

Increase in Overdose Events due to Medetomidine in Unregulated Drugs

Background

There has been an increase in opioid poisonings (overdoses) across British Columbia, including within urban and rural areas in Vancouver Coastal Health. Preliminary findings indicate the veterinary sedative [medetomidine](#) may be contributing.¹ Medetomidine is increasingly found as an adulterant in illegal opioids. Patients have presented with profound sedation, bradycardia, and hypertension/hypotension, with many requiring advanced supportive care.

What is medetomidine?

Medetomidine is an alpha-2 adrenergic agonist commonly used in veterinary medicine for sedation and analgesia. It is the racemic mixture of dexmedetomidine (Precedex™; used for sedation in ICU settings) and levomedetomidine. This means the effects are similar but not identical to dexmedetomidine alone.

How does medetomidine affect people?

Exposure to medetomidine can cause central nervous system depression, cardiovascular instability, and worsen opioid-induced respiratory depression. Bradycardia is a prominent feature. Patients can present with hypotension initially or with hypertension followed by hypotension.

Prolonged exposure to medetomidine can cause severe withdrawal upon cessation. Withdrawal is characterized by tachycardia, hypertension, nausea, and vomiting. It may be difficult to differentiate medetomidine withdrawal from benzodiazepine withdrawal, since many patients exposed to medetomidine may also be exposed to opioids mixed with benzodiazepines.

How should overdose with medetomidine be managed?

Manage opioid poisoning using existing protocols. Naloxone should be given if opioid overdose is suspected. If opioids and medetomidine were co-ingested, the person may remain sedated despite restoration of breathing as naloxone does not reverse the effects of medetomidine. Administer the lowest dose of naloxone necessary to reverse respiratory depression to avoid precipitating opioid withdrawal. Management of consequences of medetomidine exposure should focus on monitoring and supportive care. Urine can be sent for GCMS if exposure is suspected.

Contact the BC Drug and Poison Information Centre (DPIC) for case-specific support, including consultation with a medical toxicologist. DPIC is available 24 hours every day for guidance on recognition, monitoring, and treatment strategies. Call DPIC 24/7 at 604-682-5050 or 1-800-567-8911.

How should medetomidine withdrawal be managed?

Consider medetomidine withdrawal if treatment for opioid and (if indicated based on history of potentially benzodiazepine-contaminated opioids) benzodiazepine withdrawal does not improve vital signs or resolve symptoms, especially if hypertension and tachycardia are prominent. Clonidine may help with mild withdrawal symptoms. Reports from the U.S. indicate severe cases required ICU admission and treatment with dexmedetomidine.²⁻³

You can reach a Medical Health Officer at 604.675.3900 | Toll free at 1.855.675.3900
For public health emergencies after hours, contact the Medical Health Officer on call at 604.527.4893

Vancouver Coastal Health Medical Health Officers

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To receive these updates by email, please contact us at VCHPhysiciansUpdate@vch.ca

How should responders prepare?

Medetomidine will likely remain in the illegal opioid supply for the foreseeable future. Preparation will vary based on the setting and may include the following:

- Ensure staff are up to date in ACLS/CPR training (as appropriate),
- Encourage staff to refresh [opioid poisoning response training](https://towardtheheart.com/naloxone-course) (towardtheheart.com/naloxone-course) yearly,
- Discuss medetomidine at a staff meeting and provide information by email,
- Review mass casualty protocols with consideration for mass drug poisoning events,
- Connect patients to [substance use supports](https://helpstartshere.gov.bc.ca) (helpstartshere.gov.bc.ca) if they want to stop using substances,
- Encourage staff to educate patients on the following points:
 - Medetomidine is a new sedative in the illegal opioid supply.
 - Medetomidine can cause the heartbeat to slow or stop. Check pulse and call 911 when responding to drug poisoning. Follow the [SAVE ME steps](https://towardtheheart.com/resource/save-me-steps-to-respond-to-suspected-opioid-poisoning-colour/open) (towardtheheart.com/resource/save-me-steps-to-respond-to-suspected-opioid-poisoning-colour/open).
 - Naloxone does not reverse medetomidine. However, naloxone is safe and should always be given if opioid poisoning is suspected.
 - Withdrawal may need medical attention. It can be treated.
 - Share [safer substance use](https://towardtheheart.com/a-z-resource-page) (towardtheheart.com/a-z-resource-page) and drug poisoning prevention resources.

Resources

¹ [BCCDC Medetomidine info sheet](https://www.bccdc.ca/resource-gallery/Documents/Harm%20Reduction/Medetomidine%20Substance%20Info%20Sheet.pdf) (www.bccdc.ca/resource-gallery/Documents/Harm Reduction/Medetomidine Substance Info Sheet.pdf)

² [Pennsylvania Department of Health – Responding to Overdose and Withdrawal Involving Medetomidine](#)

³ Murphy L, Krotulski A, Hart B, Wong M, Overton R, McKeever R. Clinical characteristics of patients exposed to medetomidine in the illicit opioid drug supply in Philadelphia – a case series. Clin Toxicol. 2025;63(6):438-441. doi:10.1080/15563650.2025.2500601

⁴ [Ottawa Public Health – Medetomidine/dexmedetomidine Fact Sheet](#) (www.ottawapublichealth.ca/en/public-health-topics/resources/Documents/Medetomidine_Dexmedetomidine_Factsheet_EN.pdf)

⁵ [Centre for Forensic Science Research and Education – Medetomidine/dexmedetomidine](#) (www.cfsre.org/images/content/reports/public_alerts/Medetomidine_Public_Health_Alert_Final.pdf)