Unintentional Drug Overdose Deaths Among Wisconsin Youth Aged 15–24

Youth overdose deaths don't just happen—they are preventable. Wisconsin's Governor Tony Evers declared 2025 "the year of the kid", emphasizing the need for increased support of young people's physical and mental health. One area of focus is preventing youth overdose deaths. In Wisconsin, just as across the United States, we are in the midst of an overdose epidemic. By assessing data from multiple sources, we can identify warning signs and opportunities for interventions to prevent unintentional youth overdose deaths and related harms.

For young people aged 15–24, the leading causes of death are often preventable. Between 2016 and 2023, 2,722 Wisconsinites between the ages of 15–24 died from preventable causes, accounting for 65% of all deaths in this age group.[1]

This report focuses on 640 deaths that occurred 2016–2023 due to unintentional drug overdoses among Wisconsinites aged 15–24, representing approximately 24% of all preventable deaths. By using multiple linked data sources, this report examines the circumstances surrounding these unintentional overdose deaths to identify patterns and inform future prevention efforts.

Information from death certificates—who, what, when, where, how

According to death records spanning 2016–2023, one third of Wisconsinites aged 15–24 who died due to unintentional overdose were young women. Death records also indicate overdose deaths among this age group increased as people got older: 10% were 18 or younger whereas 40% were 23 or 24. Eighty percent were white, 9% Black, 5% American Indian, and 5% Asian, multi-race, or other racial identification. These proportions reflect Wisconsin's population, except among American Indian

Table 1. Number of deaths with other drugs in addition to Fentanyl	
Cocaine	113
Benzodiazepine	88
Heroin	85
Unspecified psychotropic	85
Stimulant (other than cocaine)	64
Semisynthetic (for example, hydrocodone, oxycodone)	45
Alcohol	37
Sedative-hypnotic (non-benzodiazepine)	23
Antidepressant	18
Methadone	4

youth, for whom deaths were four times higher than their population would predict.

While approximately half of deaths occurred among residents in the five most populous counties (Milwaukee, Dane, Waukesha, Brown, Racine), only 12 out of Wisconsin's 72 counties experienced no deaths. Half of the deaths occurred in the person's home.

When an overdose death occurs, a complete toxicology examination is conducted to determine what drugs were in a person's system. Most of the 640 deaths (581, or 91%) were due to opioids as a broad class, and 454 (71%) involved synthetic opioids such as fentanyl. Fentanyl and related synthetic opioids are often combined with other drugs, either knowingly or unknowingly. Table 1 lists other identified substances. This underscores the increasing trend of polysubstance use and the unpredictability of the illicit drug market.

Overdose deaths occurred in both rural and urban areas. In rural counties deaths were more likely to include stimulants (22% rural vs. 12% urban) whereas in urban settings cocaine (25% urban vs. 17% rural) and prescription-type drugs, such as antidepressants (6% urban vs. 1% rural) and benzodiazepines (20% urban vs. 15% rural), were more common.

Warning signs and opportunities for intervention

Drug overdose deaths do not usually happen "out of the blue." There are often warning signs, and therefore opportunities to intervene. Additional data sources provide insights into these early warning signs and opportunities.

Drugs dispensed

Research has found that being prescribed controlled substances during adolescence increases the likelihood of their later misuse. One study found a 33% increase in future opioid misuse among youth who were prescribed opioids prior to graduating high school.[2] Using data from the Wisconsin Prescription Drug Monitoring Program (PDMP), we examined the history of dispensing for those young people who later died from a drug overdose, as well as all Wisconsin residents 15–24 years old.

Opioid prescribing in Wisconsin has been decreasing steadily since 2016 because of the link to opioid abuse. Nearly 13% of adolescents and young adults were prescribed opioids at least once in 2016, decreasing to 6% in 2023. Of the 640 individuals who died of an overdose, 125 (19.5%) had been prescribed an opioid in the year preceding their overdose death, substantially higher than what would be expected from national and state-wide rates.

From 2016–2023, the percentage of benzodiazepines (Xanax, Valium, Klonopin, etc.) being prescribed to young people aged 15–24 decreased from 3.2% to 1.8%. Eighty-four, or 23.1%, of the young Wisconsinites who died due to unintentional overdose had received benzodiazepines at some time before their death, and 13.1% in the year preceding their death.

Amphetamine (Ritalin, Conerta, Adderall, etc.) prescribing has shown a different trend in Wisconsin. In 2016, 4.6% of those 15–24 years old received at least one amphetamine prescription. This decreased to 3.9% in 2020 but has since increased, with 4.4% of 15–24-year-olds receiving a prescription in 2023. Among the 640 people who died of an overdose, 70 (10.9%) had been prescribed amphetamines at some point since 2016.

Previous diagnosis of substance use disorder, mental health needs, and previous overdoses

While the higher rate of opioid and benzodiazepine dispensing among this group is a possible risk factor for later overdose, research has shown that an even greater risk factor is a recent diagnosis with a mental health or substance use disorder.[3] Wisconsin hospital discharge records were available for 569 (89%) of the 640 people who died from unintentional drug overdoses. Discharge diagnoses (ICD-10 codes) were searched for indicators of substance use disorder and mental health diagnoses (see Appendix). Of the 569 individuals with available hospital records, 308 (54% of those with available hospital records, or 48% of the entire group) received a diagnosis of substance abuse or dependence at some point before their death, indicating a need for clinical intervention. Nationally, the estimated prevalence of opioid use disorder is 2.2% for those 18–25.[4] In contrast, the prevalence of opioid use disorder for those included in this analysis was 20%. In addition, 162 (25%) had previously been treated for a nonfatal overdose; 123 (19%) were overdoses involving opioids.

Rates of mental health diagnoses were similarly high. Excluding substance-related diagnoses, 295 (52% with records, 46% overall) received a mental health diagnosis. By far, the most common mental health diagnoses were mood and anxiety related: 218 for mood-related diagnoses and 215 for anxiety (38% of those with hospital records, and 34% overall).

There were 215 individuals who had both a substance abuse/dependence diagnosis and a mental health diagnosis (dual diagnosis).

For those who had a diagnosis of opioid abuse or dependence, the most commonly recommended treatment is through medication. The three common medications for opioid use disorder are buprenorphine, methadone, and naltrexone. Because methadone

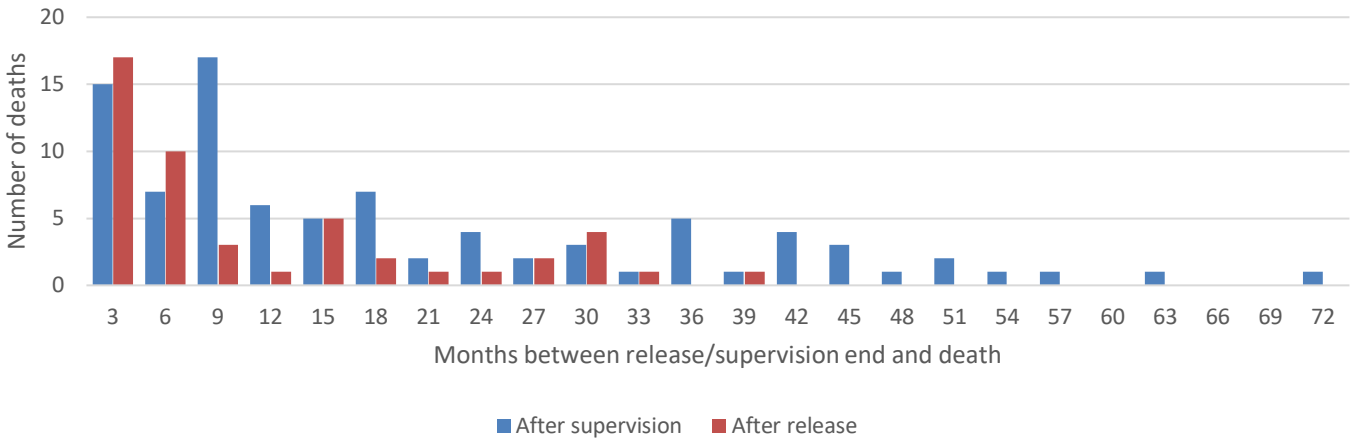
and naltrexone are administered to patients directly rather than being dispensed as medications, only buprenorphine is included in the PDMP. Of the 126 people who had a diagnosis of opioid use disorder, only 35 (28%) have any record of receiving buprenorphine at any point during the years studied.

Involvement with Wisconsin Department of Corrections

Data on incarceration and supervision by the Wisconsin Department of Corrections (DOC) show approximately 43% of the young Wisconsinites aged 15–24 who died from an unintentional overdose were involved with the DOC. Approximately 5% of these individuals had been incarcerated and 29% had been under supervision within the year prior to their death. For comparison, based on data from the DOC, approximately 1% of the Wisconsin population between the ages of 15–24 were under supervision in 2020, and 0.3% were incarcerated.

The days after release from incarceration are often a critical time for individuals who use substances. Figure 1 shows that a large number of deaths occur within the first six months after release. Twenty-one percent of those who had a fatal overdose died within the first month. Fifty-six percent of deaths occurred within 180 days, and 65% within the first year.

Figure 1. Months before death for those released from incarceration or after supervision ended



For those who were under supervision, Figure 1 shows this pattern was not as pronounced, though still present. Sixty percent were under supervision at the time of their death. Of the remaining 89, 28% died within the first six months, an additional 25% within the first year, and another 20% within the second year of finishing their period of supervision.

Summary and recommendations

From 2016 to 2023, 640 Wisconsinites between the ages of 15–24 died from unintentional drug overdoses, representing 24% of all unintentional and accidental deaths in this age group. Data from multiple sources showed that 71% of these deaths were due to fentanyl, often in combination with other drugs. Individuals who identified as American Indian, were diagnosed with a mental health or substance use disorder, or were previously incarcerated were at a greater risk of dying due to unintentional drug overdoses. Young Wisconsinites who died due to an unintentional overdose also had a history of being prescribed opioids and benzodiazepines at greater-than-average rates.

Preventing future unintentional drug overdoses in young Wisconsinites aged 15–24 requires creative solutions, diverse partners, and multiple initiatives at the state and local level. To better support young Wisconsinites, the State of Wisconsin is investing nearly $300 million to address the ongoing mental health crisis. In addition, the state is investing significant efforts to increase access to peer navigator programs and harm reduction services to provide individuals with lifesaving resources.

Health care providers are also essential partners in preventing future unintentional overdose deaths. The data shows two-thirds of the young Wisconsinites who died from an unintentional drug overdose did not receive appropriate follow-up care for treatable conditions. Many were also previously seen for a non-fatal overdose. Health care providers should prioritize patient follow-up in addition to providing education on treatment and community-based resources.

Young Wisconsinites who died due to an unintentional overdose also had high rates of involvement with the criminal justice system. To prevent young Wisconsinites from interacting with the criminal justice system, local partners should consider initiatives that encourage a sense of belonging, bring joy to young adults, and foster social connectedness among Wisconsin's young people. In 2021, students from Wisconsin were asked in focus groups how they coped with the anxiety and isolation, and what they did to find joy.[5] These activities included taking time to relax and recharge; volunteering; self-reflection through meditation, journaling, religious or spiritual study; spending time with pets; emotional releases such as crying to release stress; exercising and physical health; listening to music or playing an instrument; spending time in nature; and spending time with family and friends. In addition, criminal justice partners should prioritize increasing access to substance use treatment programs and provide comprehensive re-entry support for young adults transitioning back into the community.

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Table 2. ICD-10 codes and corresponding diagnoses in hospital discharge records

Poisoning by substance	
T400-T404, T406	Opioid overdose
T401	Heroin overdose
T403	Methadone overdose
T404	Synthetic opioid overdose
T4360, T4362-T4364, T4369	Stimulant overdose
T4362	Amphetamine overdose
T405	Cocaine overdose
Substance use disorders	
F11	Opioid abuse
F12	Cannabis abuse
F13	Sedative, hypnotic, anxiolytic abuse
F14	Cocaine abuse
F15	Stimulant abuse
Mental health diagnoses	
F01-F09	Mental disorders due to known physiological conditions
F10-F19	Mental and behavioral disorders due to psychoactive substance use
F20-F29	Schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders
F30-F39	Mood [affective] disorders
F40-F48	Anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders
F50-F59	Behavioral syndromes associated with physiological disturbances and physical factors
F60-F69	Disorders of adult personality and behavior
F70-F79	Intellectual disabilities
F80-F89	Pervasive and specific developmental disorders
F90-F98	Behavioral and emotional disorders with onset usually occurring in childhood and adolescence