

Methamphetamine Epidemiology and Public Health Impacts

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Introduction

Use of the addictive and potent stimulant, methamphetamine, is a global concern, including in the U.S. Research in the U.S. has documented increases in methamphetamine availability, purity, potency, and related use, use disorders, and health consequences such as overdose over the past 10 to 15 years. Accumulating evidence also shows that the increases in methamphetamine-related use and harms are intertwined with the ongoing opioid overdose crisis in the U.S.

What is Methamphetamine

Methamphetamine is a potent synthetic central nervous system stimulant that has a high addiction potential.¹ The U.S. Food and Drug Administration (FDA) has approved methamphetamine for the treatment of attention deficit hyperactivity disorder (ADHD).² Thus, it is classified by the Drug Enforcement Administration (DEA) as a Schedule II substance. However, most methamphetamine used in the U.S. is illicitly manufactured.³

What Forms Does Methamphetamine Come In

Methamphetamine typically comes in powder or crystalline form. Crystal methamphetamine resembles glass fragments or shiny blue-white “rocks” of various sizes. Methamphetamine has increasingly been identified in fake pills mimicking legitimate prescription medications (typically Adderall) or disguised as MDMA tablets in recent years.³ According to DEA’s Methamphetamine Profiling Program, the majority of the methamphetamine available in the United States is produced in Mexico. The 2025 National Drug Threat Assessment from DEA states that the supply of methamphetamine remains high, with Mexican cartels producing and trafficking a highly pure and potent product.³

Health Impacts of Methamphetamine

Acute methamphetamine use causes increased alertness and talkativeness and decreased appetite, as well as feelings of euphoria and well-being, among other immediate effects.¹ Long-term use

¹ Barr AM, Panenka WJ, MacEwan GW et al. The need for speed: an update on methamphetamine addiction. J Psychiatry Neurosci. 2006;31(5):301–313.

² https://www.accessdata.fda.gov/drugsatfda_docs/label/2024/005378s032lbl.pdf

³ 2025 DEA National Drug Threat Assessment. <https://www.dea.gov/sites/default/files/2025-05/2025%20National%20Drug%20Threat%20Assessment%20Web%205-12-2025.pdf>

can have serious health effects, including psychosis, depression, mood disturbances, and other mental disorders, cognitive and neurologic deficits, cardiovascular and renal dysfunction, transmission of HIV, viral hepatitis, and other sexually transmitted infections, oral health impacts, development of methamphetamine use disorder, overdose, and increased mortality.^{4,5,6,7,8,9,10,11}

Patterns of Methamphetamine Use

Based on data from the National Survey on Drug Use and Health (NSDUH), the number of people 12 years or older reporting past-year use of methamphetamine has increased over the past decade,¹² although the prevalence of past-year use has remained stable between 2021 and 2024.¹³ In 2024, approximately 2.4 million people reported past-year methamphetamine use.¹³

In addition to overall use increasing, prior research has found that more frequent and higher-risk use has increased over time. Han et al., found that among individuals reporting past-year methamphetamine use, the number reporting daily or near daily use of methamphetamine increased over 92% from approximately 161,000 in 2016 to 310,000 in 2019.¹¹ These researchers also found that among those with past-year methamphetamine use, the prevalence of methamphetamine use disorder or injection surpassed the prevalence of methamphetamine use without use disorder or injection in each year from 2017 to 2019, and that adults with a use disorder or those injecting methamphetamine were more likely to use methamphetamine more frequently.¹¹

Between 2021 and 2024, the number of people reporting daily or almost daily methamphetamine use in the past year ranged from 613,000 in 2021 to 639,000 in 2024, and nearly 600,000 people reported injecting methamphetamine in the past year. In 2024, approximately 104,000 people reported using methamphetamine for the first time in the past year, with the average age of initiation of 31.5 years.¹³

⁴ Voce A, Calabria B, Burns R, et al. 2019. A systematic review of the symptom profile and course of methamphetamine-associated psychosis. *Subst. Use Misuse* 54: 549–559.

⁵ Prakash MD, Tangelakis K, Antonipillai J, et al. 2017. Methamphetamine: effects on the brain, gut and immune system. *Pharmacol. Res* 120: L60–L67.

⁶ Wang TY, Fan TT, Bao YP, et al. 2017. Pattern and related factors of cognitive impairment among chronic methamphetamine users. *Am. J. Addict* 26: 145–151.

⁷ Darke S, Duflou J & Kaye S. 2017. Prevalence and nature of cardiovascular disease in methamphetamine-related death: a national study. *Drug Alcohol Depend.* 179: 174–179.

⁸ Cheng WS, Garfein RS, Semple SJ, et al. 2010. Increased drug use and STI risk with injection drug use among HIV-seronegative heterosexual methamphetamine users. *J. Psychoactive Drugs* 42: 11–18.

⁹ Strathdee SA & Stockman JK. 2010. Epidemiology of HIV among injecting and non-injecting drug users: current trends and implications for interventions. *Curr. HIV/AIDS Rep* 7: 99–106.

¹⁰ Cunningham EB, Jacka B, DeBeck K, et al. 2015. Methamphetamine injecting is associated with phylogenetic clustering of hepatitis C virus infection among street-involved youth in Vancouver, Canada. *Drug Alcohol Depend.* 152: 272–276.

¹¹ Han B, Compton WM, Jones CM, Einstein EB, Volkow ND. Methamphetamine use, methamphetamine use disorder, and associated overdose deaths among US adults. *JAMA Psychiatry.* 2021;78(12):1-14.

¹² Center for Behavioral Health Statistics and Quality. 2020. Results from the 2019 National Survey on Drug Use and Health: Detailed Tables. Rockville, MD: Substance Abuse and Mental Health Services Administration.

¹³ Center for Behavioral Health Statistics and Quality. 2025. Results from the 2024 National Survey on Drug Use and Health.

The NSDUH data also show that methamphetamine use varies by demographic characteristics. According to the 2024 NSDUH, the prevalence of past-year methamphetamine use among males was twice as high as that for females (1.1% versus 0.5%). By age, prevalence was highest among people 26 to 49 years olds (1.4%), followed by those 50 or older (0.6%), 18 to 25 (0.5%), and 12 to 17 (0.2%). By race/ethnicity, prevalence was highest among non-Hispanic people of two or more races (1.7%), followed by non-Hispanic American Indian or Alaska Native persons (1.4%), non-Hispanic white persons (1.0%), and Hispanic persons (0.8%). Prevalence was highest in the South (0.9%) and West (0.9%) Census regions, in nonmetro areas, especially completely rural areas (2.9%), and among those with Medicaid or CHIP insurance (2.2%) or those without insurance (1.5%). Among adults, prevalence of past-year use was highest among those who were unemployed (3.0%) and those with less than a high school education (1.8%).¹³

Co-occurring substance use and mental health problems are also common among people using methamphetamine. Jones et al., found that among adults who used methamphetamine in the past year, 68.7% also reported past-year use of cannabis, prescription opioid misuse (40.4%), cocaine use (30.4%), prescription sedative or tranquilizer misuse (29.1%) prescription stimulant misuse (21.6%), and heroin use (16.9%,). In addition, those reporting past year methamphetamine use also reported past-month binge drinking (46.4%) and past-month nicotine dependence (44.3%) and 57.7% had any mental illness in the past year and 25.0% had a serious mental illness in the past year.¹⁴

Methamphetamine Use Disorder and Methamphetamine Treatment Admissions

Consistent with national trends of rising methamphetamine use in the U.S., the number of people with past-year methamphetamine use disorder has also increased over time. Han et al., reported that the number of adults aged 18 to 64 years old with a past-year methamphetamine use disorder increased 62% between 2015 and 2019.¹¹ Due to survey changes, more recent NSDUH data are not comparable to these earlier estimates; however, the number of people with past-year methamphetamine use disorder was 1.6 million people in 2024, and this number has been stable since 2021.¹³

Although data are more limited, the available research on substance use disorder treatment populations indicates a significant rise in methamphetamine use among people receiving treatment for substance use disorders in the past decade or more. Using data from the nationwide Treatment Episode Data Set (TEDS), Jones et al., found that methamphetamine use among drug-related treatment admissions increased between 2010 and 2017.¹⁵ These increases were found for both any methamphetamine reported at treatment admission, rising from 14.1% of drug-related treatment admissions in 2010 to 23.6% in 2017, as well as among admissions where methamphetamine was the primary drug of use, rising from 9.4% of admissions in 2010 to 14.5% in 2017. Importantly, these increases were seen across nearly all demographic groups examined as well as all U.S. Census regions.

¹⁴ Jones CM, Compton WM & Mustaquim D. 2020. Patterns and characteristics of methamphetamine use among adults – United States, 2015–2018. *Morb. Mortal. Wkly. Rep* 69: 317–323.

¹⁵ Jones CM, Olsen EO, O'Donnell J & Mustaquim D. 2020. Resurgent methamphetamine use at treatment admission in the United States, 2008–2017. *Am. J. Public Health* 110: 509–516.

In the same study, characteristics associated with increased odds of reporting methamphetamine use at treatment admission included the following: female sex; admissions aged 35–44 years compared with those aged 25–34 years; treatment admissions in the Midwest, South, or West compared with the Northeast; being unemployed or not in the labor force; dependent living or being homeless; and having a referral from a healthcare provider, other community referral, or criminal justice referral compared with individual/self-referral.¹⁵

Consistent with increases in methamphetamine injection seen in nontreatment populations, using TEDS data from 2010 to 2019, Jones et al., found that the percentage of primary methamphetamine treatment admissions reporting injection as the usual route of use increased from 18.0% of admissions in 2010 to 28.2% in 2019; the percentage of admissions reporting smoking methamphetamine declined from 70.3% of admissions in 2010 to 59.0% in 2019; a smaller percentage of admissions reported snorting/inhalation and oral use as their primary route.¹⁶

The most recent TEDS data through 2022 show continued increases in treatment admissions for methamphetamine as the primary substance of use at treatment admission, rising from 6.4% of all treatment admissions in 2012 to 11.5% of admissions in 2022.¹⁷

Emergency Department Visits Involving Methamphetamine

According to SAMHSA's Drug Abuse Warning Network (DAWN), in 2024, more than 550,000 methamphetamine-related ED visits occurred in the United States. Methamphetamine was mentioned in 6.7% of all DAWN ED visits, with a rate of 166 per 100,000 individuals. The rate of methamphetamine-related ED visits was significantly higher among males (221 per 100,000), and among individuals aged 26 to 44 (372 per 100,000) and those aged 45 to 64 (203 per 100,000). The rate of methamphetamine-related ED visits was similar among American Indian or Alaska Native persons (125 per 100,000), Black persons (128 per 100,000), Native Hawaiian or Other Pacific Islander persons (153 per 100,000), and White persons (155 per 100,000). More than half of methamphetamine-related ED visits occurred in the West Census region (53.0%), and the rate of methamphetamine-related ED visits in the West (373 per 100,000) was more than four times higher than in other Census region.¹⁸

Fatal Overdoses Involving Methamphetamine

Mattson and colleagues, reported that drug overdose death rates involving psychostimulants, the ICD-10 category that captures methamphetamine in mortality data, increased more than 300%, from 1.2 per 100,000 in 2013 to 5.0 per 100,000 in 2019.¹⁹ During this same period, the percentage of overdose deaths involving psychostimulants rose from 8.2% in 2013 to 22.9% in 2019, becoming the second most numerous drug class involved in overdose deaths in 2019 (after

¹⁶ Jones CM, Han B, Seth P, Baldwin G, Compton WM. Increases in methamphetamine injection among treatment admissions in the U.S. *Addict Behav.* 2023;136:107492.

¹⁷ <https://www.samhsa.gov/data/sites/default/files/reports/rpt53162/2022-teds-annual-detailed-tables.pdf>

¹⁸ <https://www.samhsa.gov/data/sites/default/files/reports/rpt56252/dawn-national-estimates-2024.pdf>

¹⁹ Mattson CL, Tanz LJ, Quinn K, et al. 2021. Trends and geographic patterns in drug and synthetic opioid overdose deaths – United States, 2013–2019. *Morb. Mortal. Wkly. Rep* 70: 202–207.

opioids as a class).²⁰ It is worth noting that the increases in psychostimulant-involved overdose deaths have been seen across geographic regions and a range of demographic groups, including in areas of the country, such as the Northeast, that have not historically had extensive illicit methamphetamine markets as well as among populations, such as non-Hispanic Black persons who have historically had low rates of methamphetamine use and among those with well-documented impacts of methamphetamine use, including tribal populations.²¹

More recent analyses of CDC's National Vital Statistics System data show that overdose deaths involving psychostimulants continued to increase through 2022 and have declined since that time; however, as a proportion of overdose deaths, deaths involving psychostimulants have increased each year since at least 2019, increasing from 22.9% of overdose deaths in 2019 to 36.2% in 2024 (using provisional data reported through July 2025). Consistent with data from both NSDUH and TEDS, CDC mortality data show that increases in psychostimulant deaths have occurred in conjunction with increasing co-involvement of opioids such as illicitly made fentanyl. From 2018 to 2024 (provisional) the percentage of opioid-involved overdose deaths that also involved psychostimulants increased from 13.7% in 2018 to a high of 32.4% in 2024; similarly, the percent of psychostimulant overdose deaths that also involved opioids rose from 50.5% in 2018 to a peak of 69.4% in 2023, with the provisional data for 2024 currently showing 60.9%.²²

When examined by demographic factors, rates of overdose deaths involving psychostimulants in 2024 (provisional) were higher among males (12.5 per 100,000) compared to females (4.8 per 100,000), among those aged 35-44 (18.0 per 100,000), 45-54 (16.5 per 100,000), 55-64 (13.0 per 100,000) and those aged 25-34 (11.2 per 100,000). By race/ethnicity, non-Hispanic American Indian or Alaska Native persons had the highest rates (28.4 per 100,000), followed by non-Hispanic Native Hawaiian or Other Pacific Islander persons (13.2 per 100,000), and non-Hispanic White persons (9.9 per 100,000). Individuals living in less urban and more rural areas also had higher rates of overdose deaths involving psychostimulants.²²

Treatment of Methamphetamine Use Disorder

At this time, there is no FDA-approved medication for the treatment of methamphetamine use disorder or any other stimulant use disorder. However, there are effective behavioral treatments. The best-studied for methamphetamine use disorder, and the one most associated with treatment success, is contingency management. Other evidence-based/informed behavioral treatment approaches include cognitive behavioral therapy, community reinforcement approach, the Matrix Model, and motivational interviewing. In addition, other co-occurring substance use disorders and psychiatric conditions should be treated in conjunction with the underlying stimulant use disorder. Although not FDA approved at this time, the American Society of Addiction Medicine/American Academy of Addiction Psychiatry Clinical Practice Guideline on the

²⁰ Hedegaard H, Minino AM & Warner M. 2021. Co-involvement of opioids in drug overdose deaths involving cocaine and psychostimulants. NCHS Data Brief, no 406. Accessed July 14, 2021.

²¹ Jones CM, Houry D, Han B, Baldwin G, Vivolo-Kantor A, Compton W. Methamphetamine use in the United States: epidemiological update and implications for prevention, treatment, and harm reduction. *Ann NY Acad Sci.* 2022;1508(1);3-22.

²² CDC National Vital Statistics System. 2025. Analysis of CDC Wonder by Jones CM on July 27, 2025.

Management of Stimulant Use Disorder includes information on pharmacotherapies, including psychostimulant medications, that may be utilized off-label to treat stimulant use disorders.^{23,24}

Intersection With the Opioid Crisis

Adding to the complexity of the resurgent methamphetamine threat in the United States is the reality that the increases in methamphetamine availability and harms are intertwined with the ongoing opioid overdose crisis. Whether it is methamphetamine use and use disorder, ED visits, treatment admissions, or overdose mortality, multiple research studies have documented the overlap of rising methamphetamine use and linked opioid use and harms. The implications of rising co-use of opioids and methamphetamine are considerable, as research indicates that people who use both substances have poorer substance use treatment outcomes, are less likely to receive medications for opioid use disorder-based treatment, have greater difficulty accessing treatment for substance use disorder, report injection drug use and injecting more frequently, have increased risk for overdose, and report engaging in high-risk behaviors that can contribute to the transmission of infectious diseases such as HIV and viral hepatitis.^{14,15,16,20,25,26,27,28,29}

Conclusion

Studies in recent years have documented increases in methamphetamine availability, purity, potency, and related use, use disorders, and health consequences. Accumulating evidence also documents that the increases in methamphetamine-related use and harms are intertwined with the ongoing opioid overdose crisis in the U.S. The statistics presented above underscore the complexity of addressing the rise in methamphetamine use in the U.S. Fortunately, evidence-based strategies exist that can be implemented to prevent methamphetamine use, treat individuals with methamphetamine use disorders, and reduce the health and social consequences of methamphetamine use.

²³ <https://library.samhsa.gov/sites/default/files/pep20-06-01-001.pdf>

²⁴ https://journals.lww.com/journaladdictionmedicine/fulltext/2024/05001/the_asam_aaap_clinical_practice_guideline_on_the.1.aspx

²⁵ Glick SN, Klein KS, Tinsley J & Golden MR. 2021. Increasing heroin-methamphetamine (Goofball) use and related morbidity among Seattle area people who inject drugs. *Am. J. Addict* 30: 183–191.

²⁶ Tsui JL, Mayfield J, Speaker EC, et al. 2020. Association between methamphetamine use and retention among patients with opioid use disorders treated with buprenorphine. *J. Subst. Abuse Treat* 109: 80–85.

²⁷ Mellis AM, Potenza MN & Hulsey JN. 2021. COVID-19 related treatment service disruptions among people with single-and polysubstance use concerns. *J. Subs. Abuse Treat* 121: 108180.

²⁸ Strickland JC, Stoops WW, Dunn KE, et al. 2021. The continued rise of methamphetamine use among people who use heroin in the United States. *Drug Alcohol Depend.* 225: 108750.

²⁹ Shearer RD, Howell BA, Bart G & Winkelman TNA. 2020. Substance use patterns and health profiles among US adults who use opioids, methamphetamine, or both, 2015–2018. *Drug Alcohol Depend.* 214: 108162.