COM-CAP
Community Opioid / Overdose Capacity Building

Public Health Ontario | Santé publique Ontario

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Learning Exchange: Risk of Novel Synthetic Opioids in Ontario

September 17, 2021

About Community Opioid/Overdose Capacity Building

Community Opioid/Overdose Capacity Building (COM-CAP), started in 2019, is a four-year project funded by Health Canada's Substance Use and Addiction Program. The goal of COM-CAP is to support community-led responses to opioid/overdose-related harms in communities across Ontario. The supports focus on strengthening the knowledge, skills, and capacity of the key stakeholders involved:

- The Ontario College of Art & Design University (OCAD U) - Health Design Studio
- University of Toronto- Strategy Design and Evaluation Initiative
- Black Coalition for AIDS Prevention
- Chatham-Kent Public Health
- NorWest Community Health Centres
- Drug Strategy Network of Ontario

For more information about COM-CAP, contact substanceuse@oahpp.ca

Ontario Network of People who use Drugs (ONPUD)

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Learning Exchange Overview

Agenda and objectives

OBJECTIVES

- Understand the risks with novel synthetic opioids
- Identify best practices in overdose responses
- Describe opportunities for multi-stakeholder responses to overdoses

AGENDA

Item	Speakers/Panelists
Welcome and overview	Pamela Leece, Public Health Ontario Natalie Kaminski, Ontario Network of People who use Drugs
Presentations	Karen McDonald, Centre on Drug Policy Evaluation Regan Murray, Office of the Chief Coroner for Ontario
Panel discussion	Ashley Smoke, Ontario Network of People who use Drugs Muhaari A, Black Coalition for AIDS Prevention (Black CAP) Nick Boyce, Ontario Harm Reduction Network Jennifer Levy, Toronto Public Health
Facilitated discussion	Natalie Kaminski & Pamela Leece
Wrap up	Natalie Kaminski & Pamela Leece

Polls

Presentations

Toronto's Drug Checking Service

Coordinated by the Centre on Drug Policy Evaluation

Public Health Ontario Learning Exchange: Risk of Novel Synthetic Opioids in Ontario

September 17, 2021

Karen McDonald, Lead, Toronto's Drug Checking Service (St. Michael's Hospital)

Acknowledgements

We acknowledge the members of our community advisory board, our partner organizations, and those that have lost their lives – both in the ongoing drug poisoning crisis and long before – due to policies of drug criminalization.

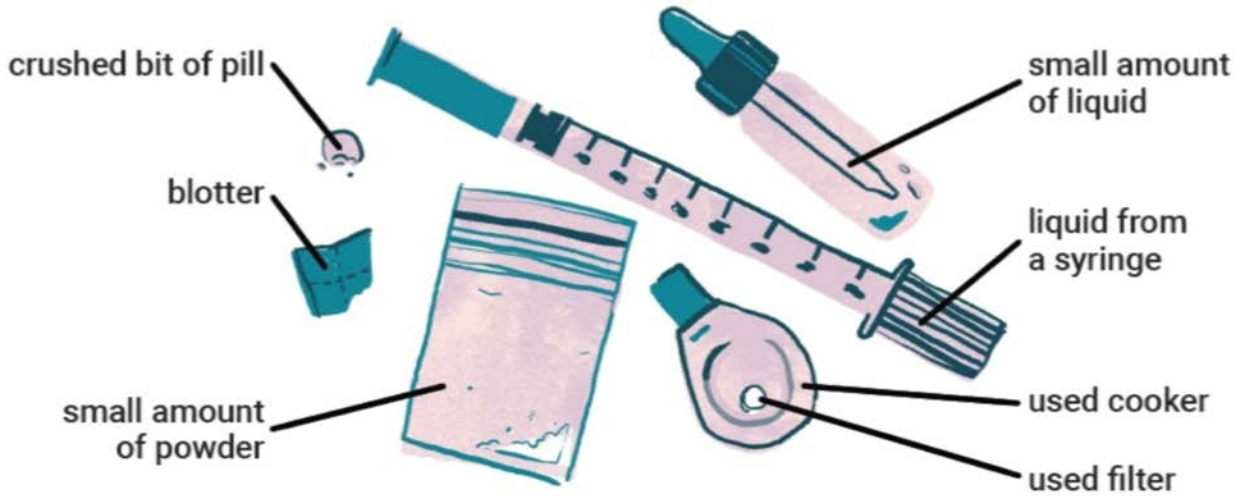
We acknowledge that the land on which we operate Toronto's drug checking service is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee, and the Wendat peoples, and is now home to many diverse First Nations, Inuit, and Métis peoples.

We acknowledge that racialized communities and survivors of colonization are disproportionately impacted by unjust drug policies. We strive to support the development of equitable drug policies that are responsive to the needs of racialized people who use drugs – including Black, Indigenous, and People of Colour – and their communities.

Free and anonymous drug checking is now available!

What you give...

A sample, which can be:



What you get...

A few things we know about nitazene opioids

- Synthesized in the 1950s to relieve pain but never clinically approved for market
- Identified in the unregulated drug supply in 2019
- At least 14 different nitazene analogues
- Considered to be as strong as – or up to 20x stronger than – fentanyl

Nitazene opioids identified in 73 samples checked*

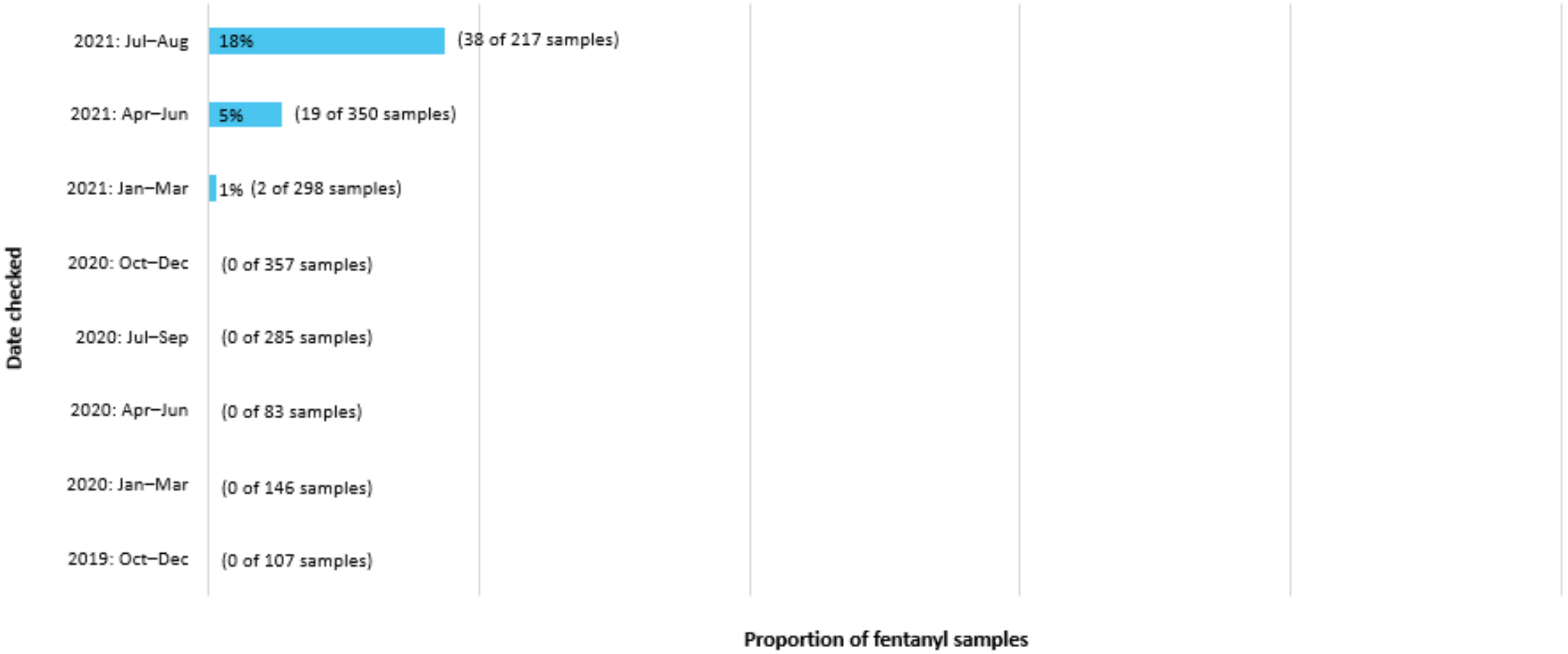
Oct10/19 – Aug31/21 | www.drugchecking.cdpe.org

	Drug name	Suggested strength compared to fentanyl	First identified	Found in how many samples
1	Isotonitazene	5x stronger	February 12, 2021	28
2	Etonitazene	10x stronger	May 5, 2021	3
3	Metonitazene	Similar strength	May 31, 2021	38
4	Etodesnitazene	Similar strength	June 24, 2021	2
5	Etonitazepyne	10x stronger	July 13, 2021	5
6	Protonitazene	2x stronger	August 19, 2021	2

* Samples were expected to be: fentanyl, heroin, carfentanil, down, or in samples where the expected drug was not shared or unknown

Nitazene opioid* trends in expected fentanyl samples by quarter

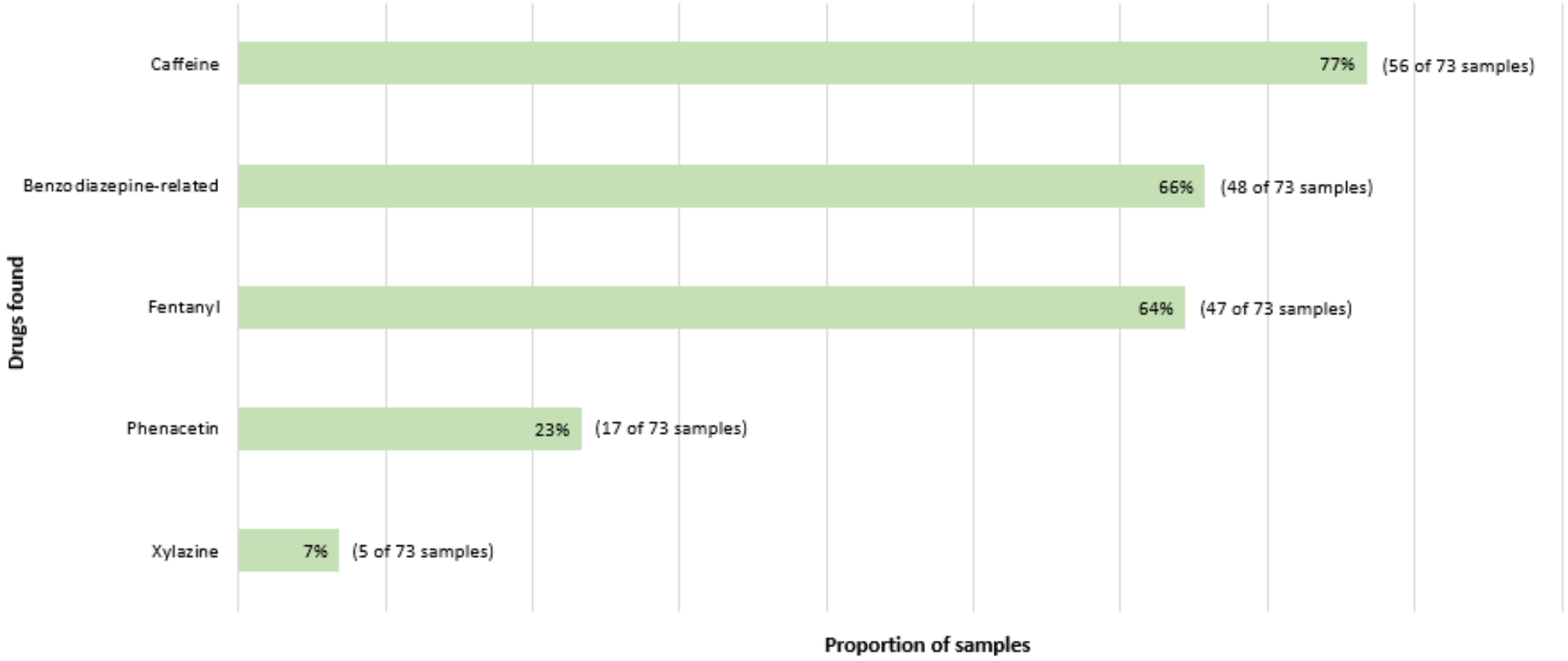
Oct10/19 – Aug31/21 | www.drugchecking.cdpe.org



***** Nitazene opioids found include: metonitazene, isotonitazene, etonitazepyne, etonitazene, protonitazene, and etodesnitazene

Other drugs found alongside nitazene opioids in checked samples*

Oct10/19 – Aug31/21 | www.drugchecking.cdpe.org



* Samples were expected to be: fentanyl, heroin, carfentanil, down, or in samples where the expected drug was not shared or unknown

Other observations about samples containing nitazene opioids

- In 22% (16) of the samples, the only opioids found were nitazene opioids
- 8% (6) contained more than one nitazene opioid
- 15% (11) were reported as being associated with OD
- Samples varied in colour: brown, green, purple, blue, red, pink, yellow

Thank you!

- Questions or comments? You can reach us at drugchecking@cdpe.org.
- Interact with our drug checking data on our website – it's updated every other week: www.drugchecking.cdpe.org. We also regularly post alerts, reports, and other information about Toronto's unregulated drug supply.

References

- Toronto's Drug Checking Service (2021). www.drugchecking.cdpe.org
- Mueller F, Bogdal C, Pfeiffer B, Andrello L, Ceschi A, Thomas A, Grata E. Isotonitazene: Fatal intoxication in three cases involving this unreported novel psychoactive substance in Switzerland. Forensic Sci Int. 2021 Mar;320:110686.
- European Monitoring Centre for Drugs and Drug Addiction (2020). Risk assessment report on the new psychoactive substance N,N-diethyl-2-[[4-(1-methylethoxy)phenyl]methyl]-5-nitro-1H-benzimidazole-1-ethanamine (isotonitazene) in accordance with Article 5c of Regulation (EC) No 1920/2006 (as amended). Risk Assessments, Publications Office of the European Union, Luxembourg.
- Government of Alberta, Ministry of Justice and Solicitor General, Office of the Chief Medical Examiner (2019). Novel psychoactive substances (NPS) detection in Alberta casework.

Nitazenes
and
Update from the Office of the Chief Coroner

Public Health Ontario Learning Exchange: Risk of Novel Synthetic Opioids in Ontario

Sept 17, 2021

Prepared by Regan Murray

Public Health Officer placed at the Office of the Chief Coroner

Health Canada Drug Analysis Service

Health Canada's Drug Analysis Service (HC DAS) operates laboratories across Canada that analyze suspected illegal drugs seized by Canadian law enforcement agencies.

- DAS shares raw, anonymous data on samples analyzed and quantified for each province and territory on a monthly basis
- In 2020, 33,830 samples were tested in Ontario

Note from data source: These statistics are based on samples analyzed by DAS and may not be representative of drug seizures in Canada, nor of what drugs are circulating on the market. DAS data should not be used as a basis for determining trends or making comparisons.

HC DAS data notes and limitations:

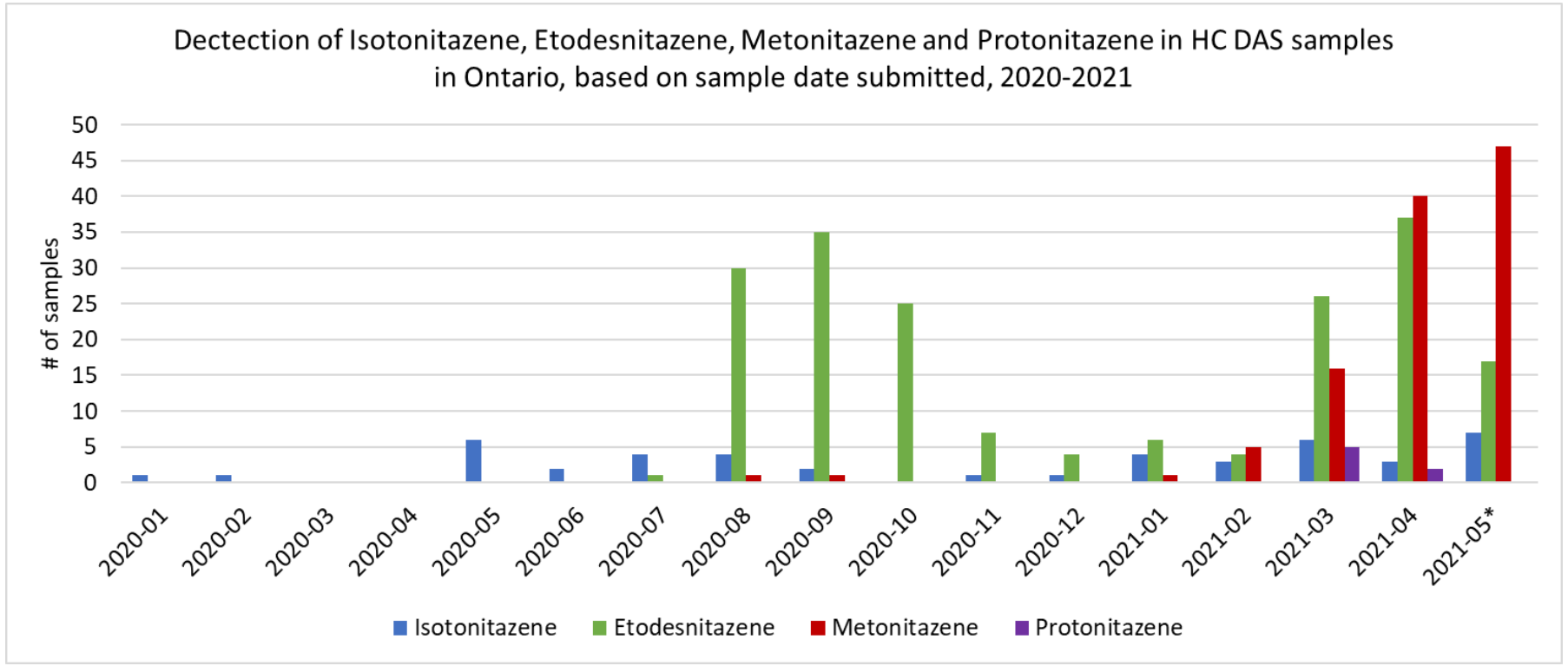
- Multiple substances may have been detected in a single sample
- Can not discern if samples are pre-street seizures vs seizures already in circulation
- Multiple samples can be drawn from the same seizure and can not determine the size of the seizure
- Samples can include tablets, powders, residue, syringes etc.
- Routine reporting began in Aug 2018 and included once the result is returned to the client (police service), and can be weeks to months after the seizure date (average 74 days)
- In Feb 2020 reporting date received at HC DAS and customer city were made routinely available
  - Received date: date HC DAS received sample. Note police may hold the sample for a period of time before submitting
  - Customer city: (police department/detachment submitting) not location of seizure

Detection in HC DAS samples submitted in Ontario, Jan 2020-May 2021

	Isotonitazene	Etodesnitazene	Metonitazene	Protonitazene
Total samples	46	188	118	6
Sample submission date to HC DAS of first sample detected	Jan 2020	Aug 2020	Aug 2020	Mar 2021
Number of regions (submitting police detachments*) with positive samples	20	40	24	3
% of samples with fentanyl also detected	17%	99%	89%	0%
% of samples with benzodiazepine also detected	7%	49%	57%	0%

*Location reflects the police detachment/department not location of seizures
Note: Substance categories are not mutually exclusive
Source: Health Canada Drug Analysis Monthly Data – data effective Sept 8, 2021

Isotonitazene, Etodesnitazene, Metonitazene and Protonitazene detected in Ontario HC DAS Samples, 2020-2021



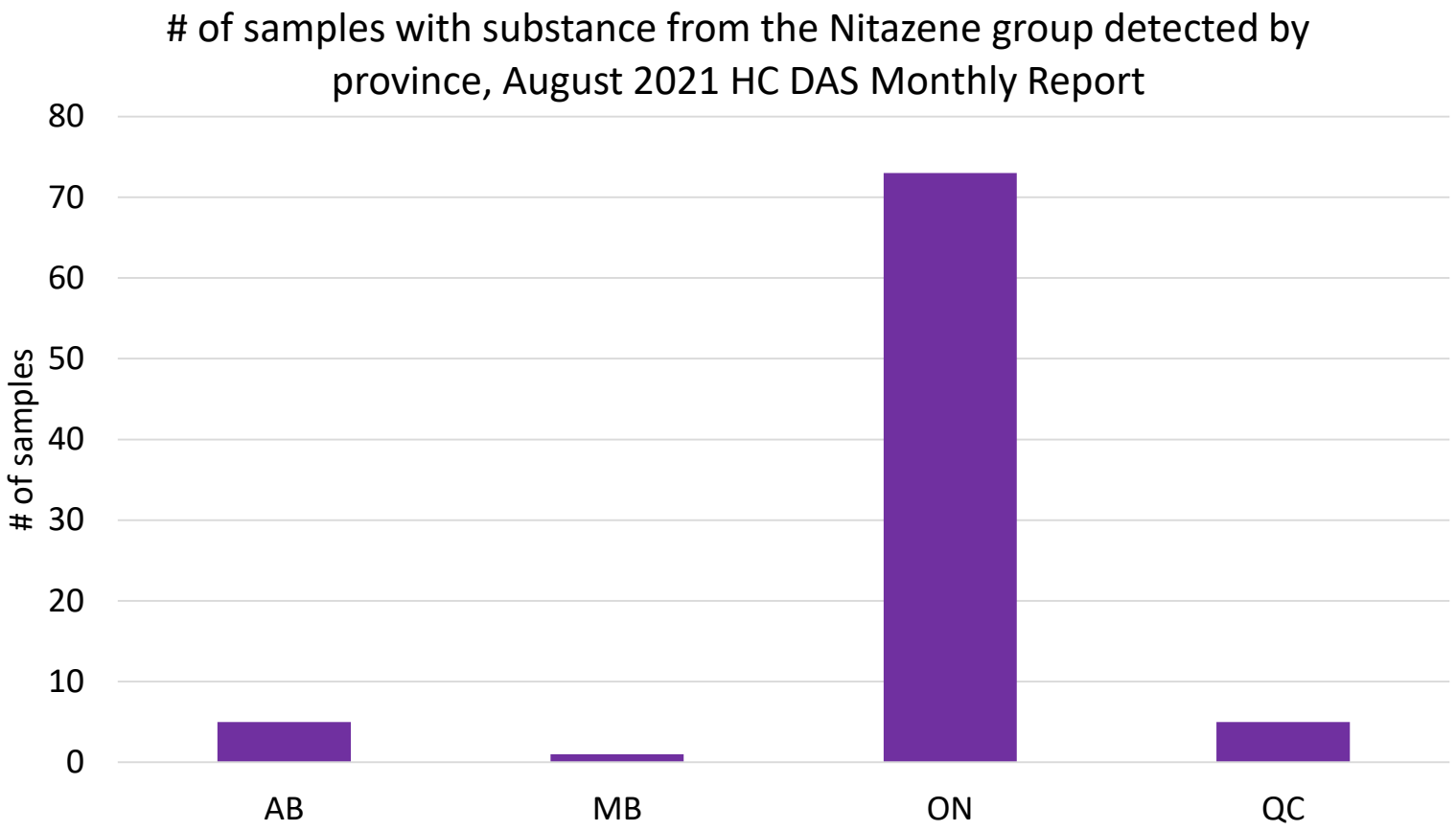
Drug	First identification in HS DAS Samples in Canada
Isotonitazene	2019-11-27
Etodesnitazene	2020-08-31
Metonitazene	2021-01-28

Samples may be counted in more then 1 substance category
Source: Health Canada Drug Analysis Monthly Data – data effective Sept 8, 2021

Public Health regions with Etodesnitazene, Metonitazene and Isotonitazene detected in HC DAS sample(s), 2020-May 2021

Public Health Unit	Etodesnitazene	Metonitazene	Isotonitazene
Algoma Public Health	-	-	-
Brant County Health Unit	x	x	-
Chatham-Kent Health Unit	x	-	x
Durham Region Health Department	x	x	x
Eastern Ontario Health Unit	x	-	x
Grey Bruce Health Unit	x	-	x
Haldimand-Norfolk Health Unit	-	-	-
Haliburton, Kawartha, Pine Ridge District Health Unit	x	x	x
Halton Region Public Health	x	-	x
Hamilton Public Health	x	x	x
Hastings and Prince Edward Counties Health Unit	x	x	-
Huron Perth Health Unit	x	-	-
Kingston, Frontenac and Lennox & Addington Public Health	-	x	-
Lambton Health Unit	x	-	-
Leeds, Grenville and Lanark District Health Unit	x	x	-
Middlesex-London Health Unit	x	x	-
Niagara Region Public Health Department	x	x	x
North Bay Parry Sound District Health Unit	x	x	-
Northwestern Health Unit	-	-	x
Ottawa Public Health	x	x	-
Peel Public Health	x	x	x
Peterborough Public Health	x	x	-
Porcupine Health Unit	x	x	x
Region of Waterloo Public Health	x	x	x
Renfrew County and District Health Unit	x	-	-
Simcoe Muskoka District Health Unit	x	x	-
Southwestern Public Health	x	-	x
Sudbury & District Health Unit	x	x	x
Thunder Bay District Health Unit	x	x	x
Timiskaming Health Unit	-	-	-
Toronto Public Health	x	x	x
Wellington-Dufferin-Guelph Health Unit	x	-	-
Windsor-Essex County Health Unit	x	x	x
York Region Public Health Services	x	-	x

Detection of Nitazene substances in HC DAS samples submitted by province, Aug 2021 Report



Based on the August 2021 monthly report (most recent report available), the number of samples with detection of nitazene substances reported was greater in Ontario (73 positive samples), compared to other provinces with 5 or fewer positive samples in Alberta, Manitoba or Quebec

Source: Health Canada Drug Analysis Monthly Data – data effective Sept 8, 2021

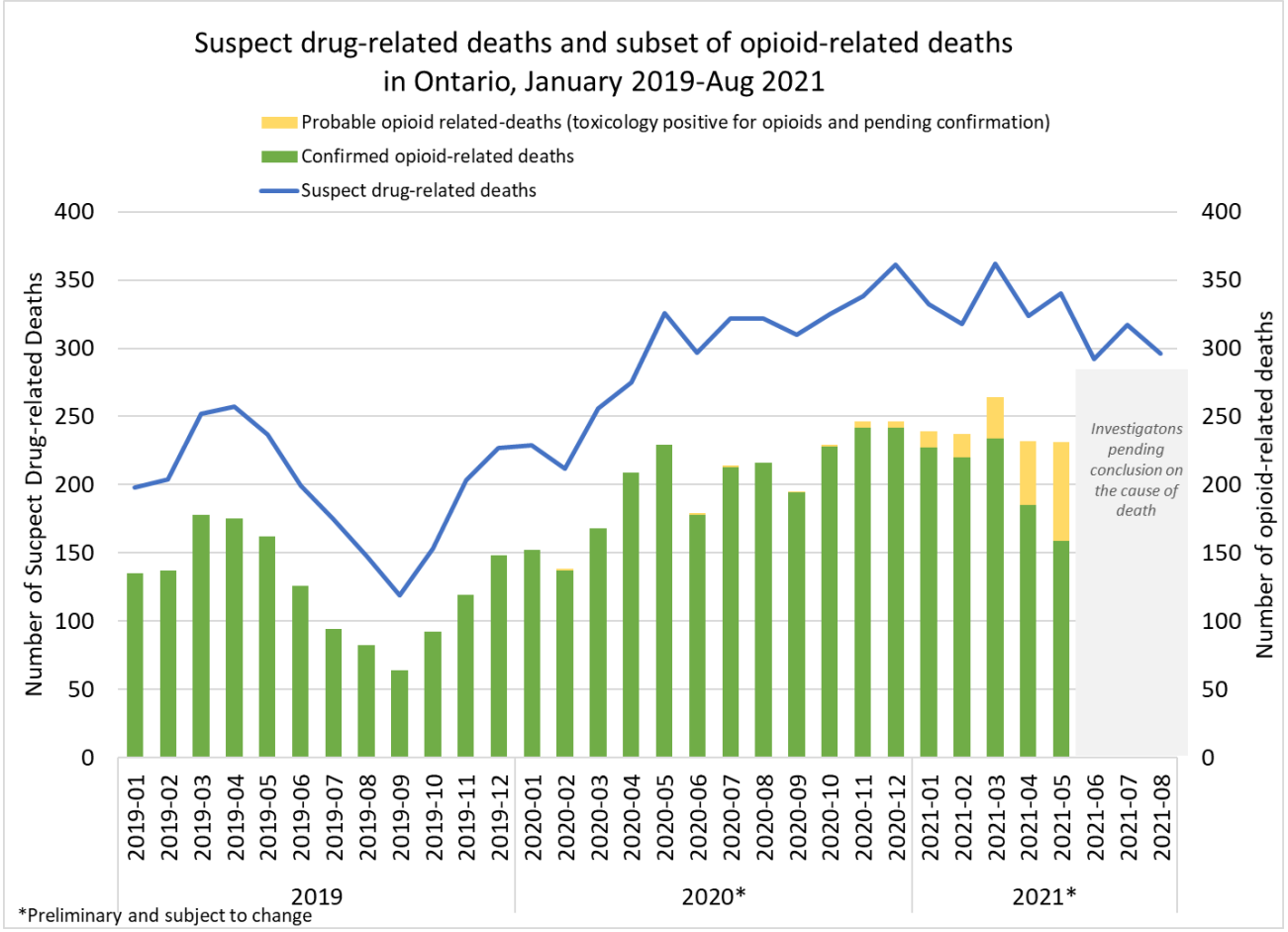
Update from the Office of the Chief Coroner (OCC)

Many death investigations for 2021 are ongoing; finalized investigations may identify additional deaths where there was involvement of these substances

Substance	**Centre of Forensic Sciences Toxicology Testing Capacity**	**OCC Death Investigations**
Isotonitazene	Qualitative detection	Detected in 1 death at end of July 2021 in Toronto
Metonitazene	Qualitative detection	Attributed to 1 death in Sept 2020 (outside Toronto)
Protonitazene Flunitazene N-pyrrolidino etonitazene	Qualitative detection	
Other Nitazenes	In development	

2021 opioid-mortality and suspect-drug related deaths in Ontario

- 300 or more suspect drug-related deaths continue to be reported each month over the summer months
- ~1200 opioid-related deaths occurred from Jan-May 2021
  - 88% involved fentanyl
  - 50 deaths involved carfentanil
  - 65% of deaths benzodiazapine was detected in post-mortem toxicology



THANK YOU!

Questions or comments? Please reach out at Regan.Murray@ontario.ca

Risk assessment

Background and approach

- **Rationale:**
  - Novel non-fentanyl synthetic opioid (NSOs) (i.e. benzimidazole-opioid group) - emerging in Ontario, British Columbia and internationally
  - It is important to consider the potential impact of NSOs on opioid-related morbidity and mortality in Ontario.
- **Search:**
  - Published literature: MEDLINE, Embase; English language, 2011+
  - Grey literature: [in progress]
- **Inclusion criteria:**
  - Benzimidazole-opioid; characteristics, exposure or outcomes (animal, human); study design (vs. commentary, letter, narrative review)

Findings

- 6 articles included from the published literature (1000+ results)*
- **Exposure:**
  - Darknet markets, NSO (6/20-8/20) – 14/17 first time listed, 5/17 BMZ, etazene most common
  - Reddit (2013-20) – 7/8 NPS (including isotonitazene) appeared prior to implication in poisoning deaths in the US; implication for social media as predictor of trends in NPS exposures
  - Isotonitazene, 40 deaths (US, 1/20-7/20) – 981 involved other synthetic opioids; ISZ deaths involved greater number of substances, flualprazolam
- **Severity:**
  - 10 nitazenes, 4 metabolites synthesized; MS-based nitazene screening potential; potencies > fentanyl; etonizatene > isotonizatene; metabolite > precursor; simple, cost-efficient, non-regulated precursors
  - Isotonitazene, 3 deaths (Switzerland, earliest 3/19), 2 involved BNZ and 1 ethanol; implications for qualitative screening, testing items at the site
  - Metonitazine, 20 deaths (US, 11/20-2/21) – accidental, contributed to death; 30% as only opioid; implication for forensic testing protocols

*See ‘References- Risk Assessment’ for list of included articles

Risk assessment

Issue	Risk Level	Degree of Uncertainty
Increased exposure	**Moderate** Increasing prevalence in the drug supply Most are exposed to other synthetic opioids	**High**
Overdose severity	**Moderate/High** Spectrum of potency may exceed fentanyl Often found with other sedating drugs	**High**
Lowered effectiveness of interventions	**Moderate** Naloxone works, may need higher doses Prolonged sedation with other drugs involved	**High**
Impacts on testing/ surveillance	**High** Need testing available for harm reduction, health care, forensic purposes; not yet implemented	**Low**

Key messages

- NSOs have emerging presence in the unregulated drug supply, including samples from communities and deaths in Ontario.
- Uncertainty due to the small body of relevant information, testing limitations, and overall toxicity of the unregulated drug supply.
- The risk of severe overdose is moderate to high, with the potential to need higher doses of naloxone.
- Available information supports continuing with current approaches to opioid overdose prevention and response.
- New and innovative public health approaches and community-led responses are needed to address the toxic drug supply to improve safety for people who use drugs.

References- Risk Assessment

- Barenholtz E, Krotulski AJ, Morris P, Fitzgerald ND, Le A, Papsun DM, et al. Online surveillance of novel psychoactive substances (NPS): monitoring Reddit discussions as a predictor of increased NPS-related exposures. Int J Drug Policy. 2021;98:103393. Available from: https://doi.org/10.1016/j.drugpo.2021.103393
- Krotulski AJ, Papsun DM, Walton SE, Logan BK. Metonitazene in the United States-Forensic toxicology assessment of a potent new synthetic opioid using liquid chromatography mass spectrometry. Drug Test Anal. 2021 Jun 16 [Epub ahead of print]. Available from: https://doi.org/10.1002/dta.3115
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- Shover CL, Falasinnu T, Freedman RB, Humphreys K. Emerging characteristics of isotonitazene-involved overdose deaths: a case-control study. J Addict Med. 2020 Nov 23 [Epub ahead of print]. Available from: https://doi.org/10.1097/ADM.0000000000000775
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Panel discussion

Facilitated discussion

For More Information About This Presentation, Contact:

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