

Learning from the dead to protect the living:

Coroner investigations of opioid toxicity deaths in Sudbury

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Acknowledgement

We would like to acknowledge the individuals that are represented in these data and the loss experienced by families, friends and communities.

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What were the trends in the Greater Sudbury region?

How do trends in Greater Sudbury compare with the rest of province?

Number of deaths due to acute drug toxicity

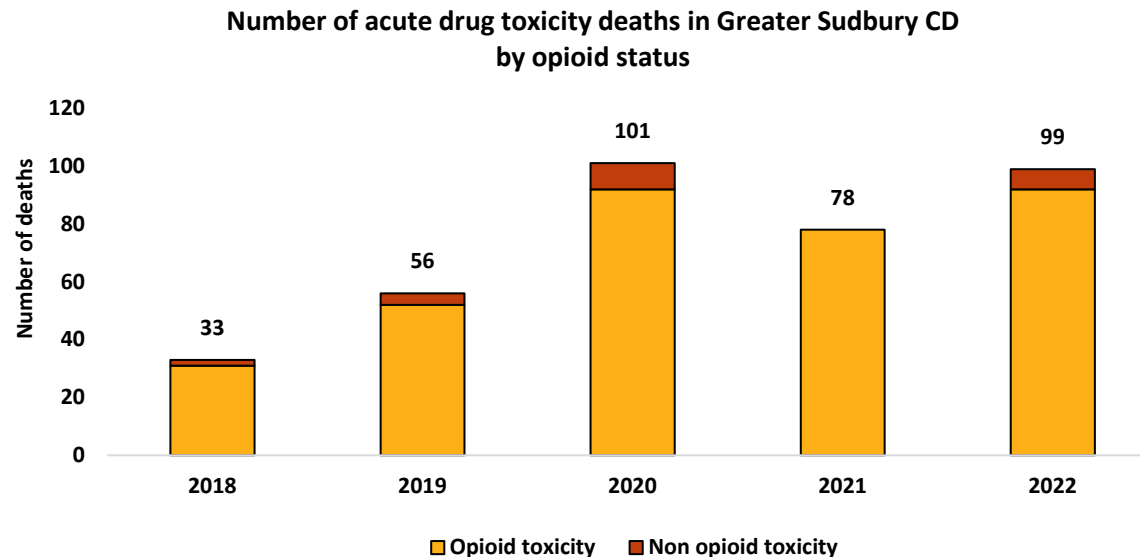
Number of drug toxicity deaths investigated in Northern Ontario and Greater Sudbury, January 2013 - December 2022

Geography	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL	Average age	Percent male
NORTHERN ONTARIO	106	96	100	103	132	176	206	361	428	384	2,092	42	66.9%
Sudbury PHU	26	18	28	22	36	36	61	111	97	116	551	41	71.0%
Greater Sudbury CD	22	16	27	22	30	33	56	101	77	99	483	42	70.6%
Manitoulin CD	1	2	1	0	4	2	2	6	9	6	33	41	69.7%
Sudbury District CD	3	0	0	0	2	1	3	4	9	8	30	42	76.7%
Unassigned	0	0	0	0	0	0	0	0	2	3	5	-	-
ONTARIO	737	781	882	1,048	1,487	1,699	1,809	2,742	3,174	2,633	16,992	42	72.8%

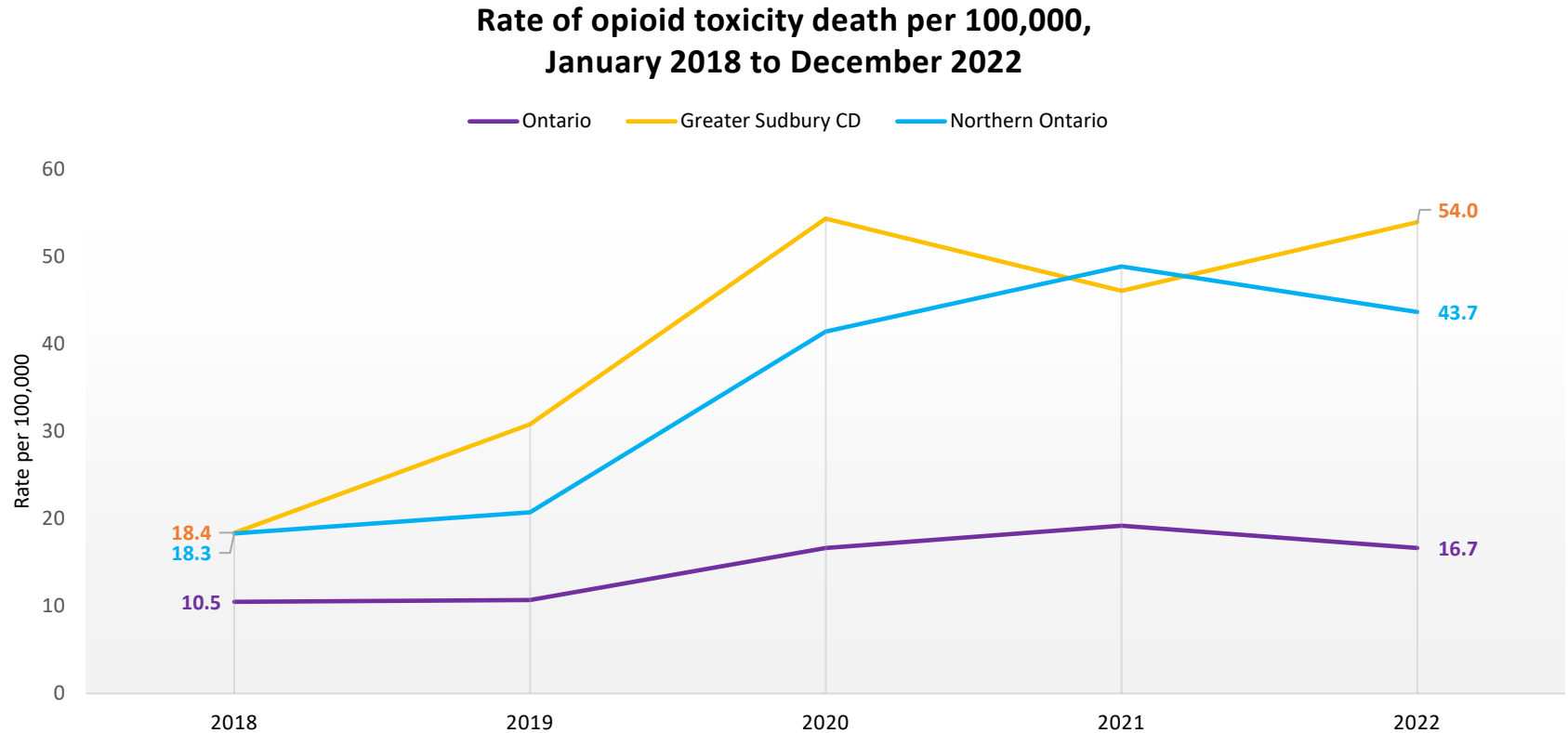
Between 2013 and 2022, there were 483 deaths in Greater Sudbury that were due to acute drug toxicity (not restricted to opioids); the average age among those who died was 42, and 71% were male.

Acute opioid toxicity

- Beginning in 2017, the Office of the Chief Coroner (OCC) began collecting supplementary information about opioid toxicity deaths, such as the circumstances surrounding the death and treatment history.
- In 2022 a new coroner case management system was implemented that collected this additional information for all deaths, not only opioid toxicity deaths.
- In Greater Sudbury, 94% of all acute drug toxicity deaths involved opioids.



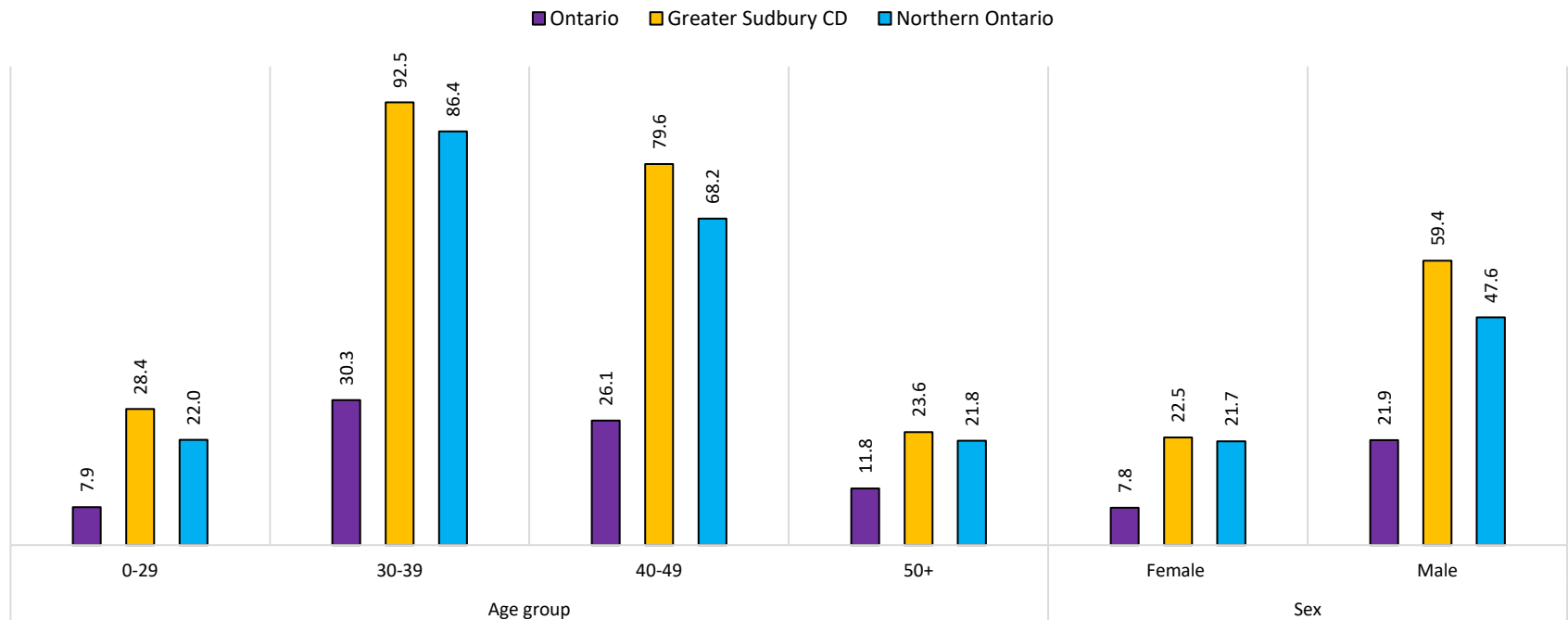
Opioid toxicity deaths over time



Since 2018, the rate of opioid toxicity death in Ontario increased by almost 60%, from 10.5 to 16.7 per 100,000 and the rate in Northern Ontario increased by 139%. Over the same time period, the rate in Greater Sudbury increased by 193%, from 18.4 to 54.0 per 100,000.

Demographic factors

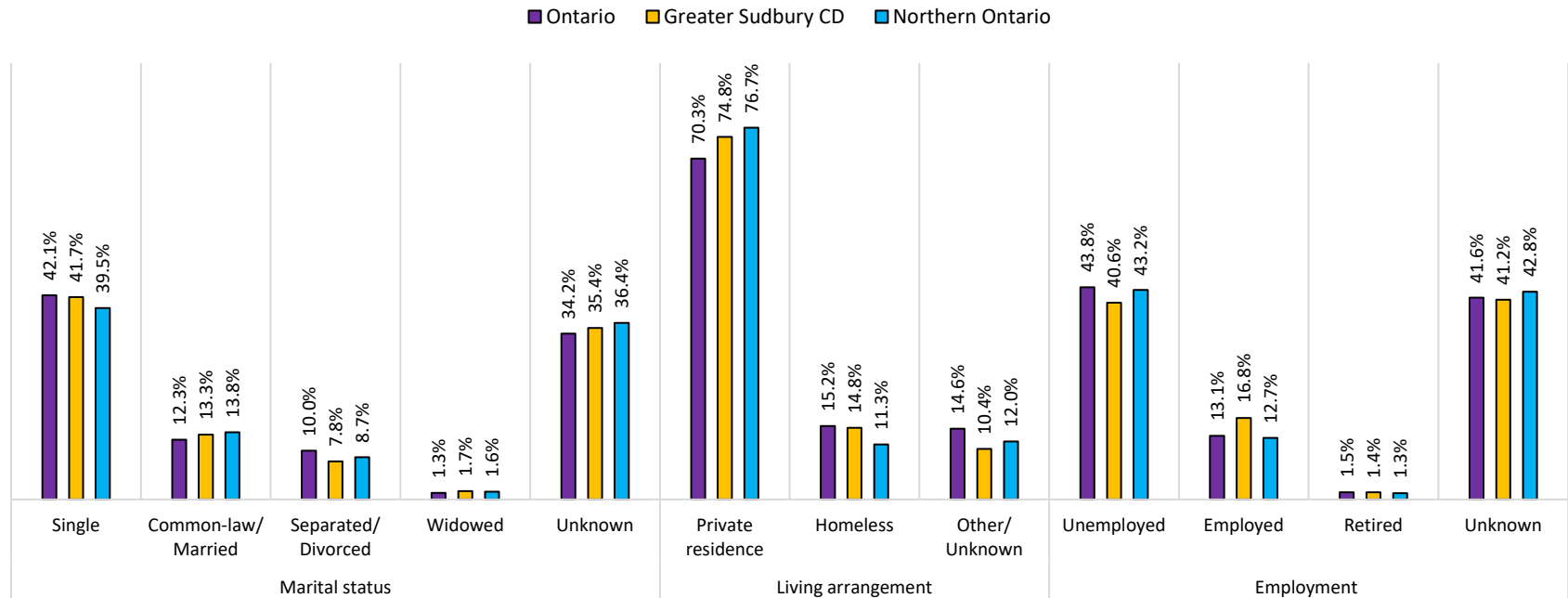
Average rate of opioid toxicity death per 100,000 by age and sex,
January 2018 to December 2022



Across all age and sex categories, the average rate per 100,000 of opioid toxicity death was consistently higher in Greater Sudbury than in Ontario. Particularly for those under the age of 30, the rate in Greater Sudbury was 3.6 times higher than the Ontario average.

Other sociodemographic factors

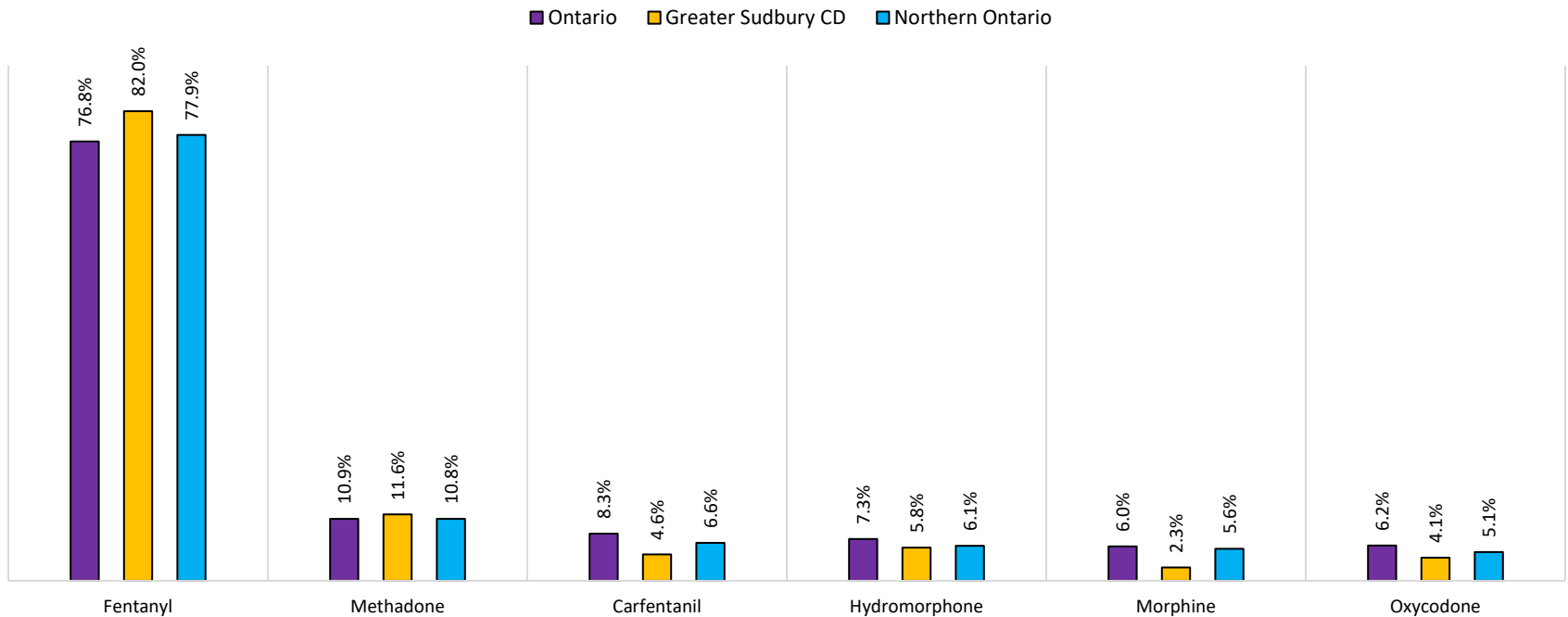
**Sociodemographic factors for opioid toxicity deaths,
January 2018 to December 2022**



Although there are a large number of cases where these characteristics are unknown, of those who died from opioid toxicity in Greater Sudbury: 42% were single, 15% were homeless, and 41% were unemployed. All of these sociodemographic characteristics were similar to findings seen across Ontario.

Opioid drugs involved in deaths

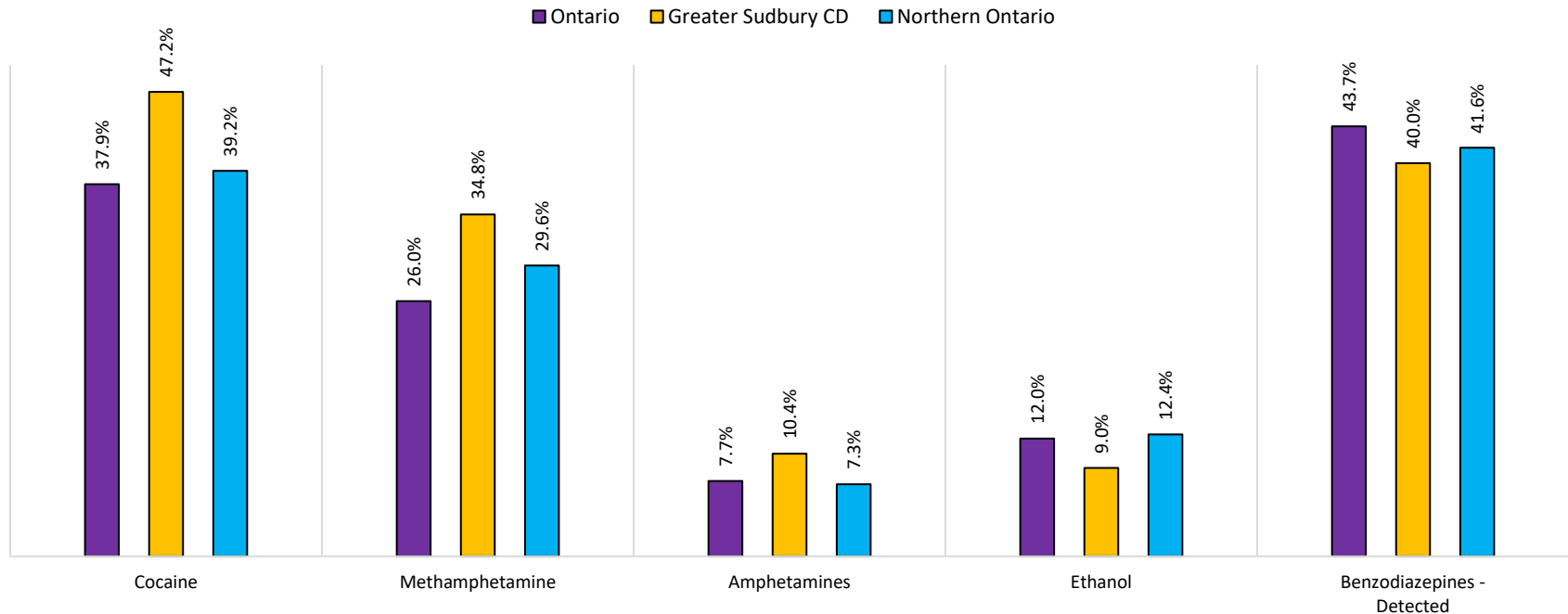
Percent of opioid toxicity deaths by contributing opioids,
January 2018 to December 2022



Fentanyl remains the highest contributor to opioid toxicity death across the province, and Greater Sudbury showed a slightly higher proportion of deaths involving fentanyl (82%) than the Ontario average (77%). Greater Sudbury had fewer deaths involving Carfentanil, hydromorphone, morphine, or oxycodone.

Non-opioid drugs involved in deaths

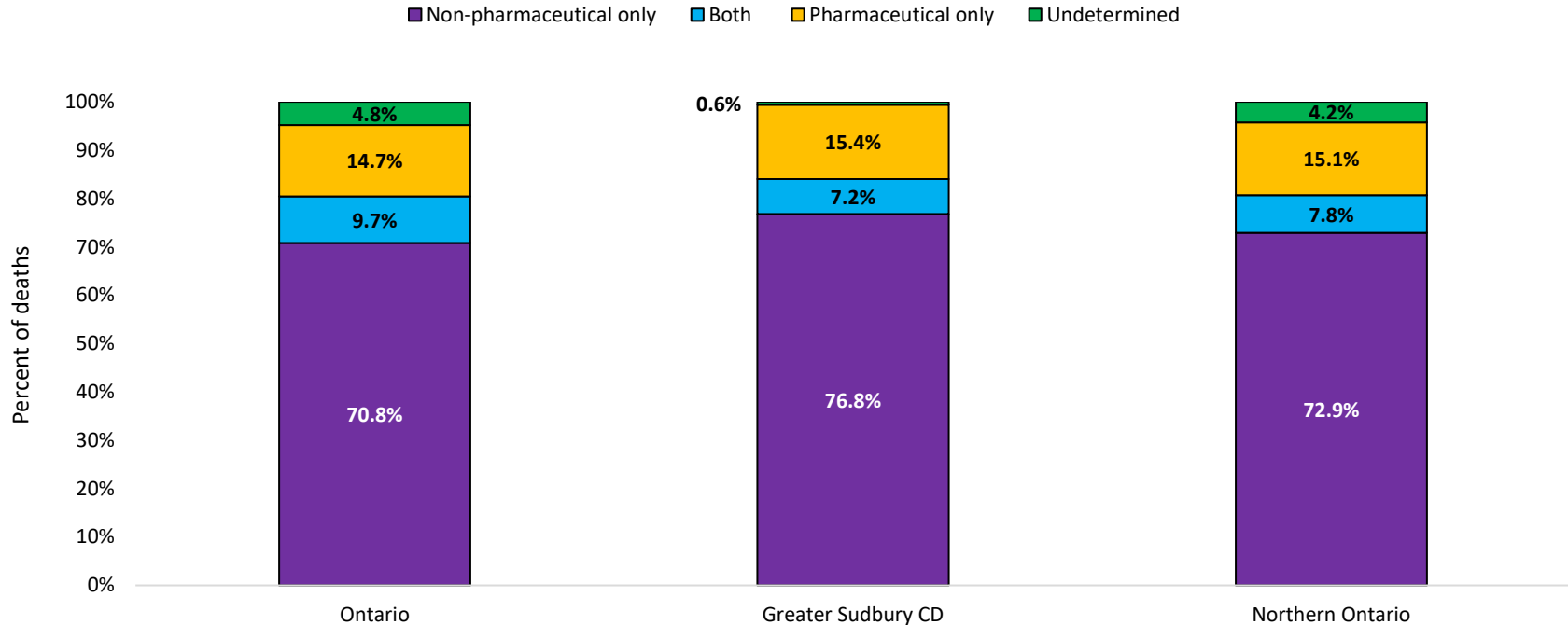
Percent of opioid toxicity deaths by contributing non-opioids,
January 2018 to December 2022



Nearly half of opioid toxicity deaths in Greater Sudbury involved cocaine, and 1 in 3 deaths involved methamphetamines; both of which were higher than the Ontario averages. These findings – while not based on all possible combinations of drugs – suggest polysubstance use is contributing to more deaths in Greater Sudbury.

Origin of opioids involved in opioid toxicity deaths

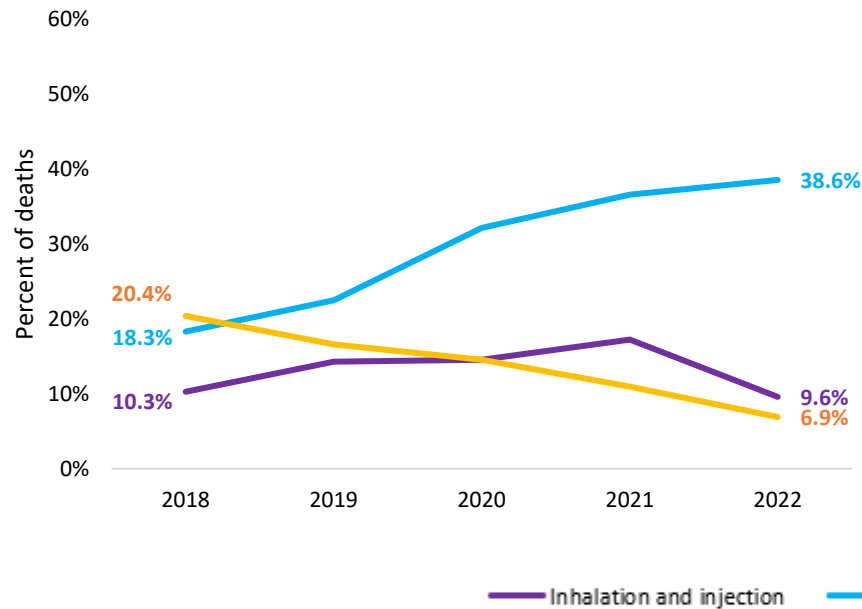
Percent of deaths by origin* of opioids,
January 2018 to December 2022



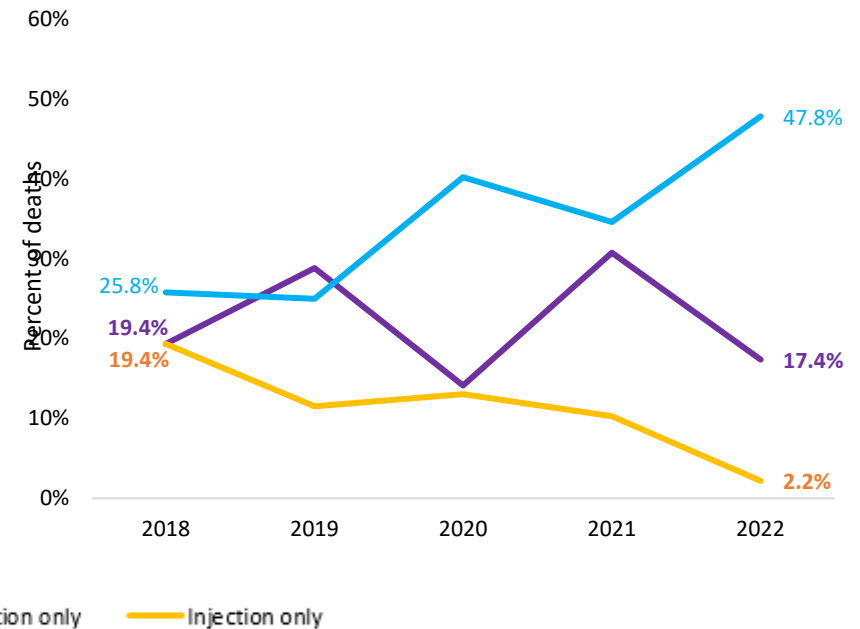
Compared to Ontario, Greater Sudbury showed a slightly higher proportion of opioid toxicity deaths that involved only substances that were non-pharmaceutical in origin – this is likely related to the higher proportion of deaths involving cocaine, methamphetamine, and amphetamines.

Presumed mode of use of substances

Presumed mode of substance use in Ontario, over time



Presumed mode of substance use in Greater Sudbury, over time

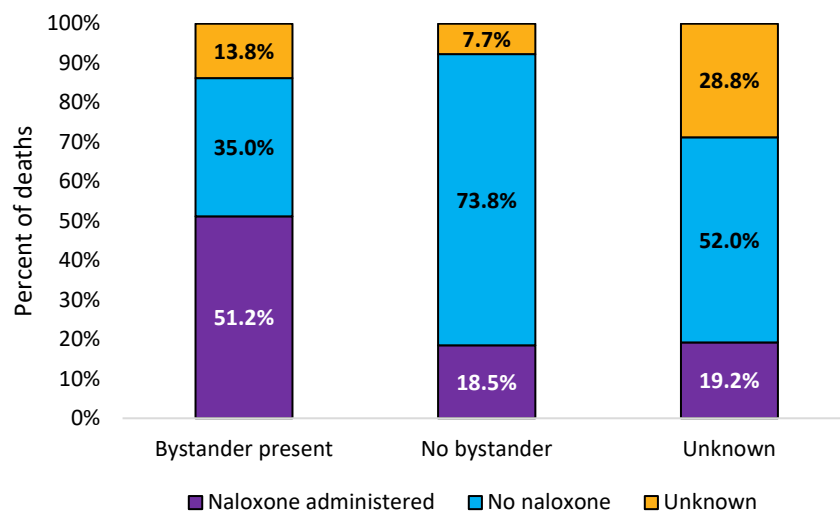


Although information about mode of substance use is unknown in many cases, for deaths where the information is available there has been a change in the rates over time. Across Ontario, the proportion of deaths with evidence of inhalation is on the rise; with nearly 50% of deaths in Greater Sudbury showing signs of inhalation only.

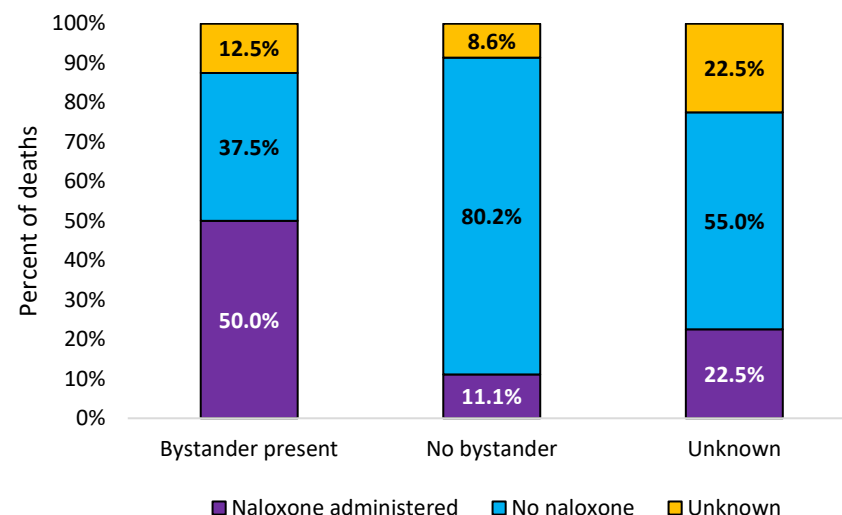
Bystanders and naloxone administration

Region	Bystander present	No bystander	Unknown
Ontario	18.0%	48.7%	33.2%
Greater Sudbury	21.1%	47.4%	31.6%

Naloxone administration and the presence of bystanders in Ontario, January 2018 to December 2022



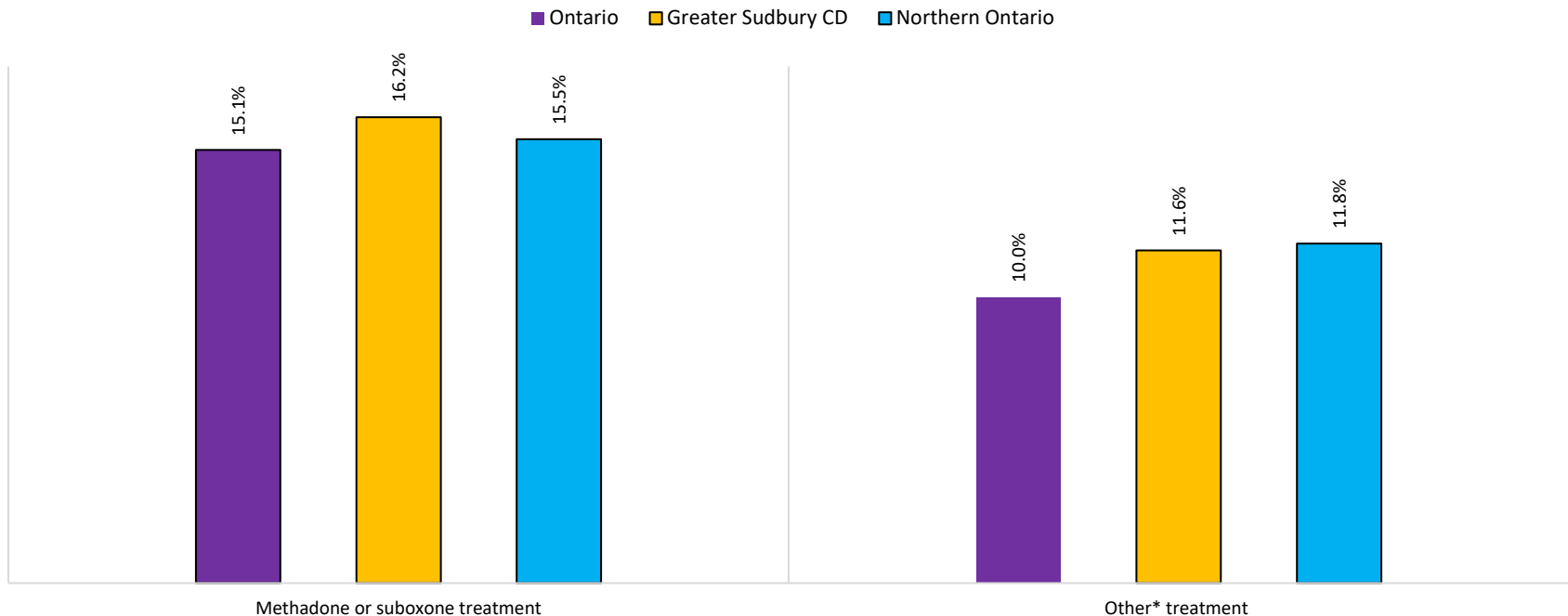
Naloxone administration and the presence of bystanders in Greater Sudbury, January 2018 to December 2022



Although the presence of a bystander is unknown in 1/3 of opioid toxicity deaths, the individual was known to be alone at the time of the overdose nearly 50% of the time. The importance of having another person present is apparent by the fact that the administration of naloxone was between 3 and 4 times more frequent when there was a bystander present.

History of treatment for substance use

Percent of opioid toxicity deaths by history of treatment received,
January 2018 to December 2022



Approximately 16% of individuals who died from acute opioid toxicity in Greater Sudbury were known to have received either methadone or suboxone, and 12% received another form of treatment (inpatient, detox, or harm reduction). Both percentages were similar to Ontario averages.

Key findings on opioid toxicity deaths in Greater Sudbury

- Since 2013, there have been **483 deaths due to acute drug toxicity** in Greater Sudbury, with annual counts increasing from **22 in 2013** to **99 in 2022**.
- Rates of opioid toxicity death in Greater Sudbury **increased by 193%** since 2018, more than 3 times the increase in Ontario (60%) and 38% higher than Northern Ontario (138%). In 2022, while rates declined in Ontario and Northern Ontario, Greater Sudbury has seen a **further increase**.
- **Fentanyl was involved in 82%** of deaths in Greater Sudbury, slightly higher than the Ontario average (77%). As well, in Greater Sudbury, **47% of deaths also involved cocaine** (38% in Ontario) and **35% involved methamphetamines** (26% in Ontario).
- The proportion of deaths with only signs of inhalation increased by **85%** from **26% to 48%** in Greater Sudbury, while the proportion in Ontario increased 116%, from 18% to 39%.
- Naloxone was administered in **half of deaths when there was a bystander present** and only 11% of deaths when there was no bystander.
- There was a history of **methadone or suboxone treatment in 16% of deaths** in Greater Sudbury, similar to the 15% seen across for Ontario.

Learning from the dead to protect the living:

What the data doesn't tell us

- While we can learn a great deal from the data about opioid toxicity deaths, **substance related harm and death is a complex, multi-factorial issue with no simple solutions.**
- **Communities and their partners across Ontario need to work together** to address why Greater Sudbury – and Northern Ontario as a whole – is seeing higher rates of opioid toxicity deaths.
- Many additional questions remain to be further explored, such as:
 - Is there differential access to health care services including mental health supports in Greater Sudbury/Northern Ontario?
 - Are there differences in rates of substance use? Reasons for increased polysubstance use?
 - What other sociodemographic differences might exist: history of trauma, racial and ethnic backgrounds, effects of colonialization, immigration status, education, financial challenges, etc.

Appendices

What deaths do coroners investigate?

- In Ontario, coroners investigate deaths that meet the criteria outlined in section 10 of the Coroners Act
 1. All deaths presumed to be non-natural (sudden and unexpected)
 2. Deaths in specific circumstances (e.g., in correctional facilities)
 3. Natural deaths with specific issues of concern (e.g., malpractice, neglect, abuse)

Coroners investigate approximately 20% of all deaths in Ontario

- The investigation must answer 5 questions about the death:
 1. Who (identity of deceased)
 2. When (time of death)
 3. Where (location of death)
 4. How (medical cause of death)
 5. By what means (*Accident, Homicide, Natural, Suicide, Undetermined*)
- Information for the investigation may be obtained from several sources including family, co-workers, doctors, hospital records, police, and others.

Are all deaths related to substance use investigated by a coroner?

- Some deaths related to substance use may not be investigated by a coroner, such as deaths related to **chronic substance use** that may be considered “**natural**”.

Infections from
injecting substances

Heart problems
accelerated by
stimulant use

Diabetes-related
complications
impacted by
substance use

Liver disease from
chronic alcohol use

- Coroners also investigate **non-natural deaths** where substances were detected, but drugs did not directly cause death.

Car accidents or other traumatic
events where substances were
involved, but the cause of death was
not *directly* the drug toxicity

Assigning cases to geographies

- Deaths assigned to Greater Sudbury census division (CD) – and all other geographies – were determined as follows:
 1. Individuals with a residence in Greater Sudbury CD
 2. When residence is unknown, location of the incident leading to death was used
- Cases where an incident was in Greater Sudbury CD – but the individual resided outside of the CD – were counted towards that location of residence
- Based on all drug toxicity deaths* that were investigated by a coroner between 2013 and 2022, there have been:
 - **483** deaths where the individual resided in Greater Sudbury
 - **474 (98%) also had an incident leading to death in Greater Sudbury**
 - **Location of other incidents were mostly in Algoma, Porcupine, and Toronto PHUs**
 - **11** deaths where the incident leading to death was in Greater Sudbury, but the residence was in another region were counted towards the other region

Northern Ontario

- For comparison purposes, “Northern Ontario” has been defined as residents of the following public health units:
 - Algoma
 - North Bay Parry Sound
 - Northwestern
 - Porcupine
 - Sudbury
 - Thunder Bay
 - Timiskaming

Thank you

***For further information, please contact
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