: none"> • T43.6 (psychostimulant with abuse potential) <p><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.</p> <p><u>Notes:</u> For the purpose of this report, all deaths with a code of T43.6 were referred to as a methamphetamine-related death, not a ‘psychostimulant-related death.’</p>
<p>CDC WONDER— Underlying Cause of Death (United States, Montana)</p>	<p><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.</p> <p><u>Definition:</u> Methamphetamine deaths were queried using the “Drug/Alcohol Induced Causes: Drug Induced Causes” and MCD-ICD-10 Code T43.6</p> <p><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.</p> <p><u>Notes:</u> For the purpose of this report, all deaths with a code of T43.6 were referred to as a methamphetamine-related death, not a ‘psychostimulant-related death.’</p>



Prevalence Data

Data Source	
<p>National Survey on Drug Use and Health (NSDUH) (United States, Western States, Montana)</p>	<p><u>Description:</u> NSDUH is an annual survey of the civilian, noninstitutionalized population of the United States aged 12 years of 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.</p> <p><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.”</p> <p><u>Limitations:</u> Survey responses about stigmatized behavior such as illicit drug use may suffer from underreporting.</p>
<p>Youth Risk Behavior Surveillance System (YRBSS) (United States, Montana)</p>	<p><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.</p> <p><u>Definition:</u> The question about methamphetamine also lists the drug as being called “speed, crystal meth, crank, ice, or meth.”</p> <p><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.</p>





Morbidity Data

Data Source	
Hospital Discharge Data System (Montana)	<p><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.</p> <p><u>Definition:</u> Patients with an ICD-10-CM code of:</p> <ul style="list-style-type: none"> • T43.62[1-4][BLANK or A] (amphetamine poisoning) • F15.[129][0,2,4-9] (other stimulant dependence, uncomplicated) <p><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.</p> <p><u>Notes:</u> For the purpose of this report, patients with the abovementioned ICD-10-CM codes were considered a methamphetamine case.</p>
Emergency Medical Services (EMS) (Montana)	<p><u>Description:</u> Montana statute requires all ambulance (ground and air) and non-transporting 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.</p> <p><u>Definition:</u> Methamphetamine-related cases were defined as:</p> <ul style="list-style-type: none"> • 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 <p><u>Limitations:</u> These criteria identify overdose, use, treatment, withdrawal, or history of methamphetamine use based on terms a 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.</p>



Impact Data	
Data Source	
National Incident Based Reporting System (NIBRS) (Montana)	<p><u>Description:</u> Around 108 of Montana’s 135 active law enforcement agencies report their crime data into NIBRS. This system counts offenses and victims, and up to 10 different drug types can be reported on a single criminal incident.</p> <p><u>Definition:</u> Crimes referring to methamphetamine were counted.</p> <p><u>Limitations:</u> 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.</p>
Treatment Data	
Data Source	
Treatment Episode Data Set (TEDS) (Montana)	<p><u>Description:</u> TEDS comprises data that are routinely collected by States in monitoring their individual substance abuse treatment systems. In general, facilities reporting TEDS data are those that receive state alcohol and/or drug agency funds (including federal block grant funds) for the provision of substance abuse treatment.</p> <p><u>Definition:</u> Methamphetamine/amphetamine admissions include admissions for both methamphetamine and amphetamine but are primarily for methamphetamine. Methamphetamine constitutes about 95% of combined methamphetamine/amphetamine admissions.</p> <p><u>Limitations:</u> TEDS is an admission-based system and do not represent individuals; an individual admitted to treatment twice within a calendar year would be counted as two admissions. The primary, secondary, and tertiary substances of abuse reported to TEDS are those substances which lead to the treatment episode, and not necessarily and complete enumeration of all drugs used at the time of admission.</p> <p><u>Notes:</u> Admissions for methamphetamine constitutes 95% of combined methamphetamine admissions and will be considered strictly methamphetamine admissions for the purpose of this report.</p>

