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# The Regional Municipality of Durham Information Report

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From: Commissioner & Medical Officer of Health  
Report: #2024-INFO-06  
Date: February 9, 2024

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**Subject:**

Medetomidine/Dexmedetomidine: “New” Veterinary Tranquilizer Circulating in Toronto’s Unregulated Fentanyl Supply

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**Recommendation:**

Receive for information

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**Report:**

**1. Purpose**

1.1 To provide an update on Medetomidine/dexmedetomidine, which has been identified in Toronto’s unregulated drug supply.

**2. Background**

2.1 Canada is in the midst of one of the most serious public health crises in the country’s history - the toxic and illegal drug and overdose crisis. No community has been left untouched.

2.2 Drug checking services provide critical information on the composition of the unregulated drug supply in real time, informing and educating people who use drugs, people who care for people who use drugs, advocacy, policy, and research. Incredibly sophisticated and sensitive technologies are required to effectively check highly contaminated opioids that are most likely to contribute to overdose.

2.3 Without technologies like gas and liquid chromatography-mass spectrometry, paper spray-mass spectrometry, and nuclear magnetic resonance spectroscopy, it is very likely that drugs like medetomidine/dexmedetomidine would go undetected.

2.4 [Toronto’s Drug Checking Service](#) (TDCS) is a service that aims to reduce the harms associated with substance use and, specifically, to prevent overdose by offering people who use drugs timely and detailed information on the contents of their drugs.

- 2.5 Beyond educating individual service users, results for all samples are combined, analyzed, and publicly disseminated every other week to communicate drug market trends and inform care for people who use drugs, advocacy, policy, and research.
- 2.6 For the first time, TDCS has identified medetomidine/dexmedetomidine in Toronto's unregulated drug supply.
- 2.7 Dexmedetomidine is approved for use on humans, as well as animals, for sedation and pain relief. Medetomidine is a tranquilizer approved only for use on animals.
- 2.8 Medetomidine and dexmedetomidine have a very similar chemical structure and it is not currently possible for TDCS to differentiate between them. For this reason, these substances are reported together.
- 2.9 These anaesthetic drugs are considered to be more potent (i.e., longer acting and produce greater sedation) than xylazine, which is also a tranquilizer approved only for use on animals.
- 2.10 Drug checking services operating out of Victoria, British Columbia ([Substance Drug Checking](#)), have identified medetomidine/dexmedetomidine, as has [Health Canada's Drug Analysis Service](#) in controlled substances seized by Canadian law enforcement agencies and samples submitted by public health partners. [Drug checking services in the United States](#) have also reported the presence of medetomidine/dexmedetomidine in their unregulated opioid supply.

### 3. Current Status

- 3.1 Medetomidine/dexmedetomidine was first identified by TDCS on December 29, 2023, by an analysis site member at the Centre for Addiction and Mental Health (Clinical Laboratory and Diagnostic Services) using liquid chromatography-Orbitrap high resolution mass spectrometry.
- 3.2 Between December 29, 2023, and January 23, 2024, medetomidine/dexmedetomidine was found in 11% of the expected fentanyl samples checked by TDCS (15 of 140 samples). Additionally, the TDCS is working with [St. Michael's Hospital \(Department of Laboratory Medicine\)](#) to ensure medetomidine/dexmedetomidine is identified using gas chromatography-mass spectrometry.
- 3.3 Medetomidine/dexmedetomidine was found in samples expected to be (i.e., got or bought as) fentanyl, alongside high-potency opioids, like fentanyl, fluorofentanyl, and/or a methylfentanyl-related drug, as well as other central nervous system depressants, like benzodiazepine-related drugs and/or xylazine. The presence of medetomidine/dexmedetomidine was not reported as being expected by those who submitted these samples to be checked.
- 3.4 These samples were collected in Toronto's west end and downtown core. The colour of these samples varied, and included blue, green, grey, orange, purple, and

white. About half of these samples were reported as being strong and/or associated with drowsiness and sedation and/or dizziness/nausea/vomiting.

- 3.5 Much like xylazine and benzodiazepine-related drugs, it is suspected that medetomidine/dexmedetomidine is being added to unregulated fentanyl to mimic or enhance the sedative and euphoric effects of the opioid a person is choosing to use.
- 3.6 Medetomidine/dexmedetomidine may put those who use it in a deep state of unconsciousness, much like xylazine and benzodiazepine-related drugs. The risk of extreme drowsiness and sedation is increased when medetomidine/dexmedetomidine is used in combination with high-potency opioids, benzodiazepine-related drugs, and xylazine. This is noteworthy because 100% of the samples checked by TDCS that contained medetomidine/dexmedetomidine contained at least one high-potency opioid. Many of these samples also contained a benzodiazepine-related drug or xylazine.
- 3.7 Medetomidine/dexmedetomidine may produce other harmful and unexpected effects, such as [cardiac and circulatory system depression](#) (e.g., decrease in blood pressure and heart rate) and [respiratory depression](#) (i.e., slowing down of breathing).

#### 4. Previous Reports

- 4.1 Report [2023-INFO-26](#) provided information on the appearance of benzodiazepines and xylazine in the unregulated drug supply.
- 4.2 Report [2023-INFO-33](#) provided an update on local trends and strategies to address mental health and opioids in Durham Region.
- 4.3 Report [2023-INFO-46](#) provided an update on the Durham Region Opioid Response Plan.
- 4.4 Report [2023-INFO-47](#) provided information on the application process for Consumption and Treatment Services (CTS) in Ontario.
- 4.5 Report [2023-INFO-60](#) provided an update on the report: [Opioid Toxicity and Access to Treatment among Adolescents and Young Adults in Ontario](#), released by ODPRN, PHO and the Office of the Chief Coroner of Ontario/Ontario Forensic Pathology Service on June 27, 2023.
- 4.6 Report [2023-INFO-74](#) provided information on DRHD's school-based health promotion services, including mental health promotion and substance use prevention.
- 4.7 Report [2023-INFO-77](#) provided an update on the report published by the Canadian Centre on Substance Use and Addiction (CCSA), entitled [Canadian Substance Use Costs and Harms](#) (CSUCH), released in March 2023 and revised in July 2023.

- 4.8 Report [2023-INFO-83](#) provided an update on the report entitled: [Characteristics of Substance-Related Toxicity Deaths in Ontario: Stimulant, Opioid, Benzodiazepine, and Alcohol-Related Deaths](#), by Public Health Ontario (PHO) and The Ontario Drug Policy Research Network (ODPRN), released on September 14, 2023.
- 4.9 Report [2023-INFO-92](#) provide an update on the renewed [Canadian Drugs and Substances Strategy](#) (CDSS).

## 5. Relationship to Strategic Plan

- 5.1 This report aligns with the following strategic goal and priority in the Durham Region Strategic Plan:
- a. Goal 2: Community Vitality: 2.2 Enhance community safety and well-being.

## 6. Conclusion

- 6.1 In Durham Region, test strips for fentanyl and xylazine are available through the Needle Syringe Program. Locally, drug checking services that utilize mass spectrometry are not available. Durham Regional Police Service (DRPS) receives [Health Canada Drug Testing](#) results for samples seized and submitted to Health Canada.
- 6.2 DRPS is a member of the Opioid Task Force and advises the Durham Region Health Department (DRHD) regarding Health Canada drug testing findings that are noteworthy and/or indicate a new drug is present within the region. As per the nature of [Health Canada's Drug Testing](#) methodology, such results from toxicology are several months behind real-time data.
- 6.3 DRHD, in partnership with the Opioid Task Force members will continue to monitor information related to the presence of new toxic drugs within the Greater Toronto and Hamilton Area (GTHA) to inform the [Durham Region Opioid Response Plan](#).

Respectfully submitted,

Original signed by

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