

Detection of Potent 'Nitazene' Synthetic Opioids in Toronto, Ontario, Canada by Toronto's Drug Checking Service

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Presented by: Kristy M. Scarfone



CENTRE ON
DRUG POLICY
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ST. MICHAEL'S
UNITY HEALTH TORONTO

Research Assistant, Centre on Drug Policy Evaluation
St. Michael's Hospital, Unity Health Toronto
+ Centre for Addiction and Mental Health



LISBON
ADDICTIONS
2022



UNIVERSITY OF TORONTO
LESLIE DAN FACULTY OF PHARMACY

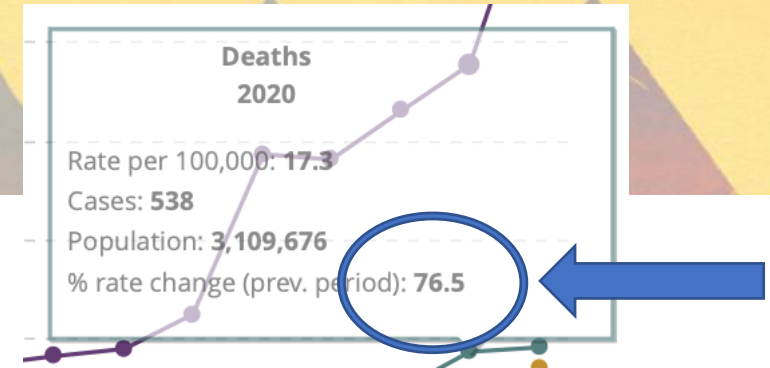
Doctor of Pharmacy Student (PharmD), University of Toronto

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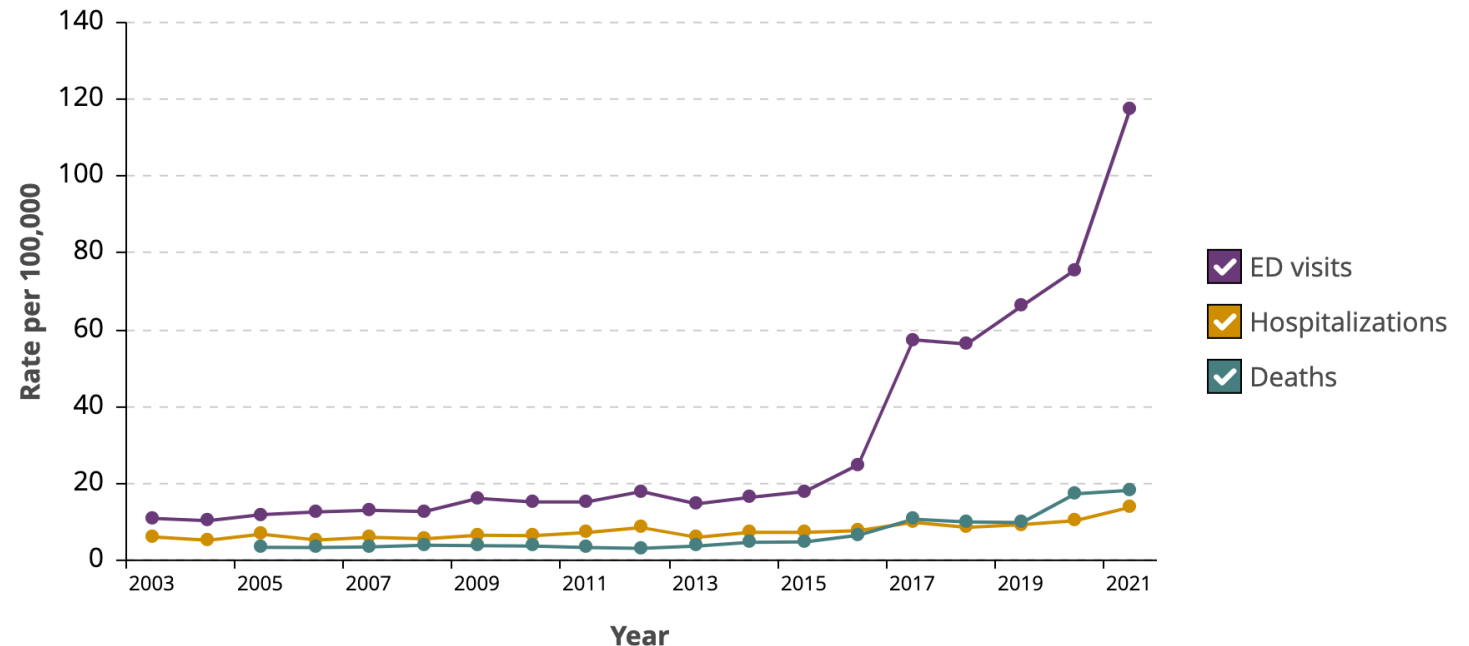
- 1 Nitazene Opioids and Canada's Overdose Epidemic
- 2 Methods (Toronto's Drug Checking Service)
- 3 Results
- 4 Key Takeaways

Canada's Overdose Epidemic

- 30,843 opioid toxicity deaths in Canada, Jan 2016-Mar 2022
- Mortality driven by drug supply toxicity, prompting innovative harm reduction solutions such as drug checking services



Rates* of opioid-related morbidity and mortality, Toronto Public Health, 2003 – 2021



Canada's Overdose Epidemic

- High-potency opioids continue to appear in the unregulated drug supply in Ontario, Canada (coinciding with the onset of the global COVID-19 pandemic)
- In response, we sought to identify and describe patterns of highly potent nitazene presentation in Toronto, Ontario, via Toronto's Drug Checking Service

Nitazene Opioids (Benzimidazole-Class Analogues)

- Have a similar or higher potency compared to other opioids (such as morphine & fentanyl)
- Cause significant respiratory depression increasing risk of accidental overdose
- Evidence around the usefulness of repeat dosing of naloxone is unknown
- Not detectable by fentanyl test strips

1961

First nitazenes scheduled as an international substance of concern, Schedule I by UNODC

Apr2019 – Mar2020

First identified in Switzerland, Belgium, Estonia, Germany, Latvia, Sweden, the UK, and USA

1950s

Synthesized

Aug2019

First identified by Alberta OCME Tox Lab

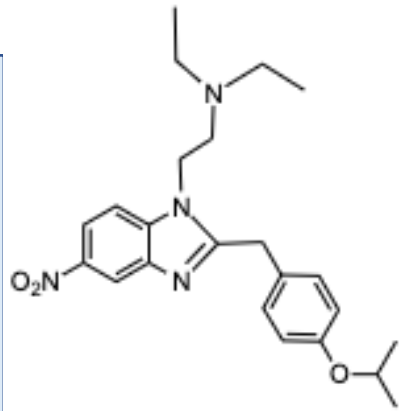
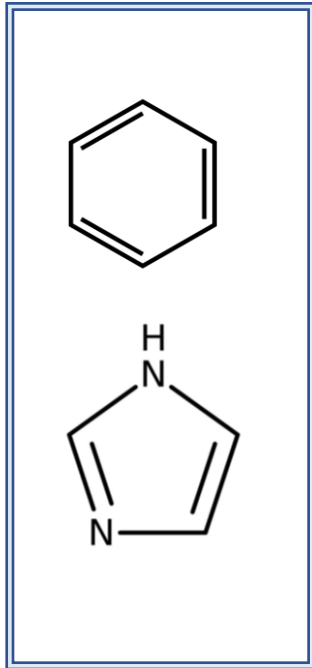
Jan2020

First identified by Health Canada's Drug Analysis Service

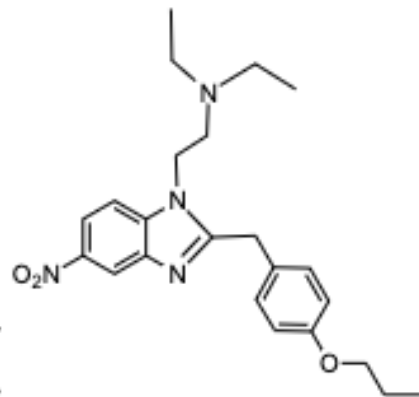
Feb2021

First identified by Toronto's Drug Checking Service

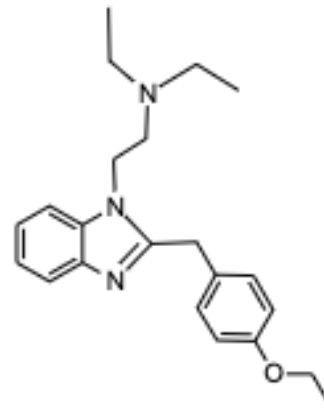
Nitazene Opioids (Benzimidazole-Class Analogues)



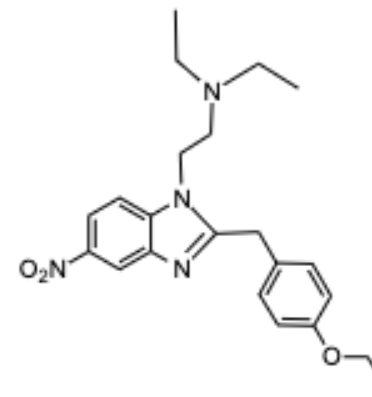
Isonitazene



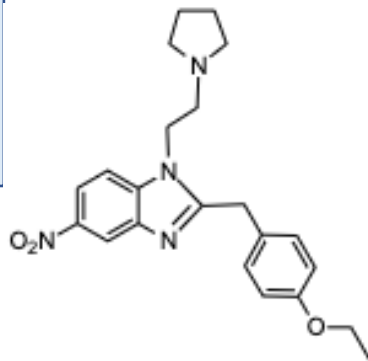
Protonitazene



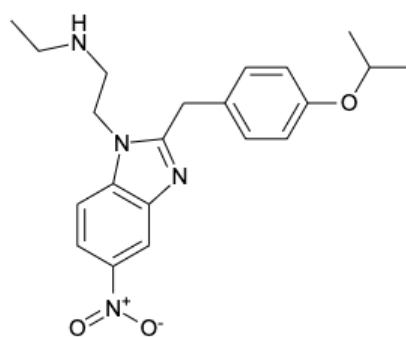
Etodesnitazene



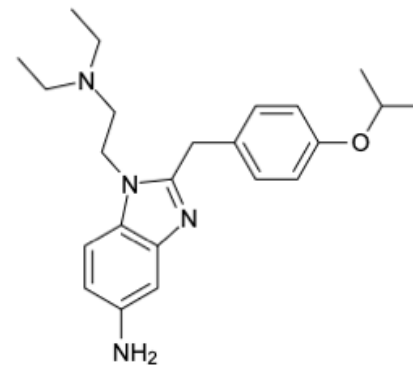
Etonitazene



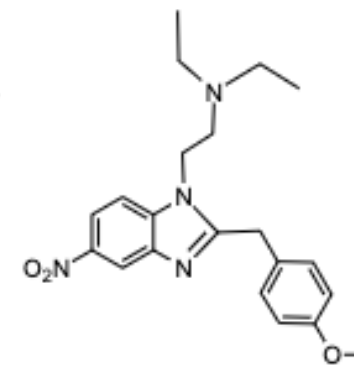
Etonitazepyne



N-desethyl isotonitazene

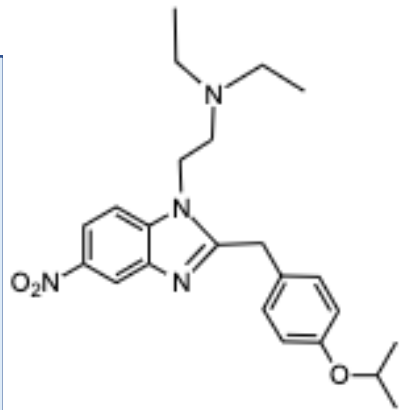
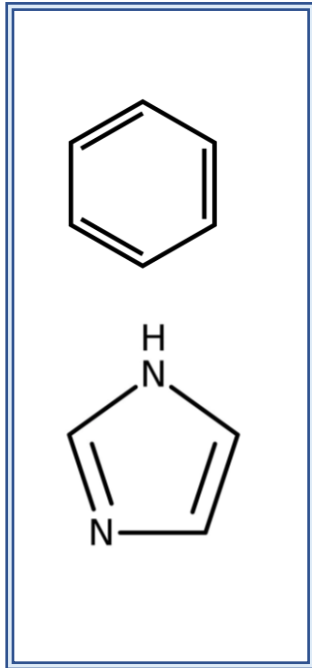


5-Aminoisonitazene

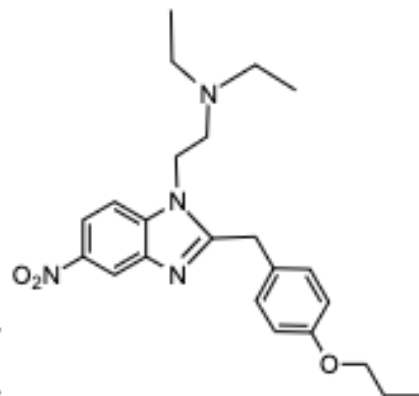


Metonitazene

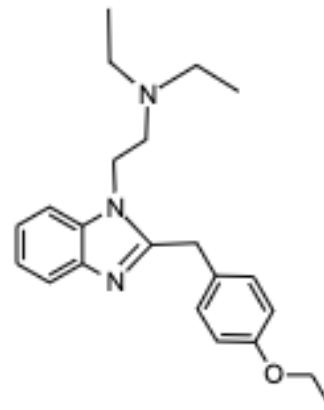
Nitazene Opioids (Benzimidazole-Class Analogues)



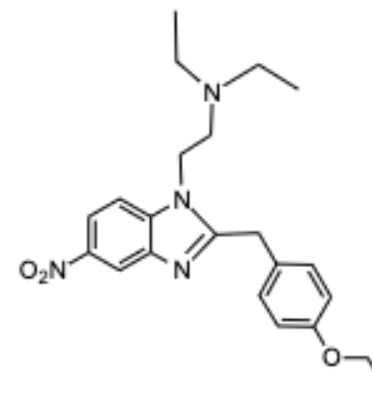
Isonitazene



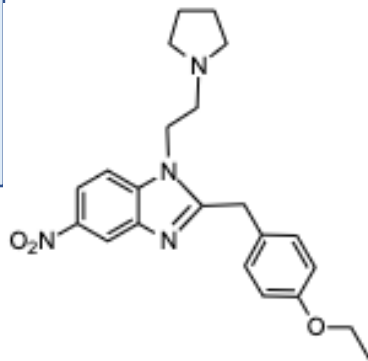
Protonitazene



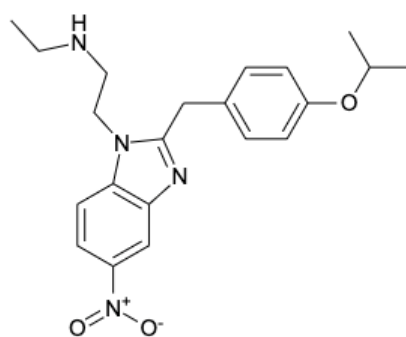
Etodesnitazene



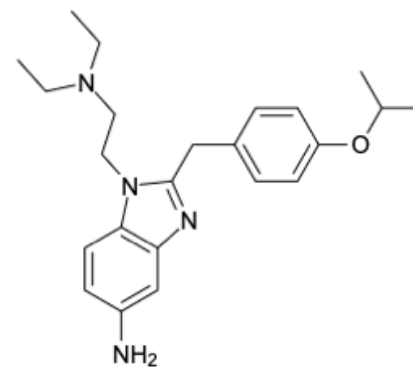
Etonitazene



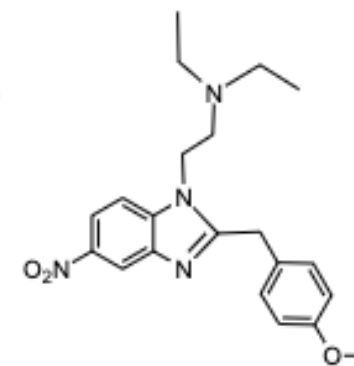
Etonitazepyne



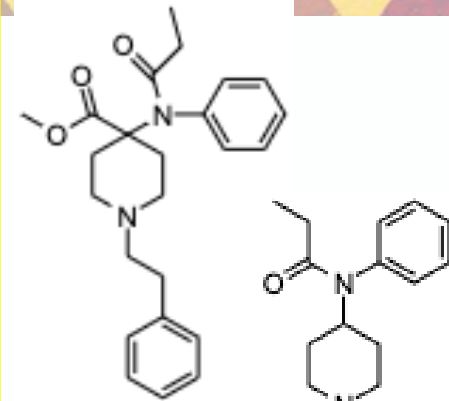
N-desethyl isotonitazene



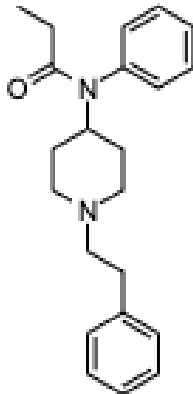
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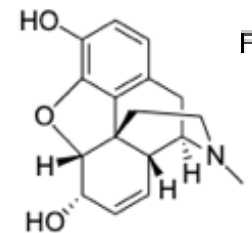
Metonitazene



Carfentanil



Fentanyl

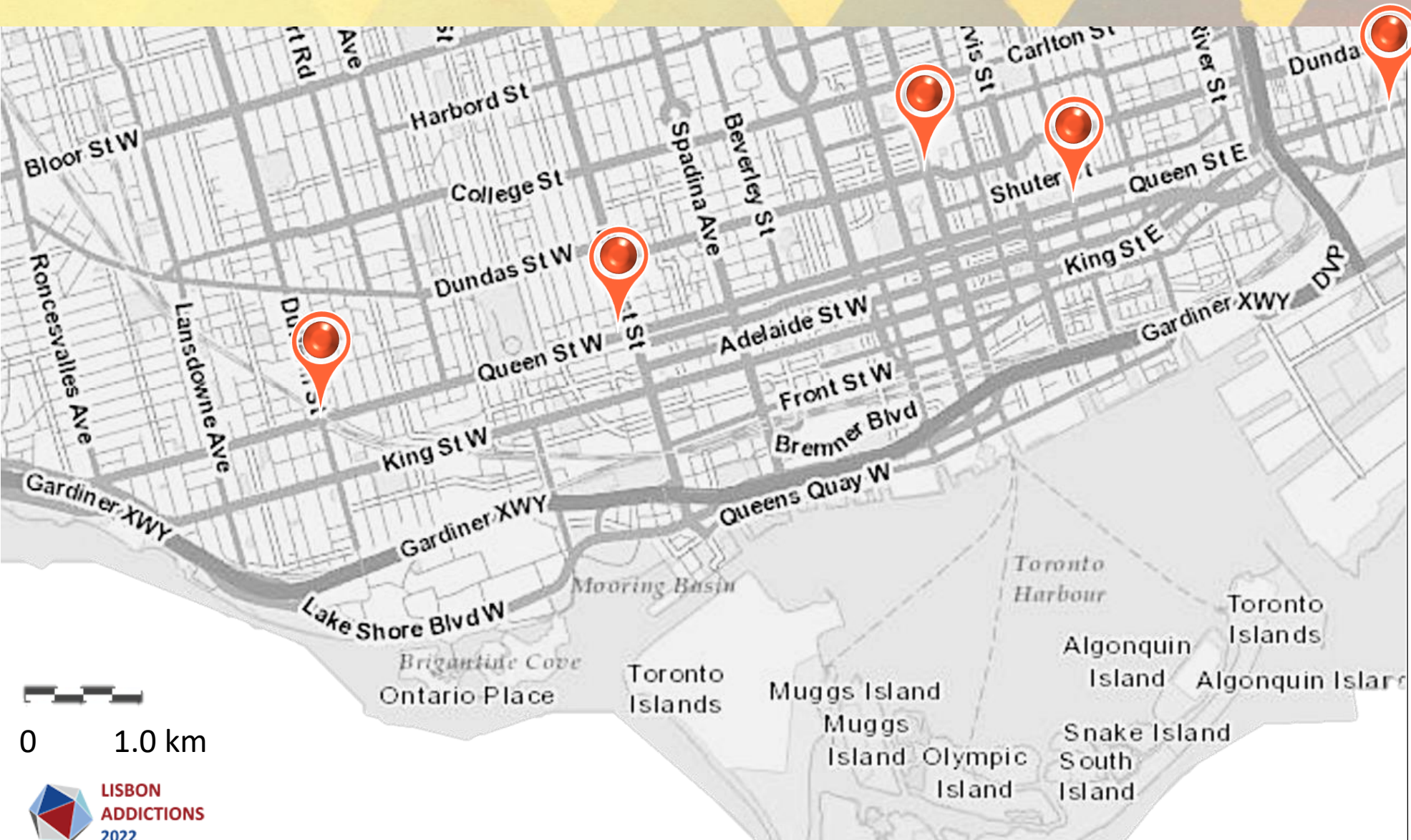


Morphine

Methods

- **Toronto's Drug Checking Service** is a public health service that aims to reduce the harms associated with substance use and, specifically, to prevent overdose by uncovering the toxicity and potency of the unregulated drug supply
- **Individual:** offers people who use drugs timely and detailed information on the contents of their drugs, helping them to make more informed decisions
- **Community:** combines results from samples checked and share drug market trends and information in a timely and public way to inform care for people who use drugs, advocacy, policy, and research

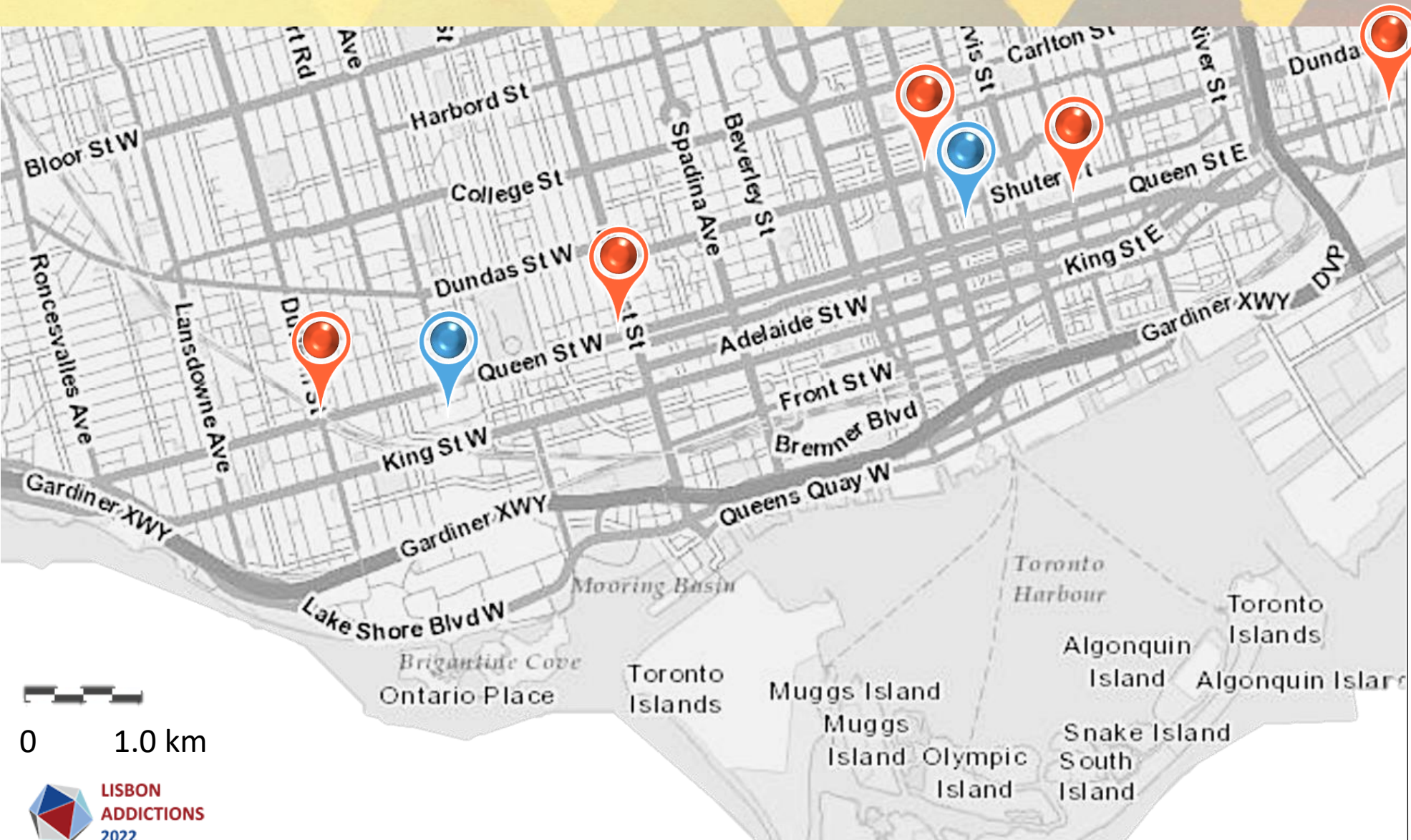
Methods



- Parkdale Queen West (Queen West)
- South Riverdale Community Health Centre
- The Works at Toronto Public Health
- Moss Park Consumption and Treatment Service
- Parkdale Queen West (Parkdale site)

Methods

2



Parkdale Queen West (Queen West)

South Riverdale Community Health Centre

The Works at Toronto Public Health

Moss Park Consumption and Treatment Service

Parkdale Queen West (Parkdale site)

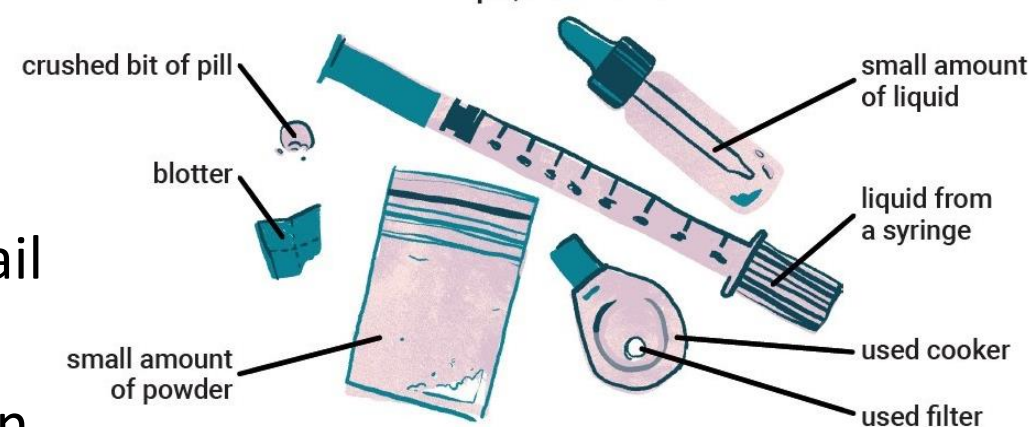
CAMH Laboratory

St. Michael's Hospital Laboratory

Methods

Study period: February 2021 – April 2022 (*expanded from abstract*)

- Mass spectrometry used to identify contents*
- Results available within 1-2 days
- Results shared in person, over the phone or by email with tailored harm reduction strategies
- Voluntary client survey collects relevant information



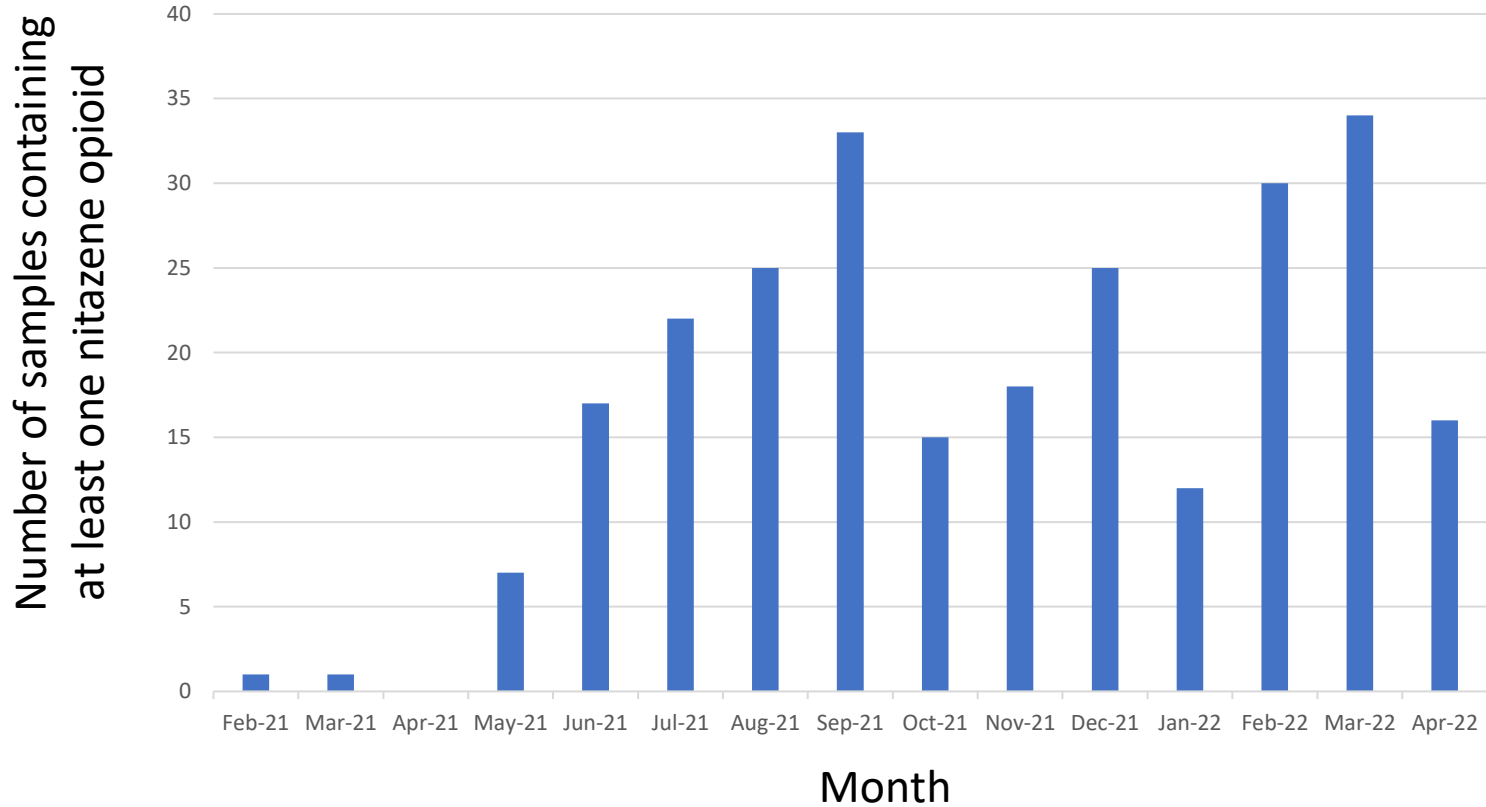
*Standard limitations of mass spectrometry apply (e.g., destruction of sample, cannot identify non-drug fillers, etc.)

Results

NITAZENE OPIOID DETECTION

Feb 2021-Apr 2022

N=256 (4.4%) of 5763



Results

- **More than one (1+) nitazene** was detected in **10.5%** (n=27)
- **23%** (n=59) of the samples were reported to have been **associated with an overdose***

*often complicated by combinations of other CNS depressants

Results

**not mutually exclusive*

NITAZENE DETECTED	N	% (of 256)
Isotonitazene/protonitazene	114	44%
Metonitazene	102	40%
Etonitazepyne	56	22%
5-amino-isotonitazene	10	3%
Etodesnitazene	9	3%
Etonitazene	3	~1%
N-desethyl isotonitazene	2	<1%

Results

**not mutually exclusive*

NON-NITAZENE COMBINATIONS	n	% (of 256)
Caffeine	210	82%
Other opioids	210	82%
Benzodiazepine-related	205	80%
Cocaine	42	16%
Phenacetin	34	13%
Methamphetamine	20	8%
Xylazine	18	7%

	Drug name	Relative potency	First identified	n ² (%)	Sample type ³	Expected drug(s)	Overdose reported
1	Isotonitazene/ Protonitazene	5x stronger than fentanyl	February 12, 2021	114 (45%)	Substance (55) Equipment (59)	Fentanyl (98) "Don't know" (6) Heroin (3) MDMA (3) ⁵ Percocet (2) Other: Down (1) Fentanyl/Heroin (1)	25
2	Metonitazene	Similar potency to fentanyl	May 31, 2021	102 (40%)	Substance (63) Equipment (39)	Fentanyl (94) "Don't know" (5) Carfentanil (2) Fentanyl/Methamphetamine (1)	15
3	Etonitazepyne	10x stronger than fentanyl	July 13, 2021	56 (22%)	Substance (34) Equipment (24)	Fentanyl (54) Cocaine (1) Other: Oxycodone (1)	22
4	5-Aminoisotonitazene	Similar potency to heroin	May 17, 2021	10 (4%)	Substance (4) Equipment (6)	Fentanyl (6) MDMA (2) "Don't know" (1) Other: Down (1)	3
5	Etodesnitazene	Similar potency to fentanyl	June 24, 2021	9 (4%)	Substance (5) Equipment (4)	Fentanyl (8) "Don't know" (1)	1
6	Etonitazene	10x stronger than fentanyl	May 5, 2021	3 (1%)	Substance (2) Equipment (1)	Fentanyl (3)	1
7	N-desethyl isotonitazene	10x stronger than fentanyl	February 3, 2022	2 (1%)	Equipment (2)	Fentanyl (2)	1

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ALL NITAZENE OPIOIDS DETECTED WERE UNEXPECTED

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Caution! Nitazene Opioids in Expected Fentanyl

n=291

Nitazene opioids found in expected fentanyl samples over ..

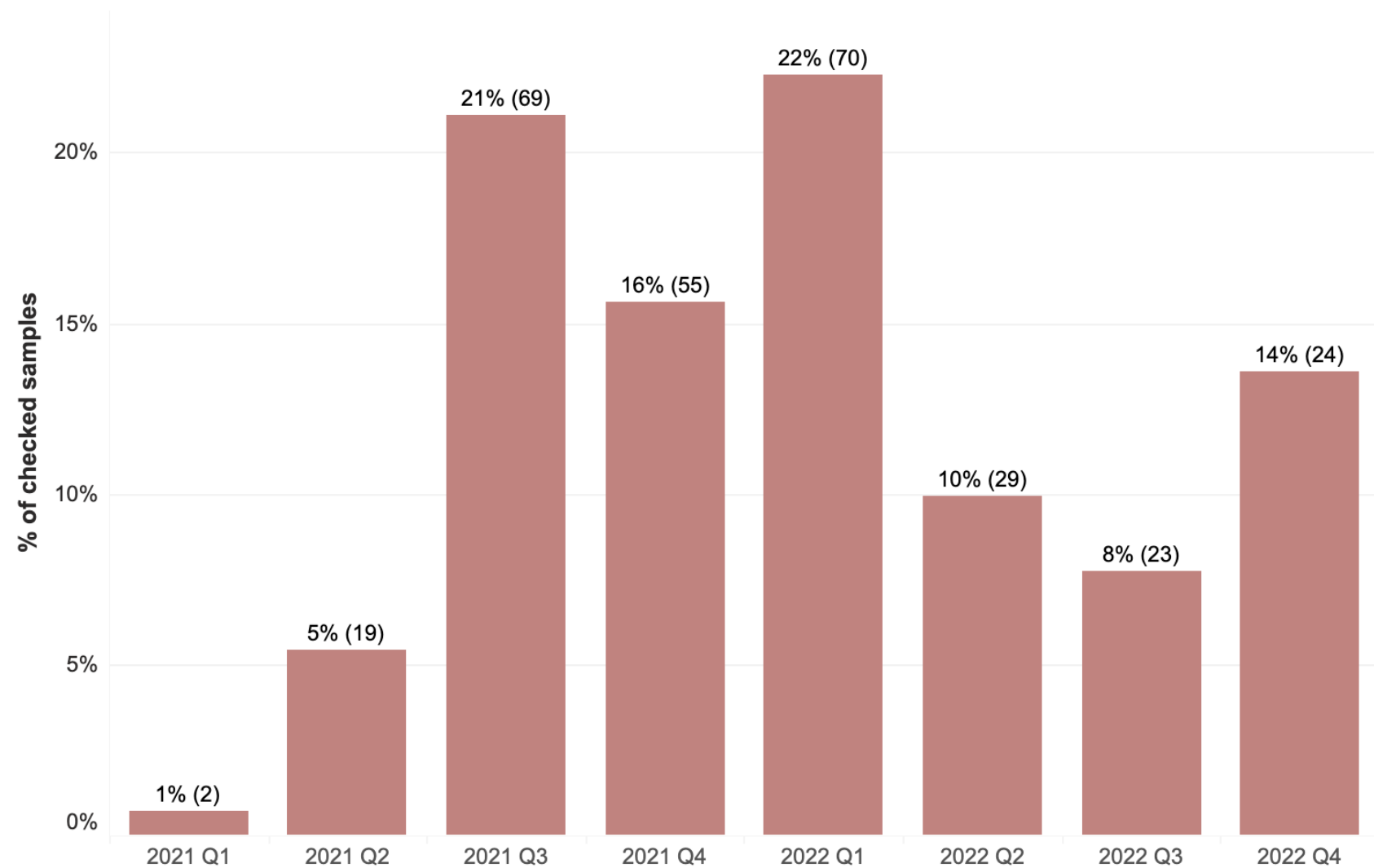
Sample Type
(All)

Expected Drug
Fentanyl

Drug Found
Nitazene opioids

Quarter
(All)

3



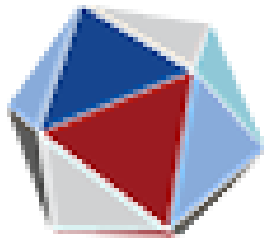
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Key Takeaways

- Canada's unregulated drug supply is increasingly toxic and continually unpredictable, making drug market surveillance important for clinical responses
- Nitazene opioids detected in Toronto since February 2021
- Nitazene opioids increase overdose risk (⬇) breathing, heart rate, blood pressure), especially when used **unexpectedly**, and **with other central nervous depressants***
- Drug checking can raise awareness of drug composition and contribute to overdose risk reduction and clinical response strategies

Thank you/Obrigada!



**LISBON
ADDICTIONS
2022**

For more information:

➤ www.cdpe.drugchecking.org

✉ info@cdpe.org

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 [@kristy_scarfone](https://twitter.com/kristy_scarfone)

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.