

Health Advisory: Xylazine Overdose in Minnesota

Minnesota Department of Health, Monday, December 11, 10:00 CST 2023

Action Steps

Local and tribal health department: Please forward to hospitals, clinics, urgent care centers, emergency departments, and convenience clinics in your jurisdiction.

Hospitals, clinics and other facilities: Please forward to infection prevention, primary care, internal medicine, emergency medicine, urgent care, addiction medicine, obstetrics and all other health care providers who might see patients who have symptoms consistent with xylazine use.

Health care providers:

- Treat all overdose patients with **naloxone** to reverse the effects of the opioids such as fentanyl, which are typically combined with xylazine. Additional doses may be needed as effects from naloxone may wear off before the sedation effects of opioids and xylazine wear off.
- In patients who do not respond to naloxone, or in any patient who presents with overdose symptoms plus skin ulcers, abscesses, compression neuropathy, pressure ulcers, and rhabdomyolysis:
 - Provide supportive respiratory care and proper management of blood pressure.
 - There is no specific treatment for Xylazine.
 - Watch for undefined withdrawal symptoms, including anxiety, irritability, restlessness, and severe hypertension.
 - Treat withdrawal early, with clinically directed and evidence-based medications for opioid pain management to mitigate any pain and discomfort that could lead to discharges against medical advice. While no medications are FDA approved for treating xylazine withdrawal, benzodiazepines and/or alpha-2 adrenergic agonists (clonidine, dexmedetomidine, tizanidine) have been used to treat withdrawal symptoms.
 - Test specifically for xylazine (which is not covered in routine hospital drug tests).

Situation Update

An animal tranquilizer called xylazine is increasingly being found in the US illegal drug supply and linked to overdose deaths. Xylazine—which is not approved for use in people—can be life-threatening and is especially dangerous when combined with opioids like fentanyl.

The first known xylazine-involved overdose death in Minnesota was in 2019, when it was associated with four deaths. 2022 preliminary data shows there have been 34 xylazine-involved deaths in Minnesota. This number is expected to increase as more death reports from 2022 are received. Currently 100% of xylazine-involved deaths in Minnesota have also tested positive for fentanyl.

Xylazine Symptoms

Xylazine, also called “Tranq” or “Tranq Dope,” is a **long -acting sedative, but it is not an opioid**. Xylazine causes a rapid onset and prolonged duration of sedation and central nervous system depression. It is usually mixed with other illicit drugs, particularly fentanyl, because it causes the effects of opioids to last longer. Use of xylazine in combination with opioids, such as fentanyl, can result in synergetic effects that may increase the risk of an overdose and/or death.

The most common side effects associated with xylazine poisoning include **bradycardia, respiratory and CNS depression, hypotension, blurred vision, apnea, dry mouth, disorientation, drowsiness, staggering, hyperglycemia, hypothermia, coma, and changes in cardiac output**. Symptoms may last for up to 8 hours.

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Clinicians and providers should be aware that xylazine use is linked to an increased risk of severe soft tissue infection. Consider possible repeated exposure to xylazine in patients with severe, necrotic skin ulcerations. Other conditions to look for include compression neuropathy, pressure ulcers, and rhabdomyolysis.

While there is no published evidence about pregnancy and xylazine, similar drugs, such as clonidine, are used with caution in pregnancy and lactation because of concerns about heart rate and blood pressure changes in the pregnant person, fetus, and breastfed infant.

Xylazine Overdose Response and Withdrawal

Health providers should consider the possibility of exposure to xylazine when patients presenting with an overdose do not respond to naloxone. In these situations, provide supportive respiratory care and proper management of blood pressure.

Xylazine, when stopped abruptly, can lead to severe withdrawal symptoms. The symptoms can include anxiety, irritability, and restlessness. Severe hypertension is also possible.

- If admitted for inpatient care, clinicians must be prepared to manage xylazine withdrawal symptoms simultaneously with opioid withdrawal.
- Opioid withdrawal should be treated early, with clinically-directed and evidence-based use of medications for opioid use disorder or opioid pain management to mitigate any pain and discomfort that could further exacerbate the manifestations of xylazine withdrawal or lead to discharges against medical advice.
- While there is no FDA-approved treatment for xylazine withdrawal, symptoms can be treated with benzodiazepines (used judiciously) and/or alpha-2 adrenergic agonists, such as clonidine, dexmedetomidine, tizanidine, and guanfacine.

Xylazine Testing

Consider screening for xylazine. Xylazine is not included in routine immunoassay toxicology screens. Even with appropriate testing, xylazine may be under-detected due to its rapid elimination from the body, with a half-life of 23-50 minutes. New laws established in the 2023 legislative session in Minnesota include the decriminalization of drug checking equipment, including xylazine test strips, which people can use to test their drugs for the presence of xylazine.

Xylazine Statistics in Minnesota

The first known xylazine-involved overdose death in Minnesota occurred in 2019. Since then, the number of xylazine-involved deaths has increased every year.

- In 2019, there were four overdose deaths involving xylazine, followed by eight in 2022 and 24 in 2021.
- Preliminary 2022 data shows there were 34 xylazine-involved deaths across the state.

Minnesota counties with at least one known xylazine-related death from 2019-2022 include: Anoka, Beltrami, Dakota, Hennepin, Morrison, Olmstead, Ramsey, St. Louis, Scott, Stearns, Washington, and Wright.

In total, there were 70 reported xylazine-related overdose deaths in MN from 2019-2022.

Toxicology testing shows that fentanyl was also present in 100% of xylazine-related deaths.

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MNDOSA collects data from select hospitals Minnesota to identify issues related to substance use and overdose that need further investigation. This analysis looks at a small number of cases and is not representative of statewide trends or overall substance misuse. Finally, toxicology testing detects a wide variety of substances a person has been exposed to around the time of their ED visit and can provide more accuracy about substances related to their clinical presentation. This data shows a snapshot of exposures, but cannot determine which substances resulted in certain symptoms, when substances were used, or whether substances were used together or sequentially.

Cases reported through MNDOSA involve acute substance misuse or overdose; among MNDOSA cases positive for xylazine, no cases had data on wounds or lesions from the reported ED encounter.

For More Information

- [MDH Xylazine \(https://www.health.state.mn.us/communities/opioids/basics/xylazine.html\)](https://www.health.state.mn.us/communities/opioids/basics/xylazine.html)
- [CDC: Drug Overdose - What You Should Know about Xylazine https://www.cdc.gov/drugoverdose/deaths/other-drugs/xylazine/faq.html](https://www.cdc.gov/drugoverdose/deaths/other-drugs/xylazine/faq.html)
- [MDH Minnesota Drug Overdose and Substance Use Surveillance Activity \(MNDOSA\) \(https://www.health.state.mn.us/communities/injury/data/mndosa.html\)](https://www.health.state.mn.us/communities/injury/data/mndosa.html)

A copy of this HAN is available at: [MDH Health Alert Network \(http://www.health.state.mn.us/han\)](http://www.health.state.mn.us/han)

The content of this message is intended for public health and health care personnel and response partners who have a need to know the information to perform their duties.