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Summary

The Indiana Department of Health (IDOH) is alerting law enforcement, first responders, clinicians, and public health professionals about an emerging drug called medetomidine, a non-opioid sedative used in veterinary medicine. Medetomidine is being mixed with illicit substances. While it is most commonly detected alongside fentanyl and xylazine, medetomidine has also been identified with other substances, such as heroin and fentanyl analogs.

Background

Medetomidine is an alpha-2 agonist intended for veterinary use, similar to xylazine.¹ Medetomidine was first approved by the Food and Drug Administration (FDA) in 1996 for veterinary use, specifically as a sedative and analgesic for dogs. Medetomidine is not approved for human use.² However, in human medicine, medetomidine is the most closely related to dexmedetomidine, which was approved as a sedative for human patients in 1999.³

Additionally, as medetomidine is not approved for human use, current knowledge of its clinical effects is largely based on veterinary research. According to an animal-based study, medetomidine was found to be a stronger and longer-acting sedative than xylazine.⁴

Currently, neither medetomidine nor dexmedetomidine are scheduled as controlled substances by the United States Drug Enforcement Administration.

Medetomidine has been identified in multiple states. It was first detected in Maryland in July 2022.⁵ Since then, it has also been identified in drug products and has been connected to an outbreak of overdoses and adverse effects in Philadelphia, Pittsburgh and Chicago in 2024.¹

Medetomidine Detections in Indiana

Indiana Syringe Service Program (Marion County only)

- Medetomidine has been detected in returned syringes at multiple Marion County Syringe Service Program sites
- Positive detections of medetomidine date from November 2023 through March 2024
- Currently, all syringes in Marion County that contained medetomidine also contained fentanyl or a fentanyl analog

Indiana Toxicology

- Indiana's toxicology program, which tests specimens from decedents in cases of suspected overdose deaths, tests for medetomidine. As of May 2024, there have not been positive toxicology results for medetomidine.

Indiana Prescription Drug Monitoring Program

- There have been no records of medetomidine or dexmedetomidine prescriptions in Indiana's Prescription Drug Monitoring Program (INSPECT) data from 2013 to 2024

While Indiana's overdose surveillance has identified limited detections of medetomidine, it is imperative to continue monitoring for the drug in Indiana. Closely monitoring the emergence of novel substances is critical to inform prevention and control efforts, such as those implemented in response to the emergence of xylazine.

Overdose Signs and Symptoms

While research on its impact on humans is limited, findings suggest that medetomidine use shares some symptoms with xylazine use, including respiratory depression (i.e., slow or shallow breathing), dry mouth, vasoconstriction (i.e., narrowing of blood vessels), hypothermia (i.e., lowered body temperature), hypotension (i.e., low blood pressure) and low heart rate. Some symptoms of medetomidine use that are not seen with xylazine use are muscle twitches, hallucinations and peripheral cyanosis (i.e., blue discoloration of extremities like hands, fingers and toes).^{1, 6-8} It is not clear whether medetomidine use can lead to wounds like those associated with xylazine use.⁹

When combined with an opioid, the sedative effects of medetomidine are also longer lasting and stronger.⁶ Additionally in veterinary literature, combining medetomidine and opioids has resulted in greater respiratory depression.¹⁰ This is noteworthy since medetomidine has commonly been detected in toxicology results alongside opioids.¹

Because medetomidine is not an opioid, naloxone administration may not be as effective at fully reversing a medetomidine-involved overdose. However, whenever an overdose is suspected, naloxone should always be administered since multiple substances may be present, and naloxone will work on any opioids contributing to the overdose.

Signs and symptoms of an opioid-involved overdose may include troubled breathing; small pupils; unconsciousness or unresponsiveness; snoring, choking, or gurgling; cold or clammy skin; pale or blue skin; and discolored lips or fingernails. If an overdose is suspected, call 911 and administer naloxone right away, if available.

Obtaining Naloxone

The Indiana Department of Health (IDOH) currently has two grant opportunities open for qualified agencies to receive opioid rescue hits in the form of Narcan nasal spray:

- The first opportunity is open to any local health department in Indiana. Please find the application and announcement for this grant here: <https://redcap.isdh.in.gov/surveys/?s=JNA9CJ34N84FFXF7>.
- The second opportunity is for rural first responder agencies, such as police, emergency medical services (EMS), corrections and/or fire departments. This grant is available to first responders in 62 Indiana counties. Please find the application and announcement for this grant here: <https://redcap.isdh.in.gov/surveys/?s=3Y3W4EWRJT3K3RCH>.



If you have any questions about the naloxone grant opportunities at IDOH, please email the Naloxone Program Manager Laura Hollowell at LHollowell@health.in.gov

Additionally, as of March 29, 2023, naloxone can now be purchased at all pharmacies as an over-the-counter medication. Indiana also has a standing order, signed by Dr. Lindsay Weaver in 2024, enabling all Indiana residents to purchase naloxone without a prescription.

Lastly, to obtain naloxone you may visit OptIN.in.gov and use the "Find Naloxone Entity" tab or Overdoselifeline.org/ and use the "Harm Reduction - Naloxone Near Me" tab to find naloxone providers.

Resources

- IDOH drug overdose data: <https://www.in.gov/health/overdose-prevention/overdose-surveillance/>
- IDOH naloxone information: <https://www.in.gov/health/overdose-prevention/naloxone/>
- CDC opioid resources: <https://www.cdc.gov/opioids/index.html>
- Additional information on medetomidine from The Center for Forensic Science Research and Education: <https://www.cfsre.org/nps-discovery/monographs/medetomidine>

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