Information Bulletin

Medetomidine: Emerging Adulterant in Illicit Drug Supply

Overview

This bulletin alerts Louisiana public health and safety partners about medetomidine, an emerging adulterant in the national illicit drug supply. While medetomidine has not yet been broadly detected in Louisiana's drug supply, the New Orleans Police Department has reviewed data from completed casework and found the presence of the substance in recent drug seizures. Overdose prevention organizations have also received anecdotal reports of its presence from people who use drugs. Medetomidine has been increasingly identified as an adulterant in illegally manufactured opioids across multiple states since 2022 with notable outbreak events occurring in Missouri, Colorado, Pennsylvania,[1] Illinois[2] and other regions throughout 2024 and 2025. To date, medetomidine has been found in combination with xylazine.[3]

Details

Medetomidine is a non-opioid tranquilizer that is approved exclusively for veterinary use as a sedative and analgesic. It is not approved for human use by the FDA. The substance is similar to xylazine but 200-300 times more potent and longer lasting. Like xylazine, it does not respond to naloxone. However, because it is often mixed with fentanyl and other illicit opioids, naloxone should be administered if a medetomidine overdose is suspected.

Medetomidine was first identified in the United States in 2022 and has been rapidly spreading since 2024, according to a series of Morbidity and Mortality Reports from the Centers for Disease Control and Prevention (CDC).[1,2,4]

Information for the General Public

Individuals should be aware that substances adulterated with medetomidine may cause:

- Sedation lasting several hours beyond typical opioid effects
- Severe drowsiness that may be difficult to reverse with naloxone alone
- Very slow heart rate (bradycardia), which could be life-threatening
- Low blood pressure and slow, shallow breathing
- Muscle relaxation, altered mental status and loss of coordination

If someone appears to overdose on drugs potentially containing medetomidine, still administer naloxone as directed, but be prepared that it might not fully reverse all symptoms. As with any overdose, the goal is for the individual to resume breathing. Call 911 immediately, as medical intervention may be required.

Information for People Who Use Drugs

If you use drugs, continue to test substances when possible, even though medetomidine test strips are not yet widely available. It is important that individuals never use alone and that naloxone is always available. If prolonged sedation has occurred, seek medical attention immediately and be aware that withdrawal may require medical support.

Information for First Responders (EMS, Law Enforcement)

First responders, including police, fire and EMS, should continue standard overdose response protocols including naloxone administration. Be prepared for prolonged sedation and monitor vital signs and cardiovascular status closely, particularly heart rate and blood pressure.

Information for Healthcare Providers

The main clinical presentation of medetomidine exposure involves heavy sedation that does not respond to naloxone administration and lasts longer than typical opioid intoxication. The patient may experience significant bradycardia and hypotension requiring cardiovascular support, as well as elevated blood glucose levels.

Treatment Considerations for Medetomidine Exposure

Supportive care until the effects of the drug wear off is the primary course of treatment, particularly cardiovascular monitoring due to bradycardia and hypotension risks. Naloxone should still be administered, but providers should not expect a complete reversal of symptoms. Providers should also keep in mind that administering more naloxone than strictly necessary may precipitate severe opioid withdrawal. While atipamezole is the specific reversal agent for medetomidine, providers should be aware it is primarily only available in veterinary settings. Because medetomidine may last longer than other opioids and sedatives, extended observation may be necessary.

Withdrawal Information

Recent reports from Pittsburgh and Philadelphia, Pennsylvania[4] documented severe withdrawal symptoms in patients who had used substances that were adulterated with medetomidine. Most required ICU-level care with dexmedetomidine infusions. Severe withdrawal symptoms may include life-threatening hypertension and tachycardia, severe anxiety and agitation, profuse sweating, repeated vomiting and severe discomfort requiring medical intervention.

Medetomidine withdrawal may be more severe than synthetic opioid and/or xylazine withdrawal and may require specialized medical management. Standard opioid withdrawal protocols may be insufficient.

For questions about this brief, please contact Louisiana Public Health Analyst, Dana Wilkosz at dwilkosz@cdcfoundation.org

Notes

[1] Evan S. Schwarz et al., "Detection of Medetomidine Among Patients Evaluated in Emergency Departments for Suspected Opioid Overdoses — Missouri, Colorado, and Pennsylvania, September 2020–December 2023." *Morbidity and Mortality Weekly Report: Notes from the Field.* Centers for Disease Control and Prevention. August 2024. https://www.cdc.gov/mmwr/volumes/73/wr/mm7330a3.htm

[2] Amy Nham et al., "Overdoses Involving Medetomidine Mixed with Opioids — Chicago, Illinois, May 2024." *Morbidity and Mortality Weekly Report.* Centers for Disease Control and Prevention. May 2025. https://www.cdc.gov/mmwr/volumes/74/wr/mm7415a1.htm

[3] "Public Alert: Medetomidine Rapidly Proliferating Across USA." The Center for Forensic Science Research & Education (CFSRE). May 2024. https://www.cfsre.org/images/content/reports/public_alerts/Public_Alert_Medetomidine_052024.pdf

[4] Samantha Huo, "Suspected Medetomidine Withdrawal Syndrome Among Fentanyl-Exposed Patients — Philadelphia, Pennsylvania, September 2024–January 2025." *Morbidity and Mortality Weekly Report: Notes from the Field.* Centers for Disease Control and Prevention. May 2025. Accessed July 30, 2025. https://www.cdc.gov/mmwr/volumes/74/wr/mm7415a2.htm