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MEMORANDUM

TO: Local Health Departments, emergency rooms and hospitals, physicians, healthcare providers, EMS providers, pharmacies, harm reduction organizations, schools

FROM: IDPH Office of Health Promotion, Division of Emerging Health Issues

DATE: May 21, 2024

SUBJECT: Medetomidine in Illinois Drug Supply

On May 11, 2024, IDPH was notified that multiple individuals had presented at four different hospitals in Cook County with symptoms of opioid toxicity but were not responding to naloxone. Some patients also presented with hypertension, bradycardia, and downward gaze.

Toxicology testing of drug samples identified elevated levels of medetomidine, in addition to fentanyl, heroin, xylazine, alprazolam, and nitazenes in the same samples¹.

Medetomidine is a new adulterant in the drug supply in Illinois. Currently, it has not been identified in any Illinois counties outside of Cook County. Nationally, it has been identified sporadically in multiple states since 2022².

For clinicians:

Medetomidine is a potent non-opioid veterinary sedative and is not approved for use in humans. Similar to xylazine, medetomidine is an alpha-2-adrenergic agonist and causes sedation, analgesia, bradycardia, prolonged hypotension following initial hypertension, and peripheral vasoconstriction. It can also cause respiratory depression, which can be greater when taken with opioid and non-opioid sedatives. Other symptoms of medetomidine toxicity include dry mouth, mydriasis, hypothermia, and spontaneous muscle contractions.³

Another form of the drug, its dextro-isomer dexmedetomidine (Dexdor[®], Precedex[®]), is utilized in human medicine. The adverse symptoms of medetomidine/dexmedetomidine over-exposure should be treated with supportive respiratory care and management of blood pressure. Naloxone will not reverse the effects of medetomidine. There are no FDA approved reversal agents for use in humans.

¹ Chicago Department of Public Health. (2024) [Medetomidine in Chicago's Drug Supply. Health Alert.](#)

² Krotulski, AJ; Shinefeld, J; Moraff, C; Wood, T; Walton, SE; DeBord, JS; Denn, MT; Quinter, AD; Logan, BK. (2024) [Medetomidine Rapidly Proliferating Across USA — Implicated In Recreational Opioid Drug Supply & Causing Overdose Outbreaks, Center for Forensic Science Research and Education, United States](#)

³ Midthun, KM; Mohr, ALA; Browne, T; Logan BK. (2023) [Toxic Adulterant Alert: Medetomidine/Dexmedetomidine, Center for Forensic Science Research and Education, United States](#)

However, in situations with accidental human exposures during zoo medicine, off label use of atipamezole as a reversal agent has been used with some success⁴. Naloxone administration is still recommended in illegal/non-medical drug exposure because medetomidine is almost always found in combination with opioids.³

Action Items:

Local health departments are encouraged to share this alert with community partners:

- Share this information with harm reduction sites, treatment facilities, clinical providers, pharmacies, and schools in your area.
- Educate the public that overdoses are occurring and can be prevented.
- Encourage wide distribution and use of naloxone.

First responders and medical providers:

- If evidence of overdose with abnormal presentation, please notify Illinois Poison Center 1-800-222-1222.
- Naloxone (opioid reversal agent) should be used per protocol when opioid overdose is suspected, with awareness that naloxone will not be as effective if other analgesics have also been ingested.
- As with any suspected opioid overdose, special attention should be paid to the airway with a low threshold for airway support.

Overdose Prevention and Harm Reduction:

- Encourage clients and their family and friends to carry naloxone.
- Encourage clients and their family and friends to ensure substances are kept out of the reach of children.
- Encourage clients to use fentanyl/xylazine test strips before consumption and avoid using drugs alone.
- Inform clients who report any type of illicit drug use that any drug can contain fentanyl.
- Have information on Medication Assisted Recovery (MAR) and treatment programs available.

Additional Resources:

- Illinois Helpline for Opioid and Other Substances
 - [Helplineil.org](http://helplineil.org)
 - Call (833) 234-6343
 - Text "HELP" to 833234
 - Services available en Español
- Illinois Poison Center:
 - 1-800-222-1222
 - <https://www.illinoispoisoncenter.org/>
- Local Health Department listings: <http://www.idph.state.il.us/LHDMAP/HealthRegions.aspx>

⁴ Greenberg M, Rama A, Zuba JR. (2018) Atipamezole as an emergency treatment for overdose from highly concentrated alpha-2 agonists used in zoo and wildlife anesthesia. Am J Emerg Med, 36(1):136-138. doi: 10.1016/j.ajem.2017.06.054. Epub 2017 Jun 27. PMID: 28751043. [Atipamezole as an emergency treatment for overdose from highly concentrated alpha-2 agonists used in zoo and wildlife anesthesia – AJEM \(ajemjournal.com\)](http://ajemjournal.com)

- Instructional videos on naloxone administration: <https://prescribetoprevent.org/patient-education/videos-for-download/>
- Instructions for use of fentanyl test strips: <https://anypositivechange.org/fentanyl-test-strip-instruction-sheet/>
- IDPH opioid webpage: <https://dph.illinois.gov/topics-services/opioids.html>
- DEA One Pill Can Kill Informational Page: <https://www.dea.gov/onepill>
- CSTE Overdose Cluster Toolkit: <https://odalerts.cste.org/>
- A Dose of Truth: <https://www.prevention.org/a-dose-of-truth/>
- Rethink Recovery IL: <https://rethinkrecoveryil.com/>