The Drug Toxicity Crisis

An environmental scan to inform the *Greater Sudbury Summit on Toxic Drugs*

Public Health Sudbury & Districts
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Authors

Michael King, Public Health Sudbury & Districts
Chanelle Larocque, Public Health Sudbury & Districts
John Macdonald, Public Health Sudbury & Districts
Darshaka Malaviarachchi, Public Health Sudbury & Districts
Nastassia McNair, Public Health Sudbury & Districts
Sherry Price, Public Health Sudbury & Districts
Jacqueline Edwards, Public Health Sudbury & Districts

Contributors

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Contact for More Information

Knowledge and Strategic Services
Public Health Sudbury & Districts
1300 Paris Street
Sudbury, ON P3E 3A3
Telephone: 705.522.9200, ext. 350
Email: resourcecentre@phsd.ca

This report is available online at www.phsd.ca.

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Introduction

Since 2016, Canadians have been confronted with an increasingly unpredictable and toxic drug supply, resulting in 38 514 apparent opioid toxicity deaths between January 2016 and March 2023 (Government of Canada, 2023a). During this same time period, there were a total of 37 697 opioid-related and 16 231 stimulant-related poisoning hospitalizations in Canada (excluding Quebec) (Government of Canada, 2023a). This complex whole-of-society challenge continues to result in preventable deaths, injuries, an unprecedented demand on emergency services, and increased utilization of health services.

Ontario has lost a large number of its citizens to drug toxicity and drug-related harms, with more than 2 800 Ontarians dying from opioid-related causes in 2021 alone (Public Health Ontario, 2023a). Northern Ontario has been disproportionately impacted: from 2020 to 2022, per capita its opioid toxicity death rate was 2.6 times that of the province, while the rate in Greater Sudbury was 3.0 times the provincial rate (Public Health Sudbury & Districts, 2023; Office of the Chief Coroner, 2023).

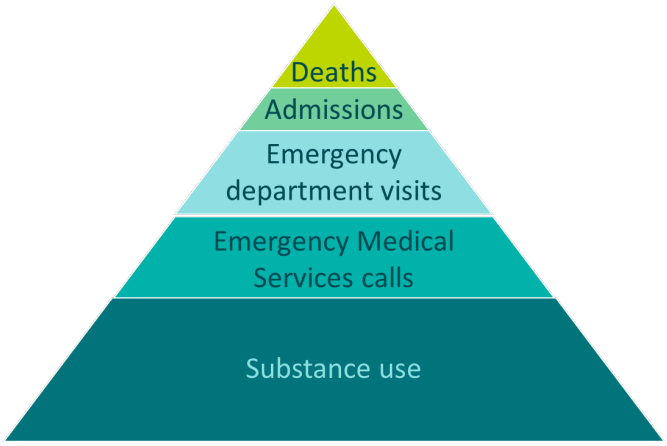
In response to this evolving issue, various approaches to address the drug toxicity crisis have been enacted throughout Sudbury and districts. Since 2015, partners in Greater Sudbury have collaborated on the multi-sector Community Drug Strategy. The Community Drug Strategy for the City of Greater Sudbury is built upon, and represents community leaders from, the following four guiding foundational pillars: health promotion, harm reduction, treatment, and enforcement and justice. There are also numerous community drug strategies in Sudbury and districts, including Manitoulin Island, Lacloche, Sudbury East and multiple First Nation communities. Additionally, on August 28, 2022, Greater Sudbury's first supervised consumption site (SCS), Minoogawbi/La Place/The Spot (The Spot) opened, providing a safe, empathetic, stigma-free environment for people who use drugs. Despite collaboration and varied approaches, the drug toxicity crisis continues to result in the tragic loss of lives.

To address the local escalating drug toxicity crisis, the Executive Committee of the Community Drug Strategy (CDS) for the City of Greater Sudbury endorsed the recommendation from the CDS Steering Committee to hold a local leadership summit before the end of 2023 (Public Health Sudbury & Districts, 2023a). In June 2023, the Greater Sudbury City Council, the Greater Sudbury Police Services Board, and the Board of Health for Public Health Sudbury & Districts passed motions to endorse the recommendation from the CDS Executive Committee to hold a local leadership summit (City of Greater Sudbury, 2023a; Greater Sudbury Police Service Board, 2023; Public Health Sudbury & Districts, 2023a). Further, the Board of Health for Public Health

Sudbury & Districts unanimously approved the motion directing the Medical Officer of Health to *ensure Public Health engagement in organizing a local leadership summit on the escalating drug toxicity crisis* (Public Health Sudbury & Districts, 2023a).

This *Environmental Scan* examines the available data on local drug use and toxicity in Sudbury and districts; literature on demographic, societal, and systemic factors that contribute to drug use and toxicity; emerging evidence on best practices to prevent and reduce harms; and existing local community services and supports. This environmental scan is one tool to help inform conversation among local leaders, people with living and lived experience, and other participants of the planned drug toxicity summit. While reviewing this report, it is equally important to acknowledge that data and evidence in this topic area are still emerging and that grey literature and perspectives from people with living and lived experiences are a timely and essential component to further guide conversation and understanding of the current context.

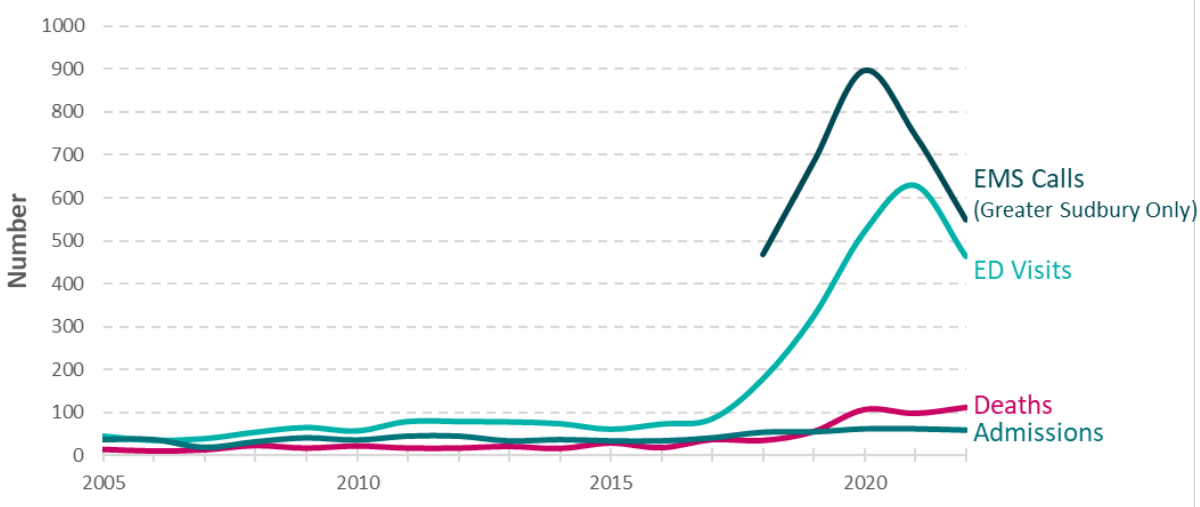
Drug use and toxicity in Sudbury and districts



The local burden of drug use, toxicity, and the ill-health arising from it can be measured using several different indicators. Public Health Sudbury & Districts (hereinafter known as Public Health) and our partners have access to data on suspected drug-related deaths, hospital admissions, emergency department visits, emergency medical services (EMS) calls for suspected poisonings due to drug toxicity and overdose, supervised consumption services, and self-reported health survey data on substance use. Each of these data sources has some advantages but also some limitations (see *Data gaps and limitations* on page 31, below).

Data from most sources confirm that there has been a large increase in the local burden of ill health due to drug use and toxicity since 2017 (see Figure 1).

Figure 1. Annual opioid-related emergency medical services (EMS) calls, emergency department (ED) visits, hospital admissions and deaths, Sudbury, and districts, 2005–2022



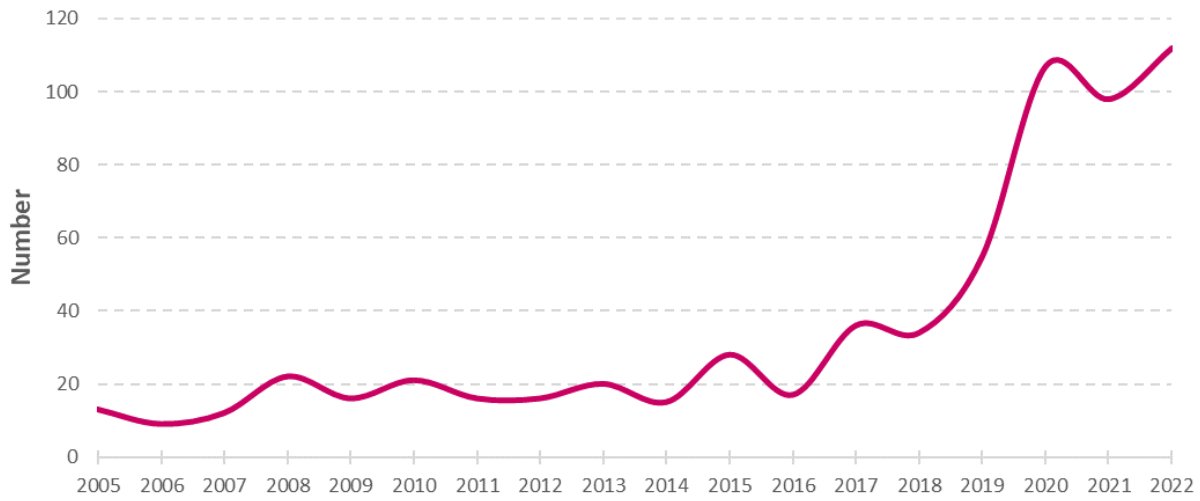
Data source: Ontario Agency for Health Protection and Promotion (2023a) and City of Greater Sudbury Emergency Medical Services (2023)

For brevity, this report will focus on information gleaned from two sources: data on confirmed opioid-related mortality provided by the Office of the Chief Coroner and data on calls attended by the City of Greater Sudbury Emergency Medical Services (EMS) for suspected poisoning due to opioids.

Data on mortality caused by drug toxicity

These results include deaths for which a coroner investigation has confirmed a direct cause of death as being acute intoxication or toxicity due to an opioid, excluding deaths from chronic substance use, medical assistance in dying, injury and homicide. Counts in recent years should be considered preliminary and are subject to change.

Figure 2. Number of confirmed opioid-related deaths by year, Sudbury and districts, 2005–2022

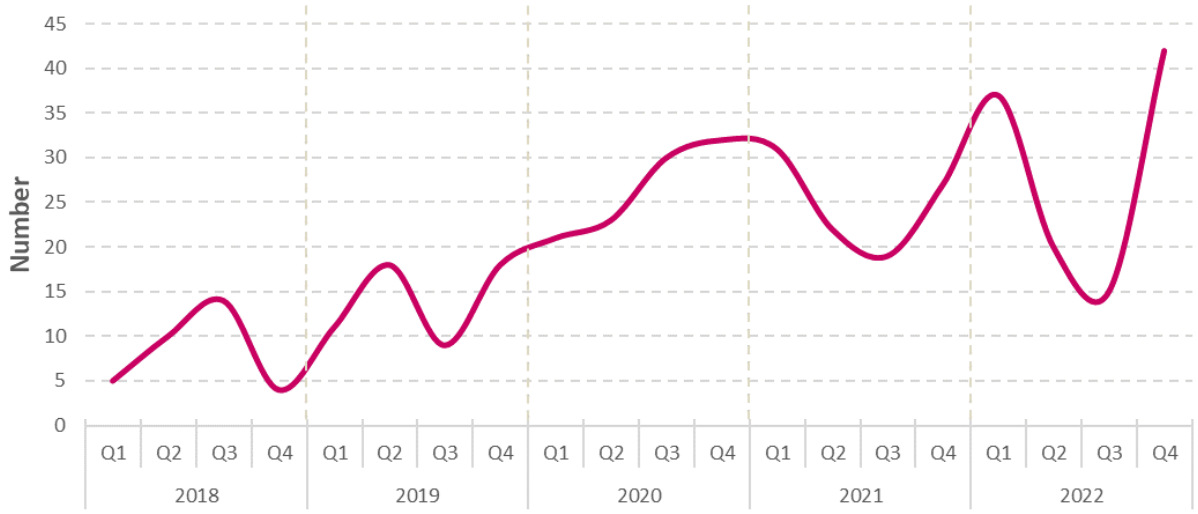


Data source: Ontario Agency for Health Protection and Promotion (2023a) and Office of the Chief Coroner of Ontario (2023)

Interpretation:

- The number of opioid-related deaths has increased dramatically in recent years, from 17 deaths in 2016 to 112 deaths in 2022. This represents an increase of 559% over 6 years.

Figure 3. Number of opioid-related deaths by annual quarter, Sudbury and districts, 2016–2022

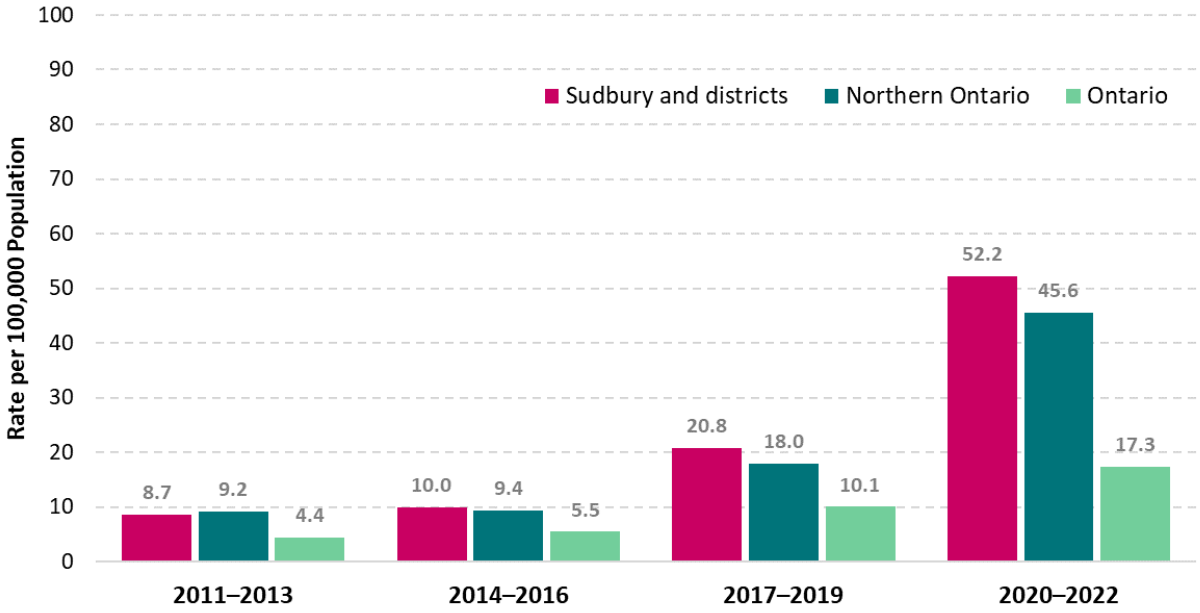


Data source: Ontario Agency for Health Protection and Promotion (2023a) and Office of the Chief Coroner of Ontario (2023)

Interpretation:

- In recent years (2020–2022), the number of opioid-related deaths has been highest in the first quarter (i.e. January–March) and last quarter (i.e., October –December) of the year. This is a significant change from previous years when counts were generally higher in the middle of the year.

Figure 4. Average annual crude rate of accidental opioid-related deaths by 3-year period, Sudbury and districts, Northern Ontario and Ontario, 2011–2022

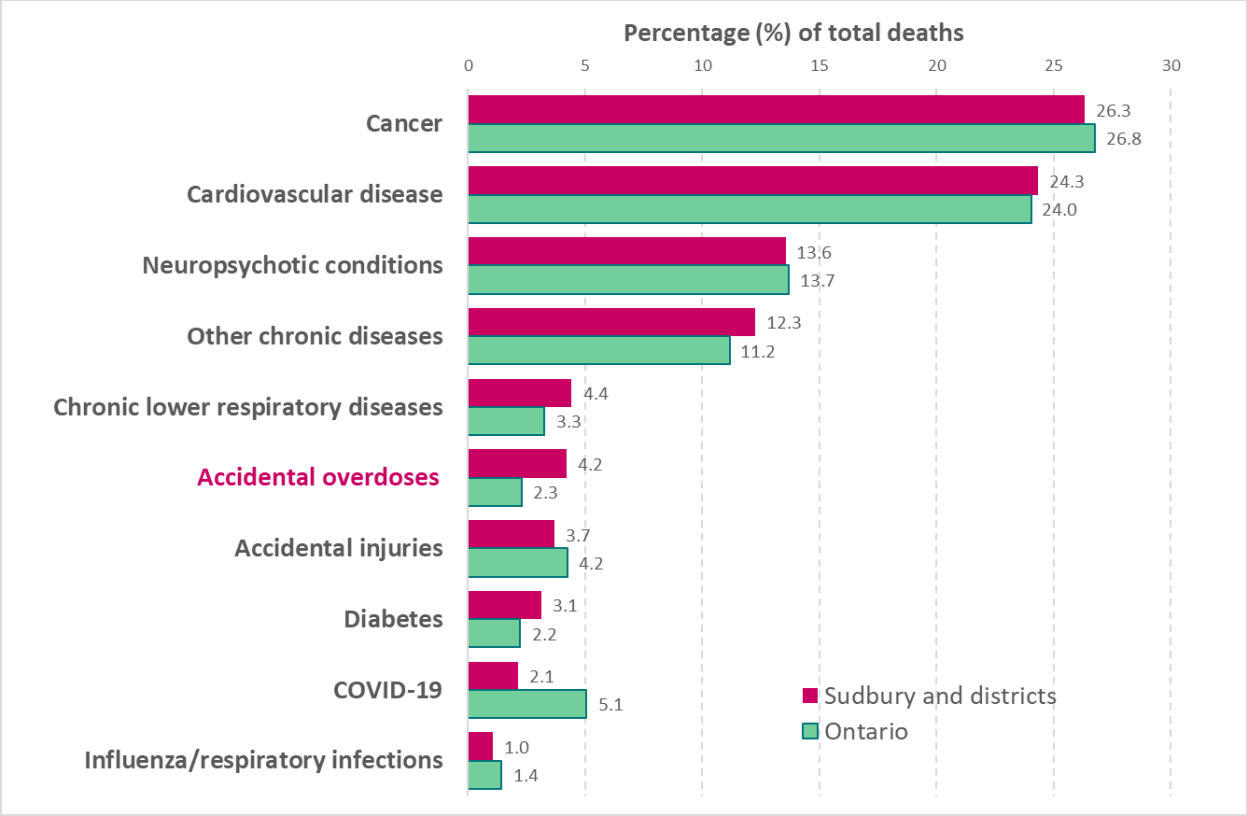


Data sources: Ontario Agency for Health Protection and Promotion (2023a) and Office of the Chief Coroner of Ontario (2023)

Interpretation:

- The recent increase in opioid-related mortality rates has been seen across Ontario, but has disproportionately affected Northern Ontario. In the 2020–2022 time period, the rates in Sudbury and districts and Northern Ontario were both around five times as high as they were in the 2014–2016 time period, while the rate in Ontario overall was about three times as high.
- As a result, opioid-related rates in Northern Ontario, including Greater Sudbury, are by far the highest of any region in the province—i.e. 3.0 and 2.6 times higher than the Ontario rate, respectively.

Figure 5. Top 10 leading causes of death by geographic region, 2021

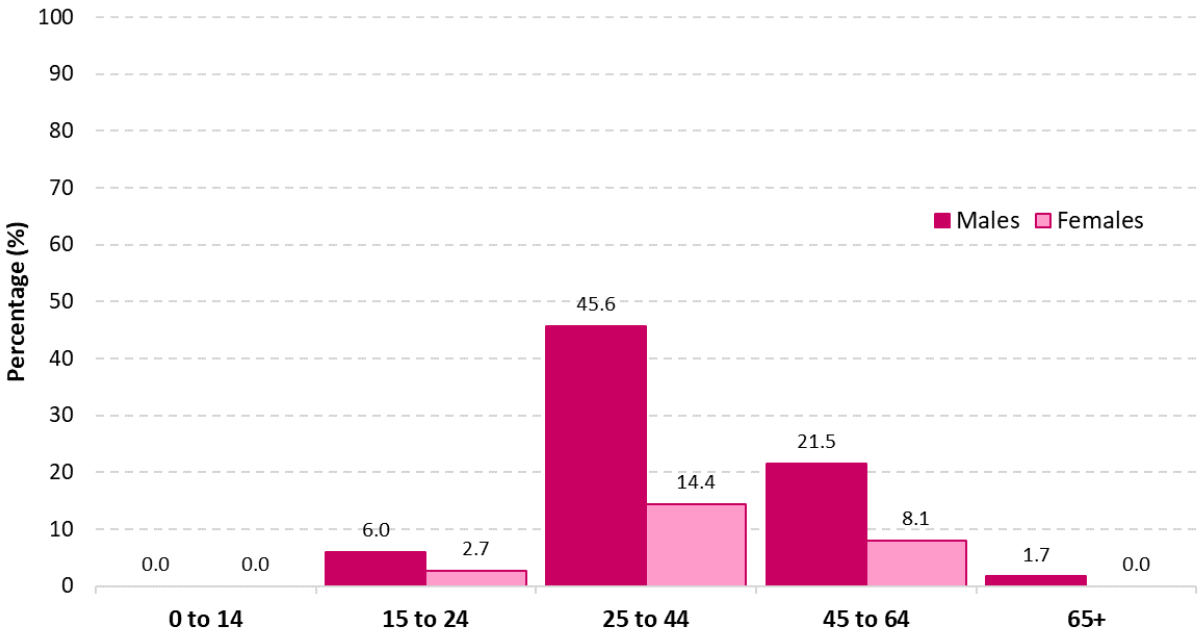


Data source: Ontario Ministry of Health (2023)

Interpretation:

- Accidental drug overdoses were the fifth leading cause of death in Sudbury and districts in 2021, representing 4.2% of all deaths among local residents that year. This proportion is almost twice as high as the provincial proportion, which was 2.3%.
- Twice as many residents of Sudbury and districts died from accidental overdoses in 2021 than from COVID-19.

Figure 6. Percentage (%) of accidental opioid-related deaths by age group and sex, Sudbury and districts, 2020–2022



Data Source: Ontario Agency for Health Protection and Promotion (2023b)

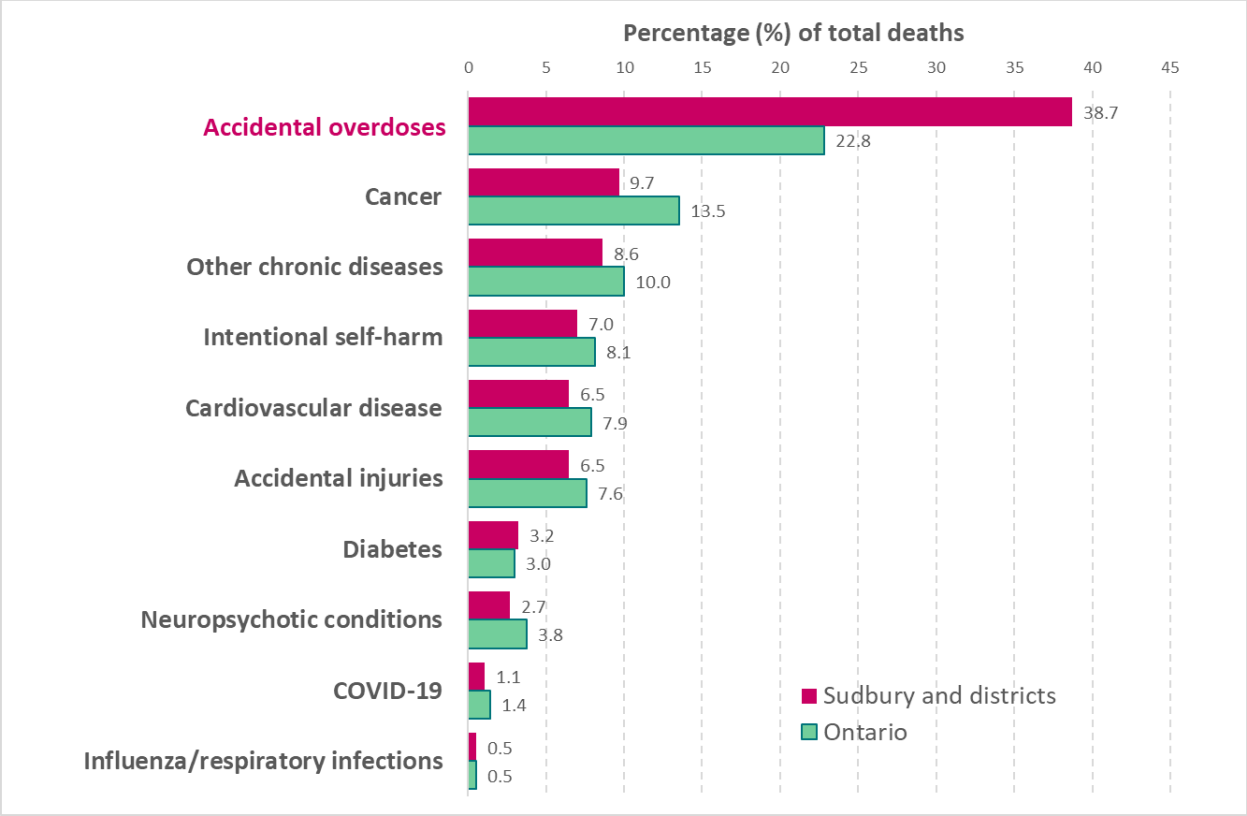
Interpretation

- From 2020–2022, the highest proportion of local opioid-related deaths were among the 25 to 44 age group, accounting for 60% of deaths (i.e. males and females combined), followed by the 45 to 64 age group at 29.6%.
- Males accounted for a large majority of deaths in all age groups. For example, males aged 25 to 44 accounted for 45.6% of all opioid-related deaths in Sudbury and districts, compared to 14.4% for females of the same age.

Of note

Data on both the racial identity and employment status of the decedent were examined. In both instances, data were missing or unknown for a large proportion (i.e. 35–40%) of the deaths, significantly increasing the risk of bias in the results. Therefore, these analyses have not been reported.

Figure 7. Top 10 leading causes of death by geographic region, ages 0–49, 2021

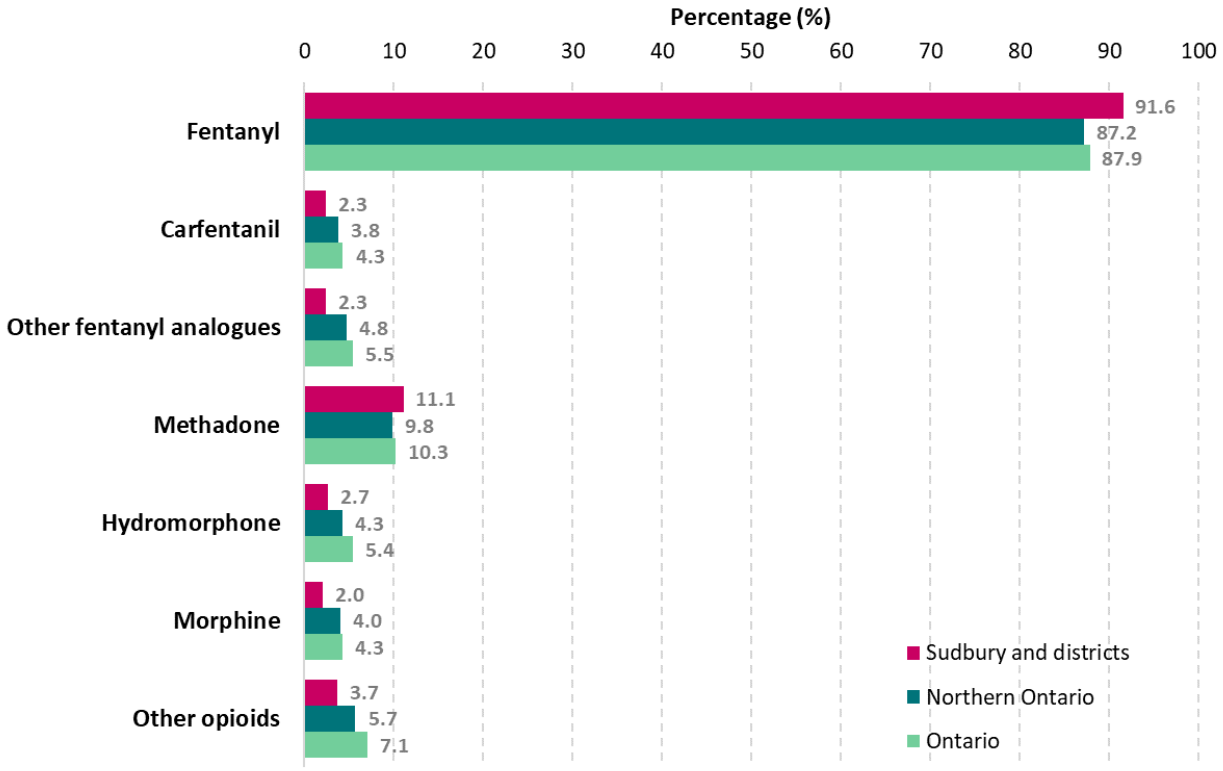


Data source: Ontario Ministry of Health (2023)

Interpretation:

- Accidental drug overdoses were, by far, the leading cause of death among residents younger than 50 years old in Sudbury and districts in 2021. Almost 4 out of every 10 local residents (i.e. 38.7%) aged 0 to 49 years who died that year died from an accidental overdose. This proportion is significantly higher than the provincial proportion, which was 22.8%.
- Accidental overdoses accounted for 3 402 *potential years of life lost (PYLL)* among local residents in 2021, which is a measure of premature mortality. This represented 21.8 % of all *potential years of life lost* by residents of Sudbury and districts in 2021.

Figure 8. Percentage (%) of accidental opioid-related deaths by type of opioid directly contributing to death, Sudbury and districts, Northern Ontario and Ontario, 2020–2022

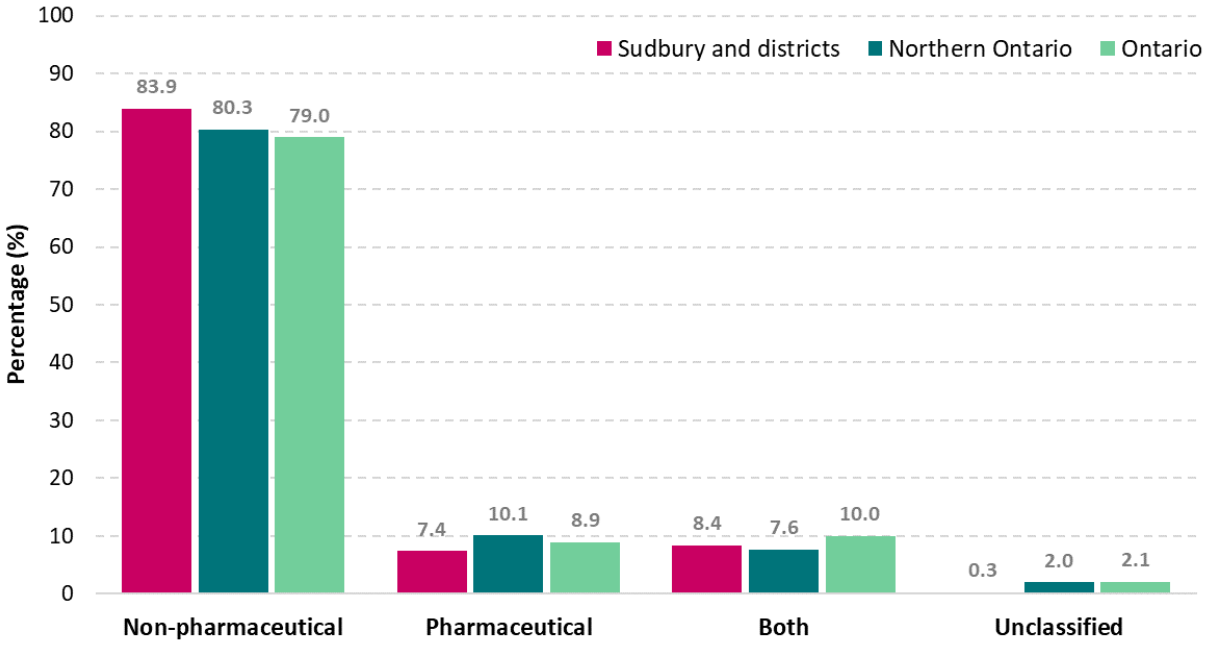


Note: More than one substance can contribute to the same death. Therefore, numbers are not intended to sum to 100%. Carfentanil is a fentanyl analogue but has also been selected for separate consideration here. Data Source: Ontario Agency for Health Protection and Promotion (2023b)

Interpretation

- Fentanyl accounted for a large majority of opioid-related deaths in all regions from 2020–2022. In Sudbury and districts, it directly contributed to 91.6% of deaths, with methadone being the second largest contributor at 11.1%.

Figure 9. Percentage (%) of accidental opioid-related deaths by origin of opioid directly contributing to death, Sudbury and districts, Northern Ontario and Ontario, 2020–2022



Data Source: Ontario Agency for Health Protection and Promotion (2023b)

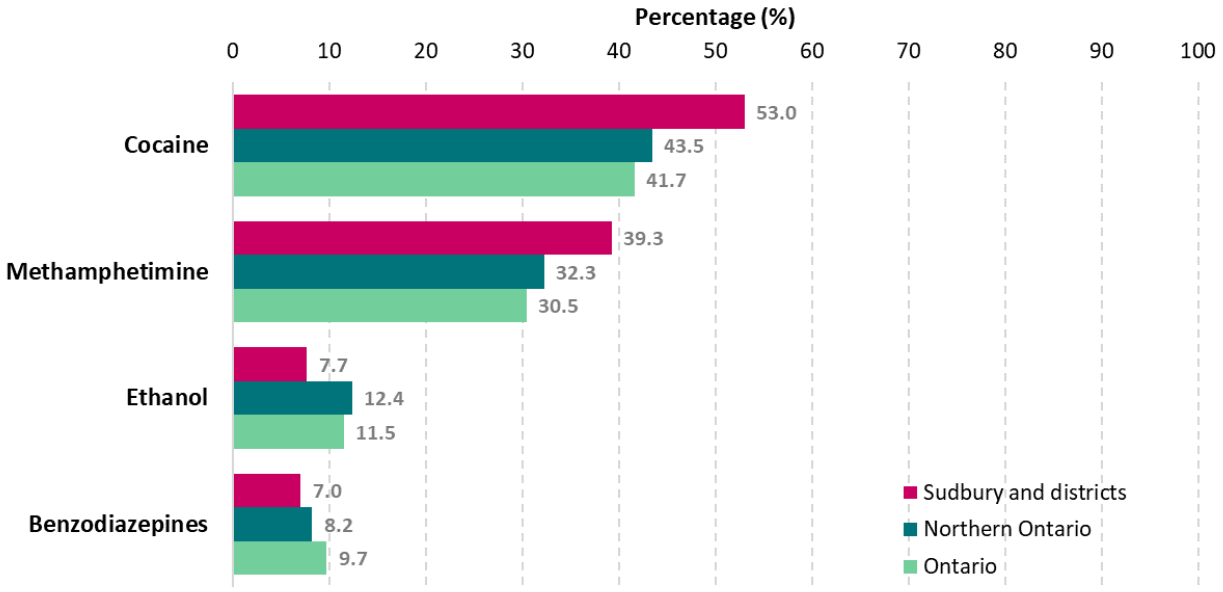
Interpretation

- From 2020–2022, in all regions, the opioids directly contributing to deaths were of a non-pharmaceutical origin. In Sudbury and districts, opioids with non-pharmaceutical origins accounted for 83.9% of deaths.

Of note

In contrast to pharmaceutical opioids (such as those regulated and manufactured to treat pain), non-pharmaceutical opioids (such as heroin, fentanyl, and novel opioids) are often non-regulated illicitly manufactured substances (Ontario Drug Policy Research Network, 2022a; Velagapudi & Sethi, 2023). Changes in prescribing patterns locally reducing the availability of pharmaceutical opioids (reduction in opioid prescriptions in Sudbury and districts from 150 individuals per 1 000 population in 2016 to 105 per 1 000 population in 2022) may be a contributing factor for the significant use of non-pharmaceutical drugs locally (Ontario Drug Policy Research Network, 2023b).

Figure 10. Percentage (%) of accidental opioid-related deaths by types of non-opioids directly contributing to death, Sudbury and districts, Northern Ontario and Ontario, 2020–2022



Note: More than one substance can contribute to the same death. Therefore, numbers are not intended to sum to 100%.
Data Source: Ontario Agency for Health Protection and Promotion (2023b)

Interpretation

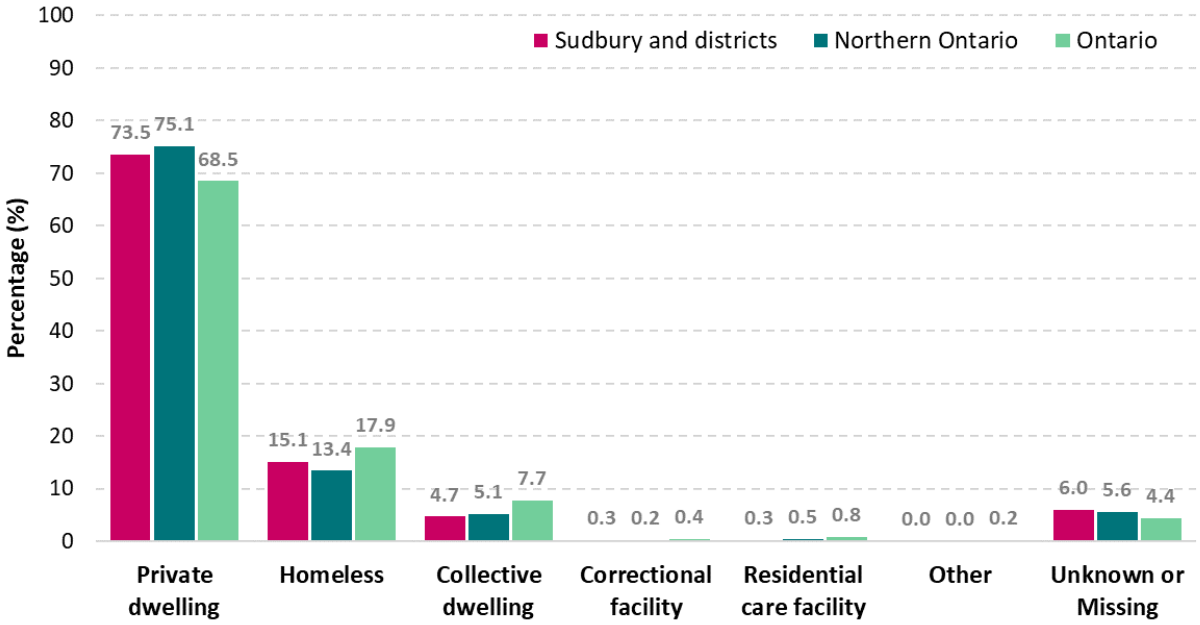
- A majority of opioid-related deaths were directly caused by the use of other substances in addition to the opioids.
- Between 2020 and 2022, 53% of opioid-related deaths in Sudbury and districts also involved cocaine, while methamphetamine was involved in 39.3% of the deaths. These proportions are slightly higher than those seen in Northern Ontario and Ontario overall.

Of note

Intentionally mixing different types of stimulants (such as cocaine) and depressants (such as heroin), either in combination within the same drug category or across drug categories, poses significant health risks including a three-fold higher mortality rate (Crummy et al., 2020).

Unintentional polysubstance consumption does occur and is more often the case for polysubstance use. Individuals may consume a substance that has been either intentionally cut or mixed with another substance (such as consuming cocaine cut with Fentanyl), or unintentionally contaminated by another substance due to poor handling/storage practices (cannabis cross contaminated with other substances), which can have severe toxic complications, including death (CDC, 2022a).

Figure 11. Percentage (%) of accidental opioid-related deaths by living arrangements of the decedent, Sudbury and districts, Northern Ontario and Ontario, 2020–2022



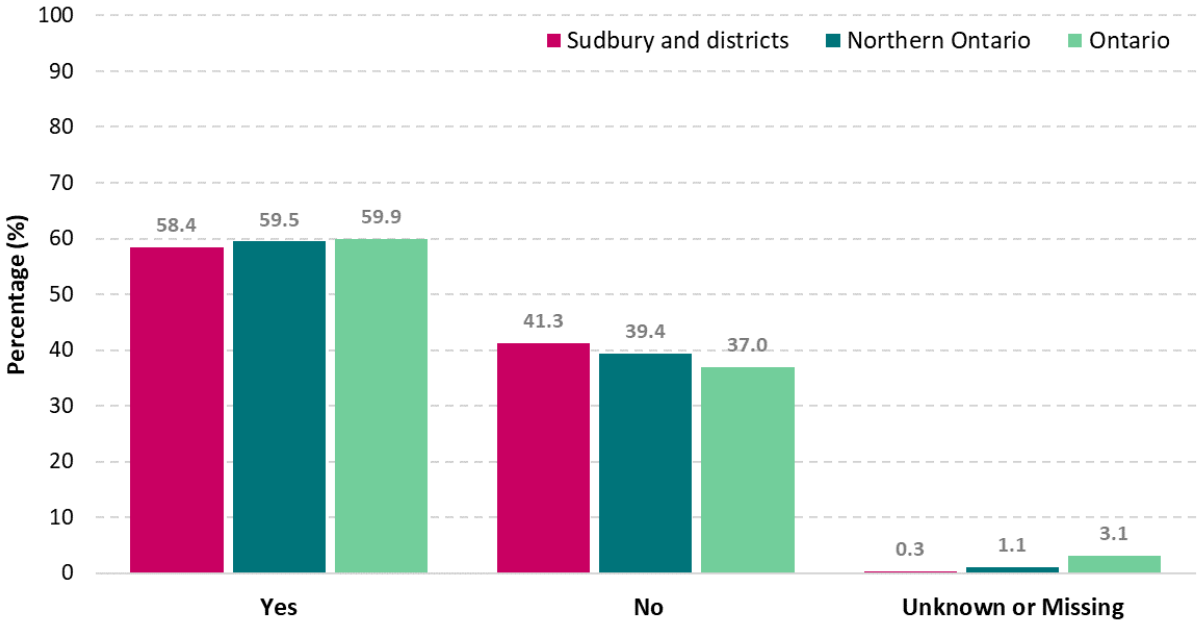
Data Source: Ontario Agency for Health Protection and Promotion (2023b)

Interpretation

- Between 2020 and 2022, in all regions, a large majority of individuals having an opioid-related death lived in a private dwelling at the time of their death. In Sudbury and districts, this proportion was 73.5%.
- Individuals who were homeless[1] accounted for the next highest proportions of deaths, 15.1% in Sudbury and districts.

[1] *Homelessness is the situation of an individual without stable, permanent, appropriate housing, or the immediate prospect, means and ability of acquiring it; includes no fixed address (*Gaetz et al., 2012).

Figure 12. Percentage (%) of accidental opioid-related deaths by whether or not the decedent was at home at the time of death, Sudbury and districts, Northern Ontario and Ontario, 2020–2022

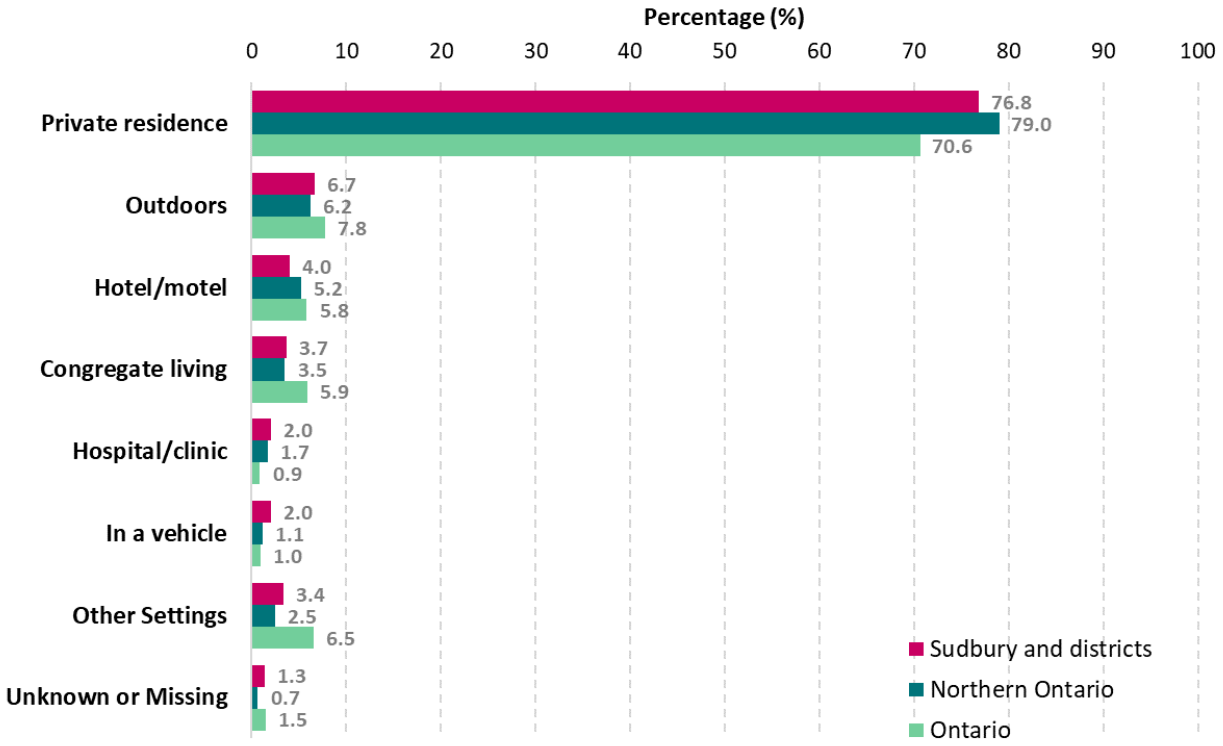


Data Source: Ontario Agency for Health Protection and Promotion (2023b)

Interpretation

- A majority (58.4%) of individuals dying an opioid-related death in Sudbury and districts between 2020 and 2022 were at home at the time of their death. This is consistent with what is seen across all regions.

Figure 13. Percentage (%) of accidental opioid-related deaths by the location of the incident, Sudbury and districts, Northern Ontario and Ontario, 2020–2022

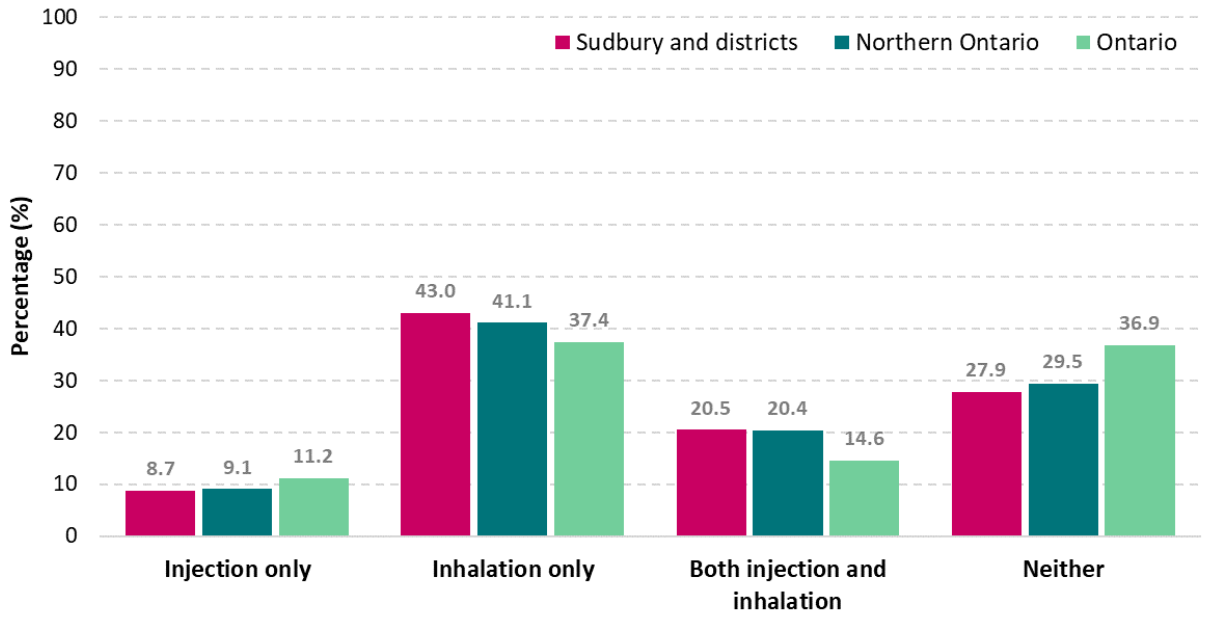


Data source: Ontario Agency for Health Protection and Promotion (2023b)

Interpretation

- In all regions between 2020 and 2022, a large majority of opioid-related deaths were due to poisoning incidents that occurred in a private residence. In Sudbury and districts, 76.8% were in a private residence at the time of the incident.

Figure 14. Percentage (%) of accidental opioid-related deaths by whether or not there was evidence of injection and/or inhalation drug use found at the scene, Sudbury and districts, Northern Ontario and Ontario, 2020–2022



Data source: Ontario Agency for Health Protection and Promotion (2023b)

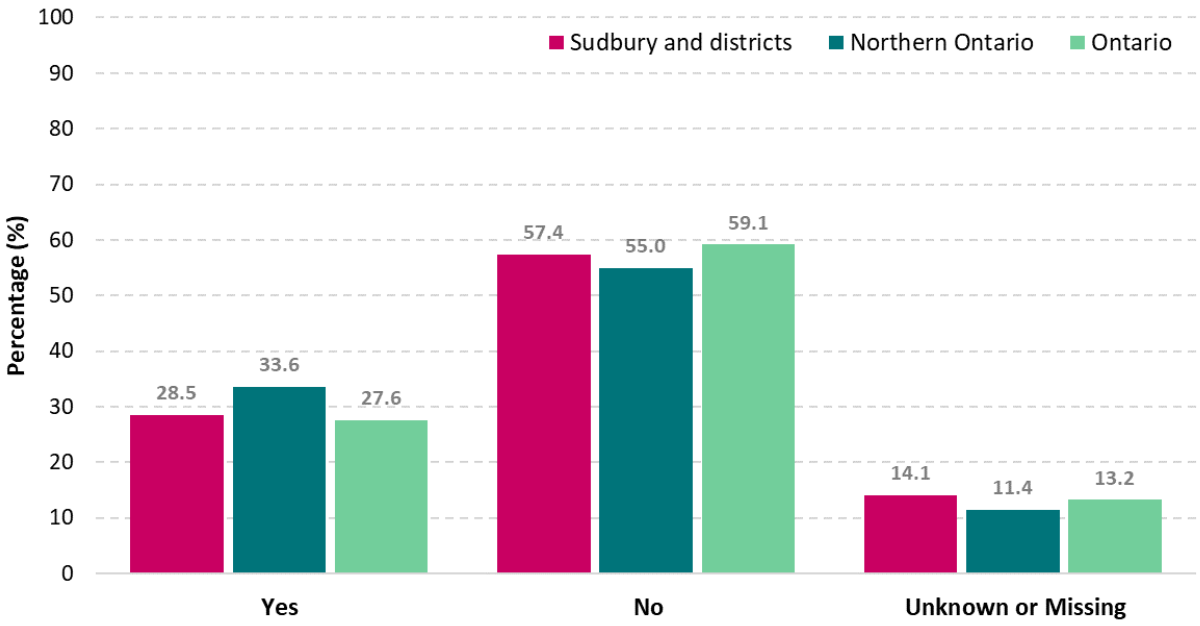
Interpretation

- In Sudbury and districts from 2020–2022, a majority (63.5%) of opioid-related deaths had evidence of the inhalation of drugs found at the scene, while 29.2% had evidence only of injection drug use. Including in these proportions are the one-fifth (20.5%) of deaths that had evidence of both types of drug use.
- The proportion of deaths with evidence of inhalation drug use only was slightly higher in Sudbury (43%) and Northern Ontario (41.1%) than in Ontario overall, as was the proportion showing evidence of both injection and inhalation (20.5% and 20.4%, respectively).

Of note

The proportion of deaths with evidence of inhalation is on the rise across the province. Since 2018, the proportion of toxic drug-related deaths in Ontario with only signs of inhalation increased by 116% (from 18% to 39%) of deaths). The corresponding increase in Greater Sudbury was slightly lower, but still significant at 85% (from 26% to 48%) (Huery, 2023; results not shown).

Figure 15. Percentage (%) of accidental opioid-related deaths by whether or not naloxone use was reported, Sudbury and districts, Northern Ontario and Ontario, 2020–2022

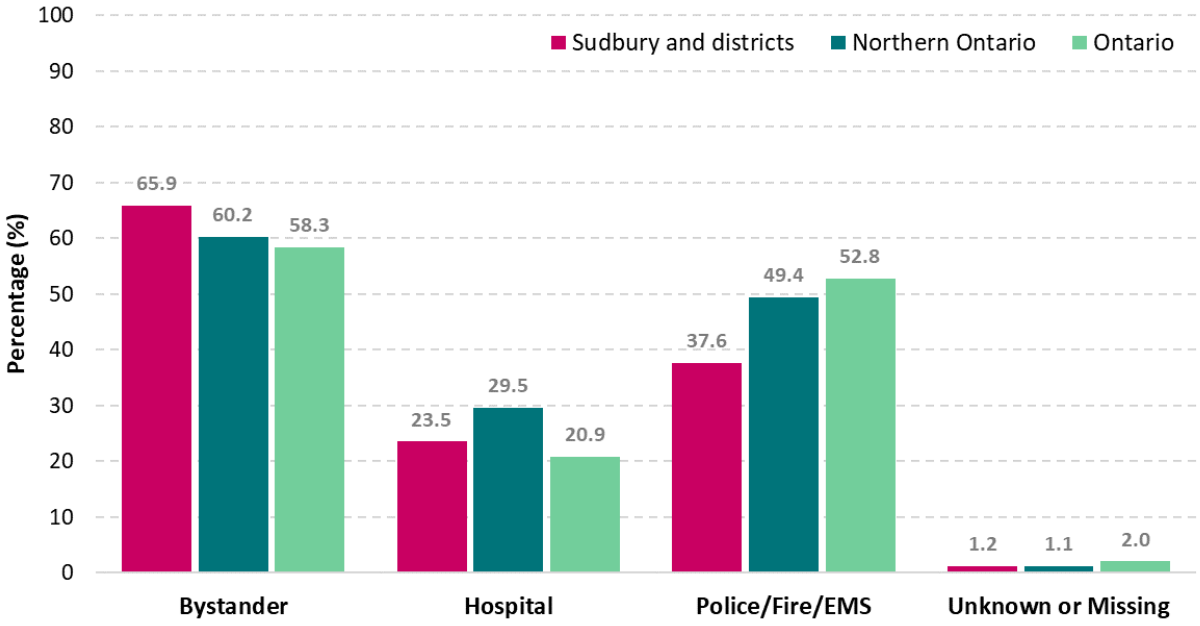


Data source: Ontario Agency for Health Protection and Promotion (2023b)

Interpretation

- In a majority of opioid-related deaths between 2020 and 2022, there was no reported use of naloxone. In Sudbury and districts, 28.5% of deaths had a reported use of naloxone, while 57.4% did not. These proportions are consistent with trends seen elsewhere in Ontario.
- Note that these data are missing for a significant proportion of deaths, 14.1% in Sudbury and districts.

Figure 16. Percentage (%) of accidental opioid-related deaths for which naloxone use was reported by who administered the naloxone, Sudbury and districts, Northern Ontario and Ontario, 2020–2022



Note: Multiple individuals can administer naloxone to the same individual. Numbers are therefore not intended to sum to 100%. Data source: Ontario Agency for Health Protection and Promotion (2023b)

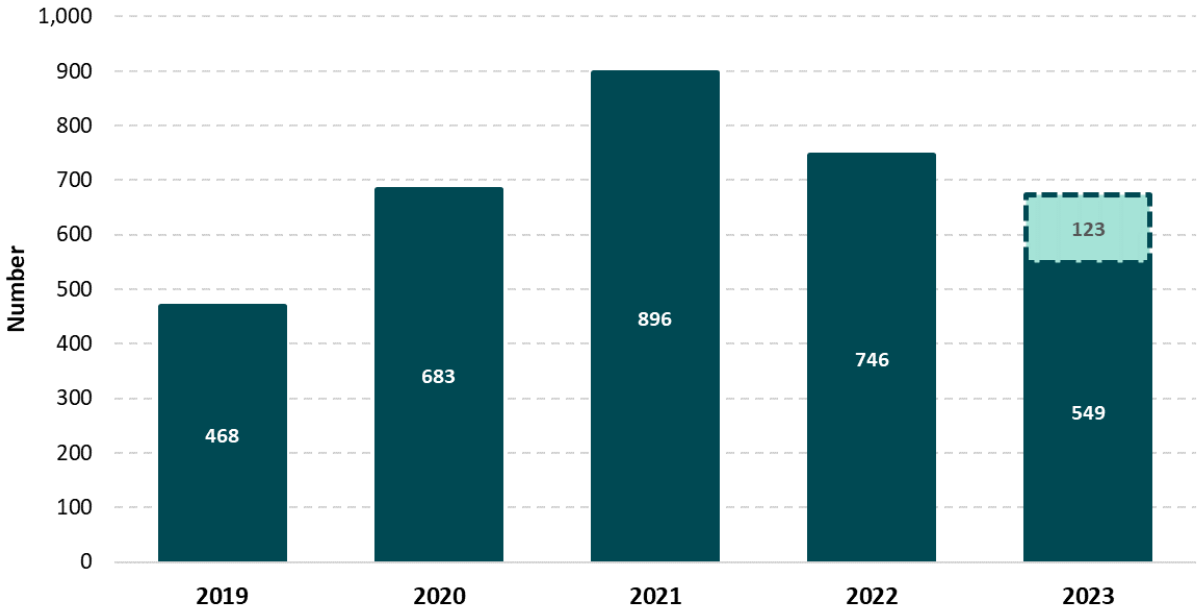
Interpretation

- In a majority (65.9%) of instances where an opioid-related death in Sudbury and districts had a reported use of naloxone in 2020–2022, a bystander was the one who administered the naloxone. This proportion is higher than in other regions.
- Police, fire, and Emergency Medical Services administered naloxone in 37.6% of such deaths in Sudbury and districts, which is lower than in other regions.

Data on emergency medical services calls for suspected opioid-related poisonings

These results are based on data provided to Public Health by City of Greater Sudbury Emergency Medical Services (EMS) and are based on incidents attended by EMS for which a patient is suspected of having used opioids based on witness accounts, evidence found at the scene, or because naloxone was administered. Note that it is a count of the incidents attended, not patients to whom care was administered. Data for 2023 should be considered preliminary and are subject to change.

Figure 17. Number of suspected opioid incidents attended by City of Greater Sudbury Emergency Medical Services (EMS) by year, 2019–2023 (projected)

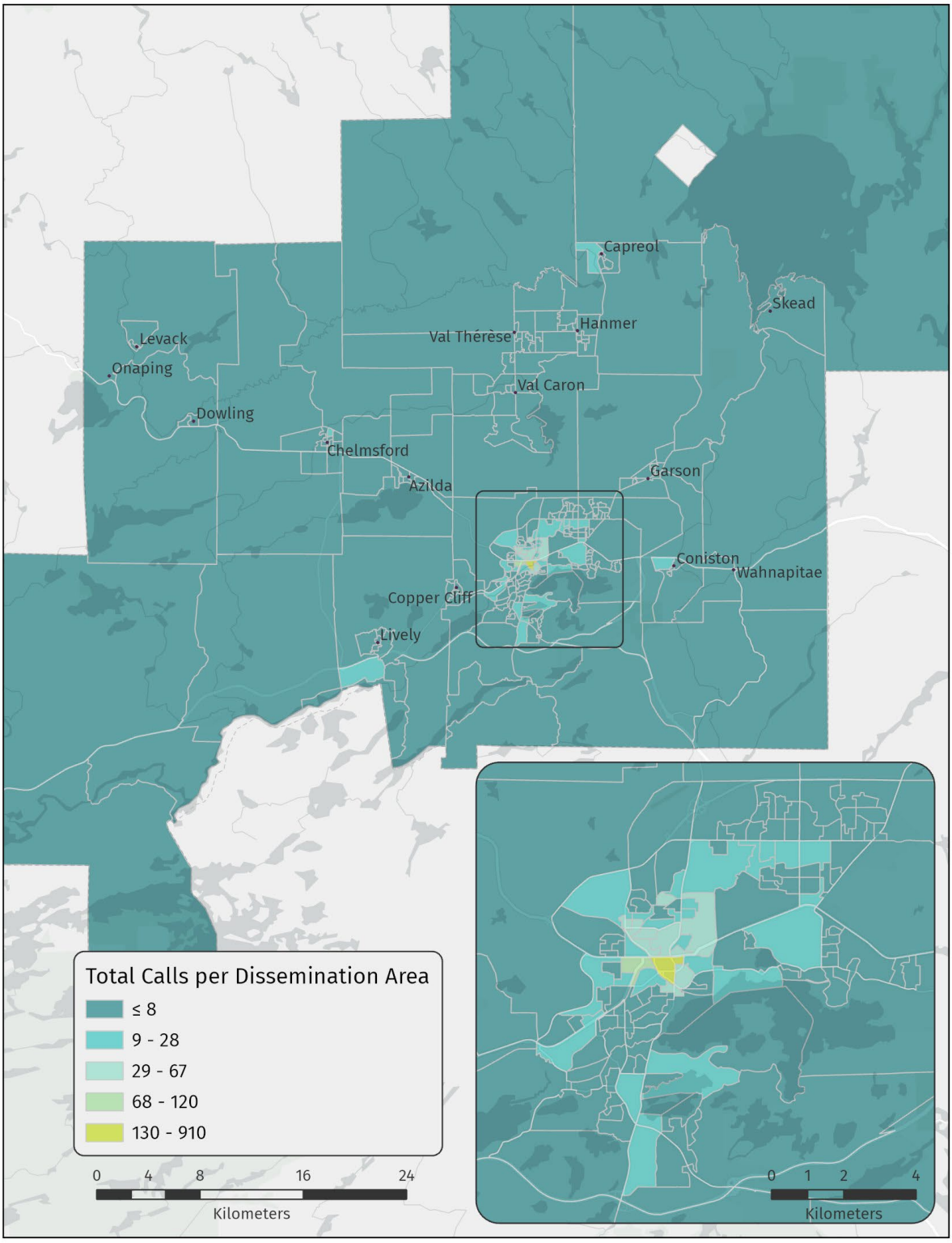


Note: The projection for 2023 assumes that the average daily rate of incidents reported up to and including October 24 will continue for the remainder of the year. Data Source: City of Greater Sudbury Emergency Medical Services (2023)

Interpretation

- The number of EMS calls for suspected opioid incidents increased by 91% from 2019 (468 calls) to 2021 (896 calls). It has since decreased and is projected to be 672 calls in 2023.

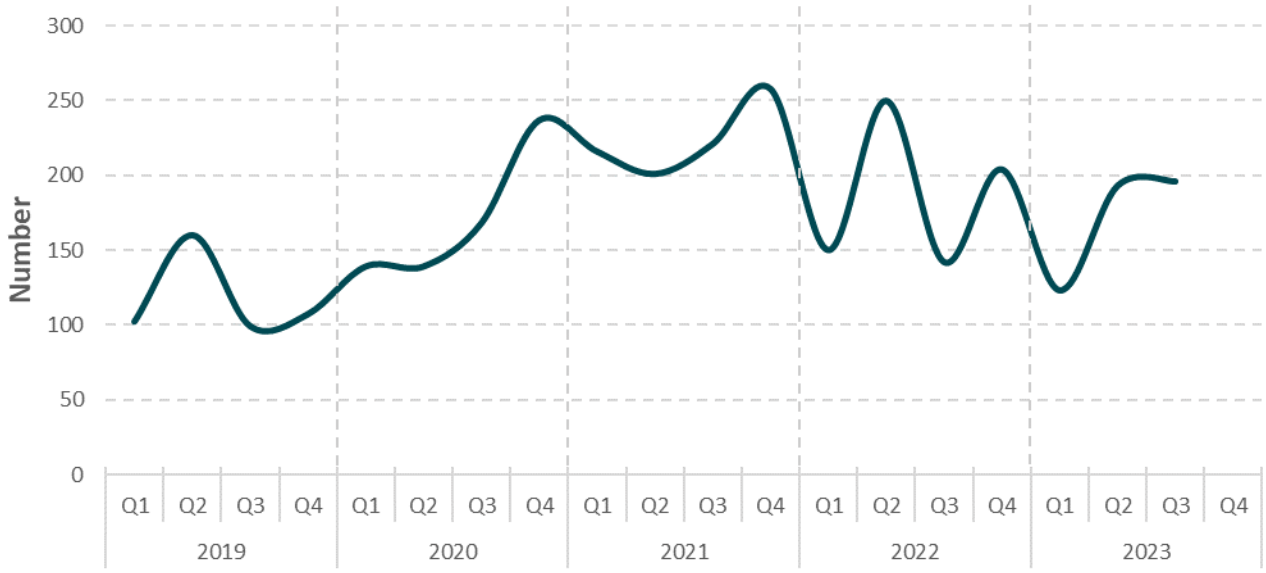
Figure 18. Distribution of opioid related calls for service by City of Greater Sudbury Emergency Medical Services (EMS) from January 1, 2019, to September 24, 2023, summarized to 2021 dissemination area boundaries



Interpretation

- The dissemination areas near the downtown core receive more opioid related calls for service than other dissemination areas in Greater Sudbury. A total of 908 calls were received in the core and 120 calls were received in the dissemination area to the west of the core between January 1, 2019, and September 24, 2023.
- Opioid related calls for service occurred across the urban core, also known as the former city of Sudbury, as shown in the inset map. Outside of the urban core, dissemination areas in Coniston, Lively, Chelmsford and Capreol each reported more than nine opioid-related calls for service between January 1, 2019, and September 24, 2023.

Figure 19. Number of suspected opioid incidents attended by City of Greater Sudbury Emergency Medical Services (EMS) by annual quarter, 2019–2023

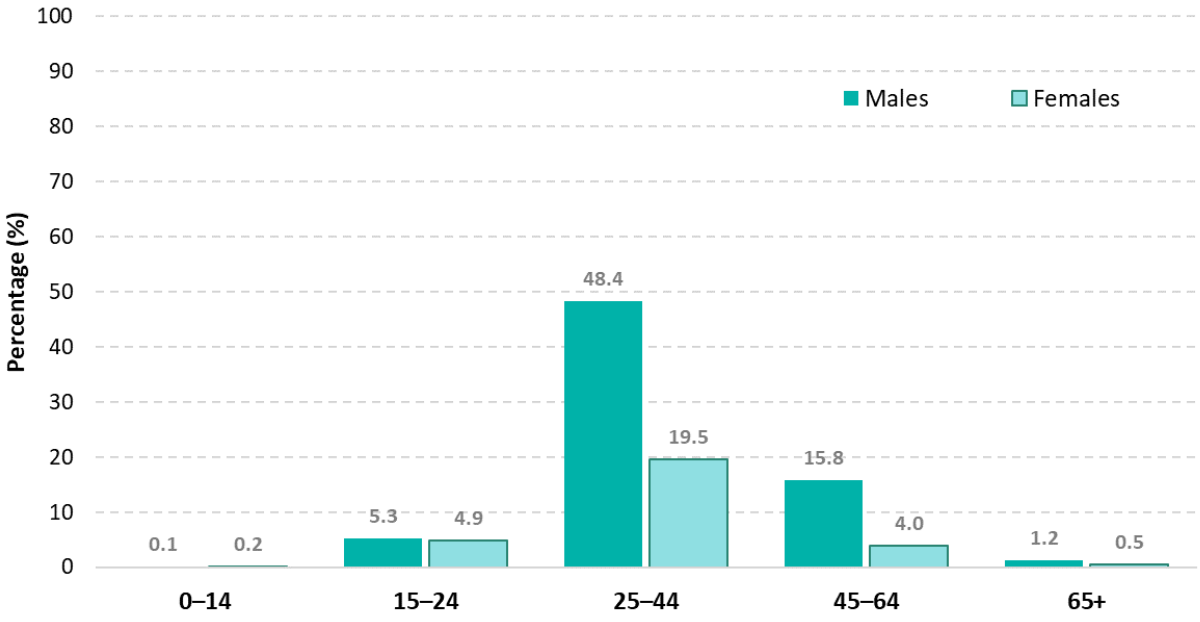


Data Source: City of Greater Sudbury Emergency Medical Services (2023)

Interpretation

- It is difficult to discern a pattern in the number of EMS calls for suspected opioid-related incidents by quarter. Different quarters of the year had higher counts in different years.

Figure 20. Percentage (%) of suspected opioid incidents attended by City of Greater Sudbury Emergency Medical Services (EMS) by age group and sex of patient, 2021–2023 (year to date)

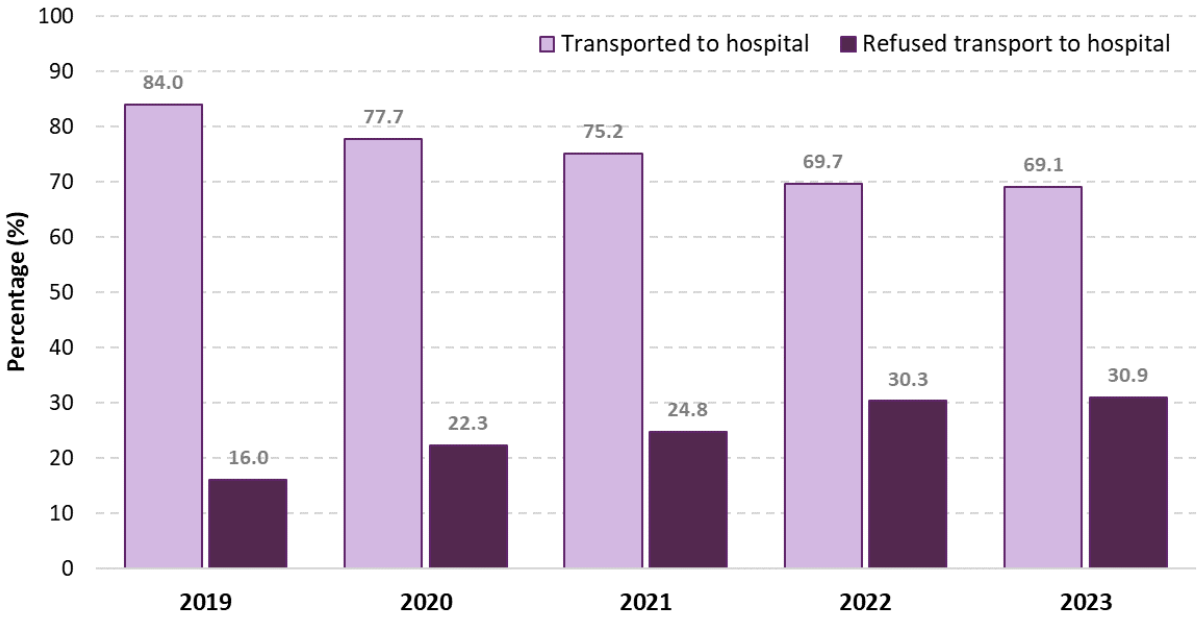


Data Source: City of Greater Sudbury Emergency Medical Services (2023)

Interpretation

- The highest proportion of EMS calls for suspected opioid incidents from 2021 to 2023 (year to date) was among those in the 25–44 age group (64.5% for males and females combined). Males aged 25–44 years accounted for 48.4% of opioid-related EMS calls overall.
- Overall, the patient was male in 70.8% of all EMS calls for suspected opioid incidents in 2021–2023 (year to date).

Figure 21. Percentage (%) of suspected opioid incidents attended by City of Greater Sudbury Emergency Medical Services (EMS) by whether or not the patient was transported to hospital, by year, 2019–2023 (year to date)

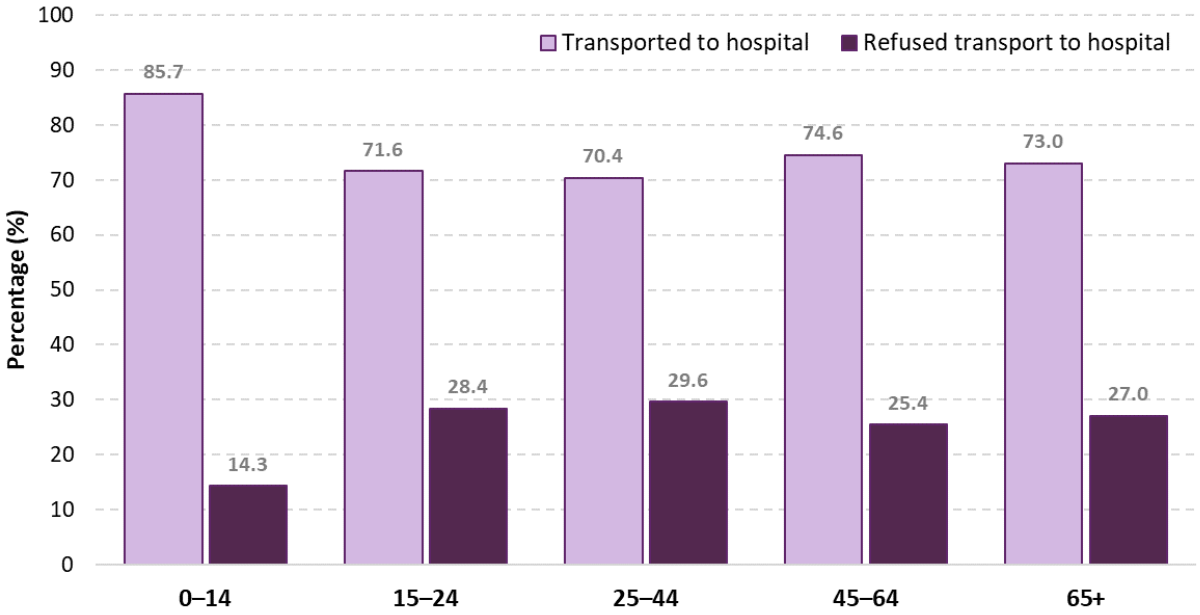


Data Source: City of Greater Sudbury Emergency Medical Services (2023)

Interpretation

- The proportion of calls for suspected opioid-related incidents in which the patient was transported to hospital by EMS has declined over the years from 84.0% in 2019 to 69.1% in 2023.

Figure 22. Percentage (%) of suspected opioid incidents attended by City of Greater Sudbury Emergency Medical Services (EMS) by whether or not the patient was transported to hospital, by age group, 2021–2023 (year to date)

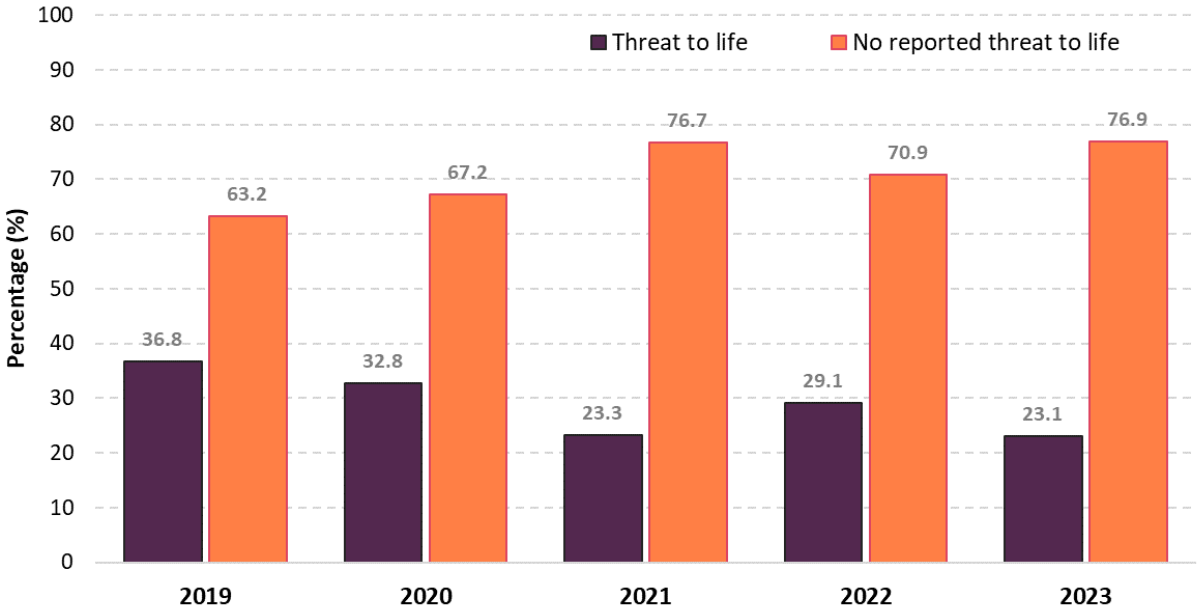


Data Source: City of Greater Sudbury Emergency Medical Services (2023)

Interpretation

- From 2019–2023 (year to date), the proportion of EMS calls for suspected opioid-related incidents in which the patient was transported to hospital by EMS was highest for calls involving patients in the 0–14 age group (85.7%), and lowest for those involving patients in the 25–44 age group (70.4%). There is no discernible trend.
- Note that the proportion shown for the 0–14 age group is based on very small counts and should be interpreted with caution.

Figure 23. Percentage (%) of suspected opioid incidents attended by City of Greater Sudbury Emergency Medical Services (EMS) by whether or not the patient's life was threatened, by year, 2019–2023 (year to date)

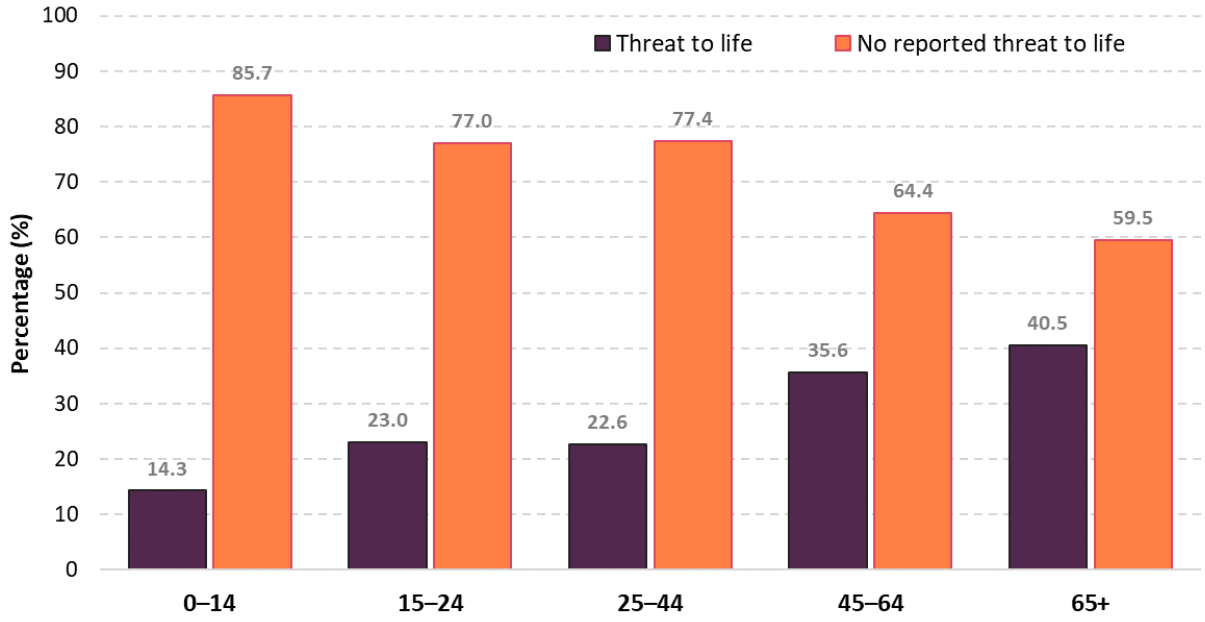


Data Source: City of Greater Sudbury Emergency Medical Services (2023)

Interpretation

- The proportion of incidents attended by EMS that were life threatening fluctuated from year to year, with a low of 23.3% in 2021 to a high of 36.8% in 2019. There is no discernible trend.

Figure 24. Percentage (%) of suspected opioid incidents attended by City of Greater Sudbury Emergency Medical Services (EMS) by whether or not the patient's life was threatened, by age group, 2021–2023 (year to date)

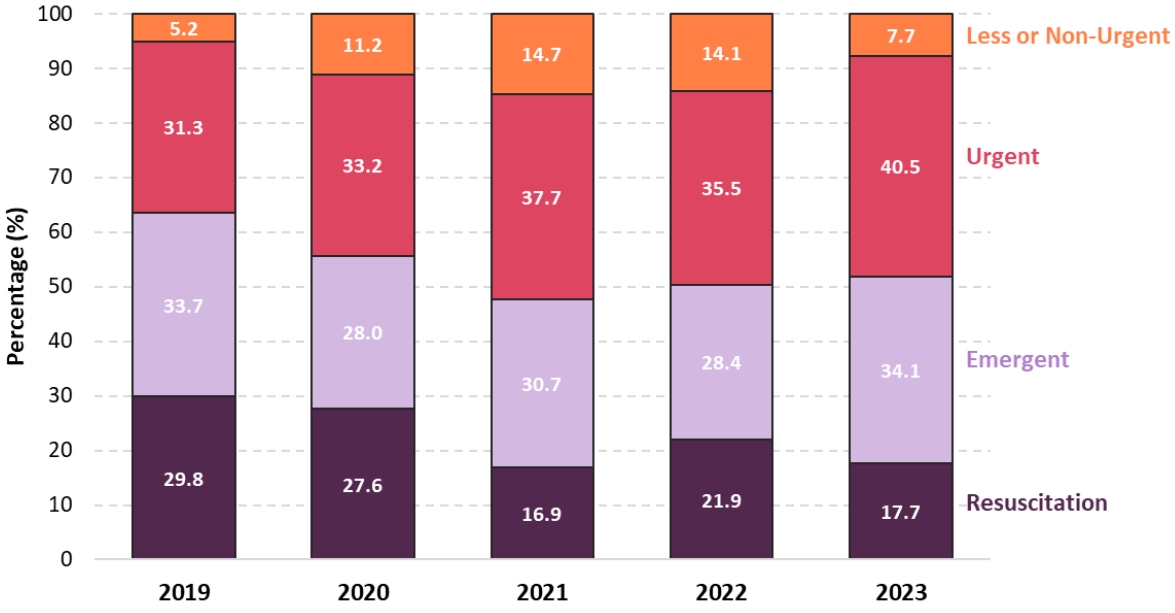


Data Source: City of Greater Sudbury Emergency Medical Services (2023)

Interpretation

- The proportion of EMS calls for suspected opioid-related incidents from 2021–2023 that involved a life-threatening situation increased with the age of the patient, with 40.5% of patients aged 65 years and over experiencing a threat to life compared to 23.0% of 15 to 24 year olds.
- Note that the proportion shown for the 0–14 age group is based on very small counts and should be interpreted with caution.

Figure 25. Percentage (%) of suspected opioid incidents attended by City of Greater Sudbury Emergency Medical Services (EMS) by Canadian Triage and Acuity Scale (CTAS) category, by year, 2019–2023 (year to date)

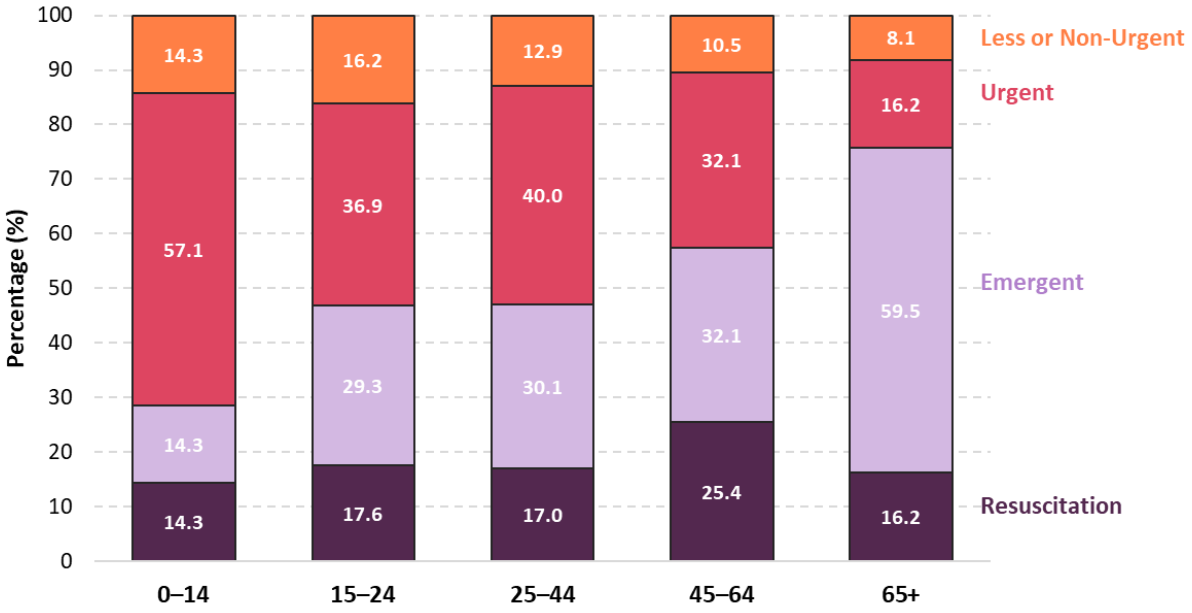


Data Source: City of Greater Sudbury Emergency Medical Services (2023)

Interpretation

- Based on the Canadian Triage and Acuity Scale (CTAS), most EMS calls for suspected opioid-related incidents between 2019 and 2023 (year to date) fell into either the emergent or urgent categories, with a range of 61.2% to 74.6% for the two categories combined.
- The proportion of calls that required resuscitation of the patient ranged from a low of 16.9% in 2021 to a high of 29.8% in 2019.

Figure 26. Percentage (%) of suspected opioid incidents attended by City of Greater Sudbury Emergency Medical Services (EMS) by Canadian Triage and Acuity Scale (CTAS) category, by year, 2021–2023 (year to date)



Data Source: City of Greater Sudbury Emergency Medical Services (2023)

Interpretation

- Based on the Canadian Triage and Acuity Scale (CTAS), from 2021–2023 (year to date) the proportion of EMS calls for suspected opioid-related incidents falling into either the resuscitation or emergent categories increased with age from 46.9% in the 15–24 age group to 75.7% in the 65 years and older group (both categories combined).
- Note that the proportion shown for the 0–14 age group is based on very small counts and should be interpreted with caution.

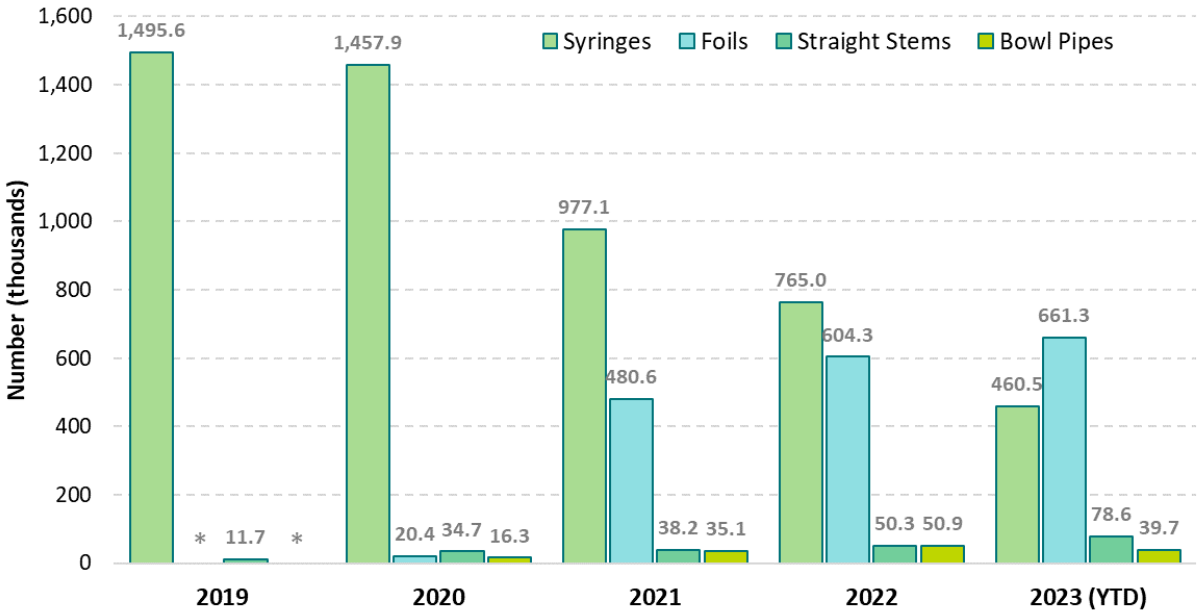
Drug use proxy data

As previously noted, direct measures of local drug use are difficult to obtain and even more difficult to infer onto a general population. Proxy data may, however, provide some important insights for consideration. While estimates of illicit drug use cannot be calculated based on the demand or use of harm reduction services—such as access to safe supplies (including needles, sterile water, pipes, and naloxone distribution) or accessing Greater Sudbury's supervised consumption site—this data does demonstrate an increasing demand and need for accessing safe supplies and harm reduction services.

Harm reduction supplies

Public Health Sudbury & Districts has continuously learned from people who use drugs in our community, and we have adapted the types of harm reduction supplies available to better meet their requirements. Initial harm reduction supplies circa 2010 consisted of packages of sterile syringes for injecting drugs; however, current harm reduction kits now exist for different types of drugs and different methods of consumption such as injection kits, snorting kits, as well as inhalation supplies.

Figure 27. Number of various harm reduction supplies distributed by Public Health Sudbury & Districts by year, 2019-2023 (year to date)



* Data on foils and bowl pipes are not available for 2019. Counts for 2022 and 2023 are preliminary and are subject to change.
Source: Public Health Sudbury & Districts, 2023.

Interpretation

- The distribution of needles has steadily decreased in recent years, from approximately 1.5 million in 2019 to 765 025 in 2022.
- During this period, there has been a dramatic increase in the demand for foil, with 661 296 foil kits distributed thus far in 2023—surpassing the number of syringes distributed.

Naloxone distribution and training

Naloxone is a fast-acting medication used to temporarily reverse the effects of opioids by blocking opioid receptors, and thus the effects of opioids within your body (Health Canada, 2023b). Since 2018, Public Health Sudbury & Districts staff and their partners have trained over 16 098 individuals from 33 community organizations to administer naloxone (CGS, 2023b). Each year there has been an increase in demand for naloxone products. In 2019, Public Health distributed a total of 6 958 naloxone kits and refills to community agencies, while Réseau ACCESS Network and pharmacies distributed a further 3 052 and 6 438 kits and refills, respectively (CGS, 2023b). By 2022, Public Health was distributing a total of 13 345 naloxone doses annually, with Réseau ACCESS Network distributing 8 212 doses that year and pharmacies distributing 6 286 doses (CGS, 2023b).

The data featured below provides a point in time snapshot of local drug use in 2019. While this snapshot provides perspective from local individuals with lived experience, it is important to recognize that the data is a few years old and local context has changed. At the time of collection, injection use was a common method of consumption. In recent years, drug use via inhalation has become more widespread and is currently considered the most popular method for using substances in Canada (Parent et al., 2021; Bragazzi et al., 2021).

2019 Snapshot from those with lived experience

In 2019, Public Health Sudbury & Districts interviewed 190 people who use drugs for the 2020 report, *Supervised consumption services study: Understanding the need, assessing the potential* (NAFS – Needs and Feasibility Study) (Public Health Sudbury & Districts, 2020). The data below represents point-in-time feedback from persons with lived experience to provide historical local context.

- **The majority (91.6%) of participants lived in Greater Sudbury, with ~60% were male, and the mean age was 40 (with a range from 17–66 years).**
- **The average age when survey respondents began using drugs was 22 years (with a range between 9 and 40 years).**
- **Two-thirds (66.8%) reported that they used injection drugs on a daily (43.2%) or weekly (23.7%) basis, while the remainder of respondents indicated that they used injection drugs on a monthly or less frequent basis (24.2%).**

- **People who use drugs indicated a polysubstance drug use, with cocaine being the most common co-drug of choice, followed by 'hydros' (e.g. hydromorphone, MS Contin, Dilaudid), crack, heroin, fentanyl, morphine, amphetamines, crystal meth, and speedballs as other drugs of choice.**
- **The majority of people who use drugs (85.2%) indicated that they had taken a drug they believed was cut with another substance.**
- **Accidental overdose was reported as a common experience among people who use drugs, with more than half (53.7%) reporting an overdose in their lifetime. Of these, 58.8% had experienced one or more overdoses in the last six months.**
- **The majority (84.3%) of the people who use drugs, who had experienced an overdose, were with other people at the time; however, just over 15% of respondents were alone when they experienced an overdose.**
- **More than half (54.9%) of the people who use drugs who experienced an overdose reported that an ambulance was called to provide medical attention, and, of these, 76.8% were taken to the hospital.**

Supervised consumption services and drug testing

On September 28, 2022, Greater Sudbury's first supervised consumption services[2] location, The Spot, was opened and is operated by Réseau ACCESS Network. As of August 31, 2023, 470 unique clients have used The Spot, representing 1 181 total visits, and 1 605 total consumptions (Réseau, 2023). Additionally, Réseau provides onsite drug checking services at The Spot, which can help reduce the harms related to the tainted drug supply.

Data gaps and limitations

While data are available on many topics related to drug toxicity—including the number of suspected drug-related deaths, hospital admissions, emergency department visits, EMS calls for suspected poisonings due to drug toxicity and overdose, supervised consumption services, and self-reported health survey data on substance use—these data all have limitations and data gaps continue to exist.

Data on suspected drug-related toxicity deaths are likely to capture all such events in Ontario but will not include information on non-fatal events. As well, it can take many months to determine

[2] Supervised consumption services (SCSs) are locations where people who use drugs can use pre-obtained drugs in a safe, empathetic place, free of stigma and discrimination, under the supervision of trained health professionals (Réseau Access Network, 2023).

the specific drug(s) causing death, meaning the data availability can be delayed. And, while the coroner's investigation may capture other important information, such as the location of death or the decedent's living circumstances, other potentially important explanatory factors like the decedent's race or occupation are often missing from the dataset.

Data on hospital admissions or visits to local emergency departments are much timelier and capture many non-fatal events. They do, however, miss data on individuals who do not seek medical treatment at the hospital or who die before transport to hospital. Further, these data are primarily administrative data and based upon medical charts, which again do not capture factors such as race and occupation.

Health surveys can be a better means of estimating the prevalence of substance use in our communities and are better able to capture sociodemographic and other information that is important to understanding drivers of the substance use and toxicity crisis. These data, however, can suffer from numerous biases due to a lack of representation of people who use drugs in typical survey samples, and the self-reported nature of the data. Timeliness of the data can be an issue. Drug use-related data that are currently available from Statistics Canada's Canadian Community Health Survey are years out of date.

Additionally, there is little reported information available from local drug checking services as well as data specifying inhalation as a means of use.

More reporting and timely updates from local and provincial sources would help to address gaps in the available data and thus contribute to a more accurate understanding of current trends and behaviours.

Factors contributing to drug use

In July and August 2023, Public Health conducted a literature review to identify current evidence, causes, and gaps in knowledge related to increasing morbidity and mortality due to the consumption of illicit drugs and the toxic drug supply. This review utilized the EBSCO platform by searching academic and scientific databases including MEDLINE, PubMed, Embase, CINAHL, BMC and PsycINFO. Keywords reflected terms and subject headings related to *contributing f*actors, outcomes and existing interventions associated with the toxic drug supply, opioid crisis, acute drug toxicity, substance-related poisonings, *illicit drug use,* and overdose fatalities. In addition, a complementary and broad search strategy was then conducted to retrieve information from grey literature at the local, provincial, and national levels, which included a search of relevant websites, reports, papers, policy briefs, news articles and statistical sources from public health agencies and non-public health organizations to ensure harm reduction programs, outreach and treatment best practices were accurately represented. The articles were then screened and identified based on inclusion criteria with a focus on marginalized populations. Supplementary resources were also provided by community partners and local topic experts as deemed relevant to the review including systemic factors, social determinants of addiction, cultural norms, and attitudes. All resources were critically appraised to determine relevance and applicability.

The following highlights the most important overarching and unique factors associated with drug use that are relevant to our geographic region. Overall, these factors either fall within individual demographic or societal and structural considerations. For instance, the increase of fatalities is recognized among those aged 25–44 years old; however, other age groups may be disproportionately impacted as a result of the COVID-19 pandemic. Additionally, toxicity deaths occur mainly in men with findings implying deaths appear in lower income neighbourhoods (Ontario Drug Policy Research Network & Public Health Ontario, 2023). The effects of the unregulated, toxic drug supply in Ontario are also disproportionately impacting northern and rural communities along with various subpopulations such as Indigenous Peoples, construction and other trade workers, youth, people with a history of incarceration, women, and people experiencing poverty and homelessness (COO & Ontario Drug Policy Research Network, 2021; Wendt et al., 2021; Gomes et al., 2022a; McNeil et al., 2021; Friesen et al., 2021; Gomes et al., 2021; Iacono et al., 2023; Russell et al., 2023; Public Health Ontario, 2022; Thumath et al., 2023; Butler et al., 2023, van Draanen et al., 2022; Health Canada, 2023f; PHAC, 2023).

Further, the development of this *Environmental Scan* applied the theoretical lens of a social-ecological model (SEM) to understand and contextualize the impacts of the social determinants of health within the complex interplay between the individual, interpersonal (family, friends, social networks), the local community, and broader society. It is important to understand how influencers and factors at each of these levels—whether violence and trauma experienced at an individual level, to restrictive and punitive laws or policies that target various minority populations—impact drug consumption.

Demographic factors

Race and ethnicity

Throughout Ontario, racialized populations (BIPOC) face disproportionately high rates of poisonings associated with the volatile drug supply (Friesen et al., 2021; COO & Ontario Drug Policy Research Network, 2021; Sansone et al., 2022; Sapoznikow, 2022). Locally, within the Public Health Sudbury & Districts service area (inclusive of 13 First Nations communities), 13.9% of the population identifies as Indigenous; a rate that is almost five times as high as the provincial rate of 2.9% (Statistics Canada, 2023).

Indigenous Peoples are at an increased risk of experiencing acute drug toxicity deaths due to the structural impacts of intergenerational trauma, colonization, poverty, child apprehension, and systemic racism experienced today (Health Canada, 2023e; Ontario Drug Policy Research Network & Public Health Ontario, 2023; COO & Ontario Drug Policy Research Network, 2021; Friesen et al., 2021; Lavalley et al., 2018; Lavalley et al., 2020; Wendt et al., 2021; Maar et al., 2022; Thumath et al., 2021; Sansone et al., 2022). Data demonstrates that, in Ontario, the rate of opioid-related mortality is four times higher for Indigenous People compared to the general population (Chiefs of Ontario & Ontario Drug Policy Research Network, 2021).

Additionally, Indigenous Peoples experience significant barriers to accessing culturally safe treatment and health care options, such as lengthy wait times for treatment, a lack of post treatment supports, and the influence of Christian-based models within treatment facilities (Lavalley et al., 2020). Further, the recent impacts of the COVID-19 global pandemic, along with the re-traumatization related to the uncovering of unmarked graves of children from Indian Residential Schools, requires immediate attention to collaboratively find culturally safe solutions and trauma-informed care to address substance use amongst Indigenous populations (Maar et al., 2022).

Greater Sudbury is also experiencing a change in local demographics, with growth in newcomer populations, including Black People and People of Colour. According to the most recent Statistics Canada census, People of Colour make up a larger proportion of the total population in

Greater Sudbury (e.g. 3.8% in 2016 to 6.6% in 2021) (Statistics Canada, 2023). Similar increases during this time period were also reported for individuals from South Asian and Black ethnicities. (Statistics Canada, 2023). Research shows that like Canada's Indigenous communities, racialized communities (particularly from the United States) face similar drug toxicity mortality rates and substance use related experiences (Sapoznikow, 2022).

The unique demographic considerations of racialized populations including Black, Indigenous, and People of Colour must be further examined when reviewing factors associated with drug use and toxicity. Despite unjust treatments and experiences, many individuals and communities possess assets that can and should be built upon.

Age

In Ontario, data shows an increase of fatalities among those aged 25–44 years old (Ontario Drug Policy Research Network & Public Health Ontario, 2023). Between 2020 and 2022, the 25–44 age group had the highest proportion of opioid-related deaths in Sudbury and districts, accounting for 60% of deaths, followed by the 45–64 age group at 29.6% (OAHPP, 2023b).

While those aged 25–44 years have consistently been the largest proportion of the population affected by the toxic drug poisoning crisis, during the pandemic non-prescription opioids exacerbated drug toxicity events and emergency department visits among youth in Ontario. Youth (aged 15–24) experienced higher trends in drug toxicity deaths related to fentanyl, fentanyl analogues, and unregulated benzodiazepines, along with polysubstance use with stimulants (47.9%) such as cocaine and methamphetamine (Iacono et al., 2023). Some of the reasons why youth experienced higher rates of drug toxicity and emergency department visits include minimal awareness of substance use, mental health hardships and impulsivity which may increase their risks of harm (Iacono et al., 2023; Russell et al., 2019). Between 2020 and 2022, close to 1 in 10 youths (8.7%) aged 15–24 lost their lives due to an accidental opioid-related death in the Sudbury and districts area (OAHPP, 2023b). From 2021 to 2023 (year to date), 10.2% of youth aged 15–24 experienced a suspected opioid-related incident that required attendance by the City of Greater Sudbury's Emergency Medical Services (EMS) (CGS, 2023).

As such, Iacono and colleagues (2023) state how youth who experience poisonings have higher rates of mental health diagnoses (88.8%) and 1 in 8 youth experience homelessness. In addition, intersecting factors such as lack of formal education, employment, and access to treatment specific to this age demographic leads to social exclusion in healthcare settings (Filia et al., 2022). For example, almost half of opioid drug toxicities consisted of youth and young adults who did not have a proper opioid use disorder diagnosis (Iacono et al., 2023). This could imply that this population may be under-diagnosed for opioid use disorder or that this population may be seen as a population that only uses illicit substances occasionally. These factors identified

should therefore be considered when developing preventative measures to reduce the onset of substance use disorders and to address the needs of this subpopulation (Iacono et al., 2023).

Major risk factors for substance use among youth include a family history of substance use and parental substance use; poor parental monitoring and favourable attitudes towards substance use; poor parental and family relationships; association with substance using peers; lack of school connectedness and low academic achievement; family rejection of sexual orientation or gender identity; and childhood sexual abuse (CDC, 2022b; Health Canada, 2023e). The presence of any of these risk factors significantly increases the likelihood of problematic substance use among youth, and these effects are compounding—as the number of risk factors increases, so does the risk of substance use (U.S. Department of Health and Human Services, 2016).

Gender

The increase of substance-related toxicity deaths is primarily seen in men between the ages of 25–44 years old (Gomes et al., 2023). Males 25–44 years accounted for 45.6% of all opioid-related deaths in Sudbury and districts, compared to 14.4% of females of the same age range (OAHPP, 2023b).

Throughout the COVID-19 pandemic, however, there was a slight increase in women between the ages of 25–44 years old in Ontario experiencing drug toxicity compared to pre-pandemic cohorts (Gomes et al., 2021). Numerous sources indicate how women who use drugs and gender-diverse persons are identified as a population that has been disproportionately and uniquely impacted by socio-structural barriers and social determinants of health (SDOH) related to the unregulated and toxic drug supply (Public Health Ontario, 2022). These barriers experienced by women who use drugs result in unmet needs due to their lack of connections to harm reduction services, treatments, and safer supply programs (Thumath et al., 2021; Public Health Ontario, 2022; Gomes et al., 2021; Austin et al., 2023; Canadian HIV/Aids Legal Network, 2020).

Various literature sources describe how research and policy changes related to the toxic drug supply crisis have exclusively targeted men and limited knowledge is available about the effects and safety of women, specifically women who pursue sex work, women with a history of incarceration, women living with HIV, gender-diverse persons, and women experiencing child removal practices along with how these factors can impact the risk of poisonings, relapses, and acute drug toxicity deaths (Public Health Ontario; 2022; Thumath et al., 2021; Austin et al., 2023).

Employment

The devasting impacts of drug toxicity crisis knows no bounds, affecting individuals from all walks of life and income levels. While those experiencing poverty are disproportionately

affected, evidence demonstrates that deaths due to acute drug toxicity are high amongst those working in lucrative careers such as mining, forestry, and the trades (Statistics Canada, 2021).

The North American Industry Classification System (NAICS) states that in Ontario in 2017, 8.4% of individuals worked in mining, quarrying, and oil and gas extraction, 0.7% worked in utilities, 7.8% worked in construction, and 4.4% worked in transportation and warehousing (Statistics Canada, 2023). In comparison, based on the National Occupational Classification (NOC) from 2021, 19% of individuals worked in the trades, transport, equipment operators, and related occupations, 5.2% worked in natural resources, agriculture, and related production occupations, and 2.5% worked in occupations in manufacturing and utilities across the Public Health Sudbury & Districts area (Statistics Canada, 2023).

During the pandemic, construction workers demonstrated, however, the most significant increase during the pandemic (29.5%) compared to retail trades (5.7%), transportation and warehousing (5.7%), manufacturing (4.5%) and other trades (5.7%) such as mining, agriculture, and forestry (Gomes et al., 2021). In addition, Gomes, and colleagues (2022a) state how "fentanyl (90.2%), cocaine (44.8%), and alcohol (17.5%) directly contributed to a larger proportion of toxicity deaths among construction workers" (p. 26) compared to individuals without a history of construction work. A report prepared by the Ontario Drug Policy Research Network, the Office of the Chief Coroner for Ontario, and Public Health Ontario (2022) states that construction work may be more susceptible to occupational injury and chronic pain specifically amongst younger men aged 25–44 (60.1%) who currently dominate this field of work.

Mental health status

Inextricably linked to any meaningful conversation about addictions is the acknowledgement and understanding of an individual's mental health status and the availability and access to mental health supports. A report on behalf of The Ontario Drug Policy Research Network (Ontario Drug Policy Research Network), the Office of the Chief Coroner for Ontario, and Public Health Ontario (2022) states that there were "very high rates of mental health diagnoses among people dying of an opioid-related toxicity, with increased prevalence of individuals with previous known diagnoses of psychotic disorders and trauma/stressor-related disorders" (Gomes et al., 2022a, p. 27) during the COVID-19 pandemic.

Specifically, more than 90% of people experiencing homelessness in Ontario who died of an opioid-related poisoning visited a health care provider for a mental health-related reason in the five years prior to death (Gomes et al., 2022a). As such, the Centre for Addiction and Mental Health (2021) and the *Canadian Drugs and Substances Strategy: Prevention and education* (2023) by Health Canada explains how childhood traumatic events, mental illness (e.g. post-traumatic stress disorder) and adult traumatic experiences can also lead to substance use (CAMH, 2021a; Health Canada, 2023e).

Based on the 2019 and 2020 Canadian Community Health Survey data, 10.6% of Public Health Sudbury & Districts residents perceived their mental health as fair or poor compared to 9.8% of Ontario residents (Statistics Canada, 2022). Despite this data, there are no statistically significant differences between residents in the Public Health Sudbury & Districts area and those in Ontario.

Recognizing the unique circumstances in northern and rural communities related to the social determinants of health and health equity will help improve timely access to mental health and substance use supports (MHCC, 2021). As well, the Northern Policy Institute (NPI) reiterates the importance of ensuring wraparound mental health, addiction, and homelessness services (Northern Policy Institute, 2022).

History of incarceration

The literature explains how acute drug toxicity deaths and poisonings, prior and throughout the fentanyl-dominant era, are more common in people who have a history of incarceration with increased drug-related harms and risks such as injury, illness, and emergency room visits (Butler et al., 2023; Friesen et al., 2021; van Draanen et al., 2020; Jalali et al., 2020; Gan et al., 2020; Kinner at al., 2021; Groot et al., 2016). For example, a 2006-2013 study by Groot and colleagues (2016), examined toxicity deaths in Ontario prior to the fentanyl-dominant era. The study found that 10.1% of all acute toxicity deaths occurred in people with a history of incarceration in the past year.

During the fentanyl-dominant era (e.g. between 2015 and 2020) however, a study by Butler and team (2023) identified 15.6% of all acute drug toxicity deaths were experienced by people with a history of incarceration within the past year. Structural barriers were noted as increasing risks related to drug toxicity including lowered drug tolerances, unstable environments post release, inadequate housing, limited employment opportunities, lack of medical care, and other financial needs which hinders this subpopulation's chance of successfully transitioning from a correctional institution to the community (Murphy et al., 2018; Butler et al., 2023).

Finding strategies that address health inequities and socioeconomic marginalization is imperative to uncover the reasons behind drug use, acute drug toxicity deaths, and poisonings amongst people who use drugs with a history of incarceration.

Societal factors

Housing

Many literature sources state how the drug toxicity crisis has tremendously affected people experiencing homelessness (McNeil et al., 2021; Friesen et al., 2021; Gomes et al., 2021; Gomes et al., 2022a; Health Canada, 2023e).

In Ontario, the increase of toxicity deaths is seen mainly in men; findings imply deaths appear in lower income neighbourhoods (Ontario Drug Policy Research Network & Public Health Ontario, 2023). Due to the impacts of the COVID-19 pandemic, Gomes, and colleagues (2021) state that nearly 1 in 10 opioid-related drug toxicity deaths in Ontario were among people experiencing homelessness. As such, one in seven acute drug toxicity deaths in Ontario were experienced in a shelter, supportive housing, or hotel provided as emergency settings for people experiencing housing instability or homelessness during the pandemic (Gomes et al., 2021; Friesen et al., 2021).

According to the Northern Policy Institute's *More than just a number: Addressing the Homelessness, Addiction and Mental Health Crisis in the North* (2022) report, in 2021, 66% of individuals experiencing homelessness in the Greater Sudbury area reported struggling with their mental health and 80% struggled with addictions (NPI, 2022). In the Manitoulin-Sudbury area, rates were 72% and 44% for mental health and addictions, respectively (NPI, 2022). People who use substances while experiencing homelessness endure overlapping systemic barriers including challenges accessing appropriate care, housing, and food, and impacts related to stigma (Magwood et al., 2020; CAMH, 2021a; Milaney et al., 2021; Bolinski et al., 2022; Bragazzi, 2021).

For example, a local 2018 point-in-time count reported 1 954 individuals who identified as either absolutely homeless, hidden homeless, or at-risk of homelessness; an additional 224 were dependent children under the age of 18, of whom participants had custody (Kauppi et al., 2018). Some of the top reasons reported in the point-in-time count were substance-use disorders along with job loss, inability to pay rent or mortgage, and unsafe housing conditions (Kauppi et al., 2018). In addition, there was a five-year wait time in 2020 for a one-bedroom subsidized unit in Greater Sudbury, and a wait list of over 1 000 residents for rent geared-to-income housing (City of Greater Sudbury, 2020). The availability of safe and affordable housing is a significant consideration for illicit drug consumption, which was exacerbated by the COVID-19 pandemic.

Poverty

Evidence clearly demonstrates that Canadians who are low income are more likely to die of an opioid-related poisoning, and those in poverty are nearly five times more likely to visit the emergency department due to opioids than wealthy Canadians (Alsabbagh et al., 2022). According to the 2021 census, 10% of the population of Greater Sudbury was living in poverty (as defined by the Low-Income Measure, after tax) in 2020 (Statistics Canada, 2023). Note that this proportion was reduced by the Canada Emergency Response Benefit (CERB), provided by the Government of Canada beginning March 15, 2020 (Statistics Canada, 2023).

Other findings include:

- Two-thirds (67.4%) of people who use drugs reported that they lived below the poverty line/low-income threshold (Public Health Sudbury & Districts, 2020).
    - 38.4% earned less than $10,000 in the previous year
    - 29.0% earned between $10,000 to $19,999
    - 11.6% earned between $20,000 to $29,999
    - 9.0% earned $30,000 or more
    - 8.9% reported having a regular job
    - 11.0% reported being temporarily employed
    - 11.0% were self-employed
- The most common source of income reported by people who use drugs was Ontario Works (OW) (42.6%) followed by:
    - 38.9% reported Ontario Disability Support Program (ODSP)
    - 14.7 % reported GST rebates
- Some respondents reported criminal activity as sources of income:
    - 21.6% reported selling drugs
    - 16.3% reported theft, robbery, or stealing
    - 9.5% reported each of the following activities: selling sex, cigarettes, or tobacco, and other criminal activities

Lack of wraparound services in northern and rural communities

The risk factors contributing to the higher mortality rates in Northern Ontario are complex and interconnected, stemming from an individual's experience related to the intersectionality of socio-demographic factors and the social determinants of health (Friesen et al., 2021; Public Health Ontario, 2020; CFMS, 2022; Ontario Drug Policy Research Network & Public Health Ontario, 2023).

For instance, a recent report published by the Ontario Drug Policy Research Network and Public Health Ontario (Public Health Ontario) argues, "higher substance-related death rates in the North likely reflect disparities in access to mental health and substance use treatment as well as harm reduction programs in more remote parts of the province, as well as the harms resulting from systemic social inequities and intergenerational trauma experienced by First Nations People,

which make up a large proportion of Northern Ontario communities" (Ontario Drug Policy Research Network & Public Health Ontario, 2023, p.11).

Moreover, Gomes and colleagues' 2021 report demonstrate that northern and rural areas, (including Sudbury and districts), have statistically significant rises in opioid-related death rates (Gomes et al., 2021). They argue that this is directly related to and "reflect lower availability of community-based services, which must cover large geographical areas during the pandemic that make it difficult to reach those at highest risk of opioid-related death" (Gomes et al., 2021, p. 21). The Northern Policy Institute (2022) also states that current services and programs in the North are not addressing the needs of individuals with concurrent mental health diagnosis, substance use disorders, and housing instability living in Northern Ontario communities.

These findings highlight the need to address a lack of wraparound services in northern and rural communities along with developing community-based amalgamated interventions that enhances accessibility of programs and services to ensure a continuum of care for people who use drugs in these communities (Friesen et al., 2021; Gomes et al., 2022a; CRISM, 2016; Russell et al., 2019; MHCC, 2023).

Systemic factors

Government laws and policies

The *Controlled Drugs and Substances Act* (CDSA; 1996) makes the possession, seeking, or obtaining an illicit substance a criminal offence. Punishment ranges from fines up to a lifetime in prison. It is necessary to understand the history of how this law came to be in order to understand the toxic drug crisis as it exists today.

Some sources state that "early drug legislation was rooted in moral panic and racism; cruel and unusual—and later found to be unconstitutional—sanctions (including corporal punishment) were included in these Acts, even for simple possession." (Office of the Provincial Health Officer, 2019, p. 9).

The information below summarizes a timeline of drug policy initiatives. A full timeline and visual of drug policy is included in Appendix A.

- **1908 to 1911:** In 1908, Canada's first narcotics law, the *Opium Act,* was passed, making it the first time drug prohibition came into effect. Of note, dealers could be sentenced to three years in prison or subjected to fines upon conviction. In 1911, the possession or sale of morphine, opium, cocaine, and eucaine was added to the renamed *Opium and Narcotics Drugs Act* as a result of the Shanghai Commission to ensure adequate law enforcement control (Office of the Provincial Health Officer, 2019; Owusu-Bempah & Luscombe, 2021; MacKay, 2018).

- **1911 to 1960:** Multiple amendments to the *Opium and Narcotics Drugs Act* were developed, adding 15 substances, including cannabis, to the act. Penalties for various offences, including possession of drug-use equipment and selling to a minor, were increased. Enforcement had more authority to search without restrictions or warrants.
- The smuggling of banned opioids was one consequence of these amendments. Unfortunately, this meant that using illicit substances subsequently became far more dangerous as adulterated supplies of injectables like heroin, morphine, and codeine became commonplace (Boyd & Norton, 2019).
- The increased difficulty in procuring drugs meant that the majority of people who used drugs suffered from withdrawal symptoms, communicable diseases due to hypodermic needle use, and life disruption due to the rising costs of supply. This shortage of supply was exacerbated during The Great Depression and Second World War, leading to more prevalent criminal and full-time drug seeking behaviours. The post-war public demand for treatment over punishment for people who use drugs swelled thanks to a growing recognition of the psychiatric disease model of addiction, the expansion of the welfare state, and a demographic shift to younger users within the roots of the 1960s counterculture (Boyd & Carter, 2014; Montigy, 2011).
- **1961:** The *Narcotic Control Act* was created, raising the maximum sentence from 14 years to 25 (similar to first- and second-degree murder) despite recognition of substance use as a public health issue. Canada also signed the *Single Convention on Narcotic Drugs;* the possession of controlled substances was now considered as a punishable offence (Office of the Provincial Health Officer, 2019).
- **1971 to 1973:** In 1971, Canada signed the *Convention on Psychotropic Substances* as well as *Le Dain Commission* which was formed in 1973 consisting of the inquiry into the non-medical use of drugs. The final report concluded that the criminalization of substances had caused more harm than the harm from the substances themselves. Moreover, the report included statements about evidence-based drug use and educational strategies and discouraged "fear-based approaches to drug use prevention" (Office of the Provincial Health Officer, 2019, p. 12). The report recommended the expansion of available methadone treatment although this was not adopted as the Department of Health's Special Joint Committee favoured complete discontinuation of all narcotics.
- **1974 to 1988:** In 1974, Bill S-19 was introduced to remove cannabis from the *Narcotic Control Act,* but the bill did not pass. In 1987, the Canadian Drug Strategy was formed with four pillars including enforcement, prevention, treatment, and harm reduction. Although, in 2007, the National Anti-Drug Strategy removed harm reduction as a pillar only to re-instate it again in 2016. In 1988, the UN General Assembly Special Session on Drugs released a

statement suggesting that they believed that the global war on drugs was causing more harm than drug use similar to Le Bain Commission in 1973.

- **1996:** Canada signed the *United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances***.** In addition, during this year, Health Canada approved controlled-release oxycodone (OxyContin) for the use of treating moderate pain. The risk of addiction in the original monograph was understated despite evidence to the contrary and unprecedented promotion to prescribers led to a dramatic shift in prescribing practices (Pappin et al., 2022; Van Zee, 2009).
- At the time of OxyContin's 2012 delisting in Canada, prescription opioids were the most common drug used among people who use drugs (Fischer & Keates, 2012). The delisting, unfortunately, did not correspond with a reduction in use, but a move to heroin and then fentanyl, a more potent and more easily concealed opioid. Thus, as was true in the 1920s, an absence of supply correlated with a shift to a more adulterated and toxic supply (Karamouzian et al., 2022). The shift to fentanyl ultimately resulted in a surge of opioid-related deaths across North America. Tragically, targeting one drug of choice for prohibition was not as effective as hoped, and the toxic drug crisis emerged in the aftermath of those decisions (Fischer et al., 2015).

The sharp increase in drug toxicity has triggered several ongoing policies and strategies across Canada from 1996 to present day. This includes the *Good Samaritan Drug Overdose Act* in 2017, the *Cannabis Act* in 2018, and injectable opioid agonist therapy in 2019 to name a few. As a result, the impact of the COVID-19 pandemic, and the coinciding toxic drug crisis may be viewed as a tragic culmination of well over 100 years of inconsistent and, at times, actively harmful approaches. In an effort to mitigate the damages of two national crises, the federal government granted multiple exemptions to the *Controlled Drugs and Substances Act* in 2020, giving access to communities that required urgent harm reduction services (Health Canada, 2020).

Criminalization

Sources suggest that prohibition-based drugs laws and policies, notably a criminal-justice based approach to substance use, have developed more health and social harms than good (Office of the Provincial Health Officer, 2019; BCCSU, 2019).

A statement on the decriminalization of substance use by the Centre of Addiction and Mental Health (2021b) states how the criminalization of substance has been counterproductive; in particular, it has caused social harms towards racialized communities, specifically the over-policing and over-incarcerations of Black and Indigenous Peoples (CAMH, 2021b). As such, it is recognized that criminalization is one of the largest contributors to stigma and that the toxic drug supply is a whole-of-society challenge, not a criminal issue (BCCDC, 2018).

The report, *Stopping the Harm: Decriminalization of people who use drugs in BC,* suggests that "if the intention of a prohibition-based system was to protect individuals from harms inherent to substance use, then this policy approach has significantly failed to achieve this goal at an individual or population level. Evidence shows that this approach has had the opposite effect and has substantially increased harms." (Office of the Provincial Health Officer, 2019, p. 18). Sources also suggest that criminalization is progressively identified as a structural determinant of health, impacting health and social outcomes for people who use drugs (Scher et al., 2023; Greer et al., 2022; Selfridge et al., 2020). Recognizing the need to remove mandatory criminal sanctions and replace them with harm reduction, treatment services, and educational preventive measures will help reduce the harms and risks related to the toxic drug supply (CCSA, 2018).

Stigma and discrimination

Stigma includes a set of negative attitudes, behaviours, and opinions that further isolates and marginalizes people who use drugs (Livingston, 2020; Health Canada, 2023e). Various forms of stigma exist, including self stigma (internalizing stigma, fear of being criticized), social stigma (community stereotypes, stigmatizing language), and structural stigma (policies that increase stigma and restrict the rights and opportunities of people who use drugs) (Livingston, 2020). Stigma can lead to more harm and punitive policies that are "woven into the fabric of health care institutions and systems" (Livingston, 2020, p.4; Office of the Provincial Health Officer, 2019).

People who use drugs face greater stigma when it is accompanied by other types of discrimination and oppression such as racism, sexism, classism, and homophobia to name a few (Pauly et al., 2017; Livingston, 2020). As such, prohibition-based policies intensify structural, social, and self stigma which in turn affects the willingness of people who use drugs to even access services, thus impacting their health and well-being and even perpetuating inequitable outcomes notably criminalization and prosecution (Public Health Ontario, 2020; BCCSU, 2022; CAPUD, 2019; Pauly et al., 2017).

The Provincial Health Officer of British Columbia states that stigma "negatively impacts the lives of people and the ability of some individuals to receive or access basic health (e.g. harm reduction, treatment) and social needs (e.g. housing, employment). Stigma influences public support for evidence-based strategies that save lives and link people to treatment, such as supervised consumption services. Additionally, system-level [structural] stigma compromises the quality of care received by an individual if they do access treatment." (Office of the Provincial Health Officer, 2019, p. 20).

For instance, in Northern Ontario, communities such as Sudbury have been disproportionately impacted by forms of stigma, specifically social stigma. Evidence from *Clients' experiences using a new supervised consumption service in Sudbury, ON* suggests that: "in many smaller communities, stigmatization of people who use drugs is prevalent and contributes to difficulties

securing community ‘buy-in’ for supervised consumption sites, especially considering community consultations are a federal and provincial application requirement. This often results in unsuccessful applications and subsequent limited uptake” (Ali et al., 2023, para. 3). Clients from Sudbury’s supervised consumption site stated they experienced social stigma related to visible public consumption, discarded paraphernalia, and not-in-my-backyard mentality which acts “as a deterrent to implementing evidence-based interventions” (Ali et al., 2023, para. 32). This form of stigma reinforces self-stigma and structural stigma and people who use drugs are thus discouraged from accessing services resulting in a lack of resources, fragmented care, poor quality of care, and a denial of care (Livingston, 2020).

Finding ways to address different forms of stigma is imperative to reduce negative stereotypes towards people who use drugs and the harmful association it has with impacting evidence-based interventions.

Factors contributing to drug toxicity

Contaminated drug supply

In recent years, considerable increases in acute drug toxicity deaths due to the unpredictable and unregulated toxic drug supply have been recognized in Ontario (Gomes et al., 2021; Gomes et al., 2022a; Gomes et al., 2023; Public Health Ontario, 2022). Officials are aware that the current drug supply is often adulterated with other substances, of known and unknown potency, in efforts to increase volume, enhance efforts, and for greater profits. The risks and harms resulting from the drug toxicity crisis are having a direct impact on people who use drugs, their families, and communities (PHAC, 2023).

Currently, drugs are tainted with a mix of substances: fentanyl, fentanyl analogues (e.g. carfentanil), stimulants, psychoactive adulterants such as benzodiazepines (e.g. etizolam, bromazolam, and flubromazepam), xylazine (known as horse tranquilizer), and other components with unknown potency that further exacerbates the risk of drug toxicity, thus impeding local, provincial, and national responses (Ontario Drug Policy Research Network & Public Health Ontario, 2023; Moore, K. M., & Huyer, D., 2023; CCSA, 2020; CCSA & CCENDU, 2020; Réseau ACCESS Network, 2022). The Canadian Centre on Substance Use and Addiction (2020) states how it is "common practice in the unregulated market to mix additional substances into drugs to add bulk or enhance the effects. It is also possible to unintentionally include contaminants as a by-product of the manufacturing process" (p.4). Therefore, this may result in substances containing other drugs of unknown quantity and potency which leads to accidental poisonings and deaths (CCSA, 2020).

Since the COVID-19 pandemic, there has been a significant increase in fatal and nonfatal poisonings associated with opioids particularly those containing fentanyl and fentanyl analogues (PHAC, 2023; Iacono et al., 2023; Gomes et al., 2022a; Friesen et al., 2021; Public Health Ontario, 2020). In addition, fatalities have nearly doubled since declaring the pandemic, partially in relation to the contamination of the drug supply (Gomes et al., 2023; PHAC, 2023). It was noted that in the 8,767 individuals who experienced an accidental drug toxicity death in Ontario from 2018 to 2021, 85.2% of deaths involved opioids (N=7467), 60.2% involved stimulants (N=5 276), 13.4% involved alcohol (N=1 177), and 8.6% involved benzodiazepines (N=754) (Ontario Drug Policy Research Network & Public Health Ontario, 2023).

Polysubstance use

As stated by an Ontario Drug Policy Research Network and Public Health Ontario report (2023), polysubstance use and the adulteration of the drug supply collectively "complicate(s) health care responses, particularly when multiple sedating substances are used together". Since the COVID-19 pandemic, fatalities in Ontario have been on the rise, largely due to polysubstance use—notably a mix of opioids and stimulants (e.g. cocaine and methamphetamine)—as well as a rise in sedatives such as benzodiazepines either taken intentionally or unexpectedly due to the contamination of the drug supply (Gomes et al., 2023; PHAC, 2023). These changes in the landscape of drug use often result in an escalation of substance use fatalities (Ontario Drug Policy Research Network & Public Health Ontario, 2023, p. 3; Konefal et al., 2022).

Polysubstance use creates additional complexities when the effectiveness of naloxone is reduced. Considering naloxone only reverses the impacts of opioids, in conjunction with polysubstance use and the adulteration of the drug supply, there is an impact on treatment options (e.g. opioid agonist therapy) and harm reduction approaches (CRISM, 2019; CCSA, 2020; Gomes et al., 2023; Moore, K. M., & Huyer, D., 2023; Kolla et al., 2022). Finding ways to mitigate harms and risks related to both opioids and non-opioid substances with evidence-informed best practices is imperative to reduce the number of poisonings and acute drug toxicity deaths in Ontario.

Inhalation

Evidence from various studies indicates that there has been an increase in acute drug toxicity deaths and poisonings related to pipe and foil inhalation practices during the COVID-19 pandemic. Specifically, toxicity deaths by inhalation have been recognized in various Canadian provinces such as Ontario, British Columbia, and Alberta (Gomes et al., 2021; Giliauskas, 2022; PHAC, 2023, Friesen et al., 2021; CFMS, 2022; Public Health Ontario, 2023; Speed et al., 2020). Prior to 2017, injection drug use was the most common method of consumption; however, inhalation appears to be rising and it is currently considered the more popular method for using substances in Canada (Parent et al., 2021, Bragazzi et al., 2021).

Due to the changing drug landscape, provincial and local studies state how people who inhale substances require further interventions, immediate strategies, and tailored approaches to reduce negative outcomes associated with non-injection drug routes (Giliauskas, 2022; Ali et al., 2023; Public Health Ontario, 2023). A report by Public Health Ontario and the Community Opioid/Overdose Capacity Building suggests how "historically, harm reduction research and programs have focused predominately on injection drug use and oral consumption. Consequently, people who use drugs by smoking/inhalation still face gaps in care as the field develops to further support their needs." (2023, p. 1). As such, multiple evaluation studies share

ways how supervised smoking sites can reduce a variety of harms, such as decreasing the number of discarded needles, stigma, hepatitis C infections, law enforcement interactions, and community violence when people who use drugs use in public (Giliauskas, 2022; Public Health Ontario; 2023).

Best practices to reduce harms and risks

Once again, a literature review was conducted to identify available current and emerging evidence, including best practices to reduce harms and risk associated with drug toxicity. As outlined in the previous section, the review of evidence gathered information from academic and scientific databases with a complementary search strategy to retrieve information from grey literature. Additionally, as noted, the review applies lens of a social-ecological model (SEM) to contextualize the interconnections between the individual, interpersonal, community, and societal factors that may contribute to both the problem and the potential solutions.

The best practices presented below outline recommendations relating to systemic change and collective action, treatment options, and harm reduction programming. All incorporate a range of preventative measures, innovative strategies, and adaptative solutions that can help mitigate the harms and risks related to drug use and drug toxicity. Health agencies, individuals with lived and living experience, families, communities, drug policy advisors, and academics unanimously call for an interdisciplinary-based approach of wraparound services to adequately address substance use.

Systemic change and collective action

Upstream prevention and protective factors

Prevention services occur on a continuum, often referred to as upstream and downstream. While downstream interventions tend to focus on individuals, upstream approaches focus on addressing the root causes of an issue through system level interventions that have the potential to impact an entire community (Minnesota Department of Health, 2022).

Focusing on opportunities to support upstream preventative measures and protective factors is crucial to delay the onset of substance use disorders, particularly during early adolescence, to ensure harms and risks are reduced (Iacono et al., 2023). It is important to recognize a range of risks factors related to substance use, such as poverty, mental illness, drug availability, harmful school environments, peer influence, housing instability, and trauma which can reinforce negative health outcomes (Health Canada, 2023e). Further, the *Canadian Drugs and Substances Strategy: Prevention and education* by Health Canada (2023) also states when youth use substances, they are setting up for life-long behaviours. The resulting substance use may harm

brain development and function, as well as increase their mental health challenges while there is also a lack of essential supports for them (Health Canada, 2023e).

Investing in community-based educational initiatives and outreach programs can be utilized to increase awareness of substance-related harms and reduce various risks factors (Health Canada, 2023e). This includes that ensuring positive protective factors are implemented and supported to help decrease harms and risks associated with substance use while responding to health inequities (Health Canada, 2023e). Examples of positive protective factors include physical safeguards, social involvement, safe neighbourhoods, favourable school surroundings, parental or caregiver engagement, housing stability and strong behavioural development (e.g. effective coping techniques and emotional management). In addition, targeting stigma, marginalization, and other related structural barriers when responding to social determinations of health and sociodemographic disparities in the community is critical (Livingston, 2020). Using comprehensive educational approaches can help children develop resiliency and positive behaviours which can in turn help guard against risk-taking behaviours such as substance use.

Peer-led engagement

The peer-led engagement process is an important consideration that must not be overlooked. Similar to the harm reduction movement itself, people who use drugs and community-led grassroot initiatives have launched numerous interventions, such as overdose prevention sites, needle syringe programs, and supervised consumption sites (Pauly et al., 2020). Evidence suggests that programs that are led by people with living and lived experience are more appealing to people who use drugs, particularly by those who have had negative experiences accessing traditional treatment and addiction services (Swanson, 2021; Pauly et al., 2020; Broadhead et al., 1998; Wood et al., 2003; McNeil et al., 2014; Grund et al., 1992). As a result, peer engagement in harm reduction services has the potential to make programming more equitable by fostering communication, building trust, increasing knowledge, and reducing stigma (Greer et al., 2016).

Multi-sectoral committees

Building community overdose response plans and evidence-based strategies to tackle the toxic drug crisis is a dedicated effort that requires a comprehensive and collaborative approach (Khorasheh et al., 2022; Pauly et al., 2017; Leece et al., 2019).

This requires support from numerous community partners, people with living and lived experience, and engagement from key stakeholders (Khorasheh et al., 2022; Leece et al., 2019). Literature sources state how strategies are commonly led by public health units along with collaborative supporting roles by multiple sectors and community partners, such as paramedics, health care professionals, police services, and other clinical representatives (Leece et al., 2019).

This work often involves organized structures (e.g. committees, advisory boards, task force, workgroups) which are guided by principles and practices to ensure an equitable and diversified representation of sectors is established and maintained (Khorasheh et al., 2022).

A provincial situational assessment by Khorasheh and colleagues (2022) found recurring needs and gaps within community approaches. These included evidence, data and information, operational factors, and partnerships, engagement, and collaboration. Additional support related to access, use, and communication of evidence on overdose and response strategies was also identified. "Current strategic planning processes, service coordination, standardization, and broader contextual factors reportedly affect the implementation/operation of community overdose response plans" (Khorasheh et al., 2022, para. 34).

Similarly, a scoping review by Leece and team (2019) shared how stakeholders identified three key implications when implementing a community overdose response planning initiative. The key implications for consideration include "addressing equity and stigma-related barriers towards people with lived experience of substance use; improving data collection to facilitate evaluation; and enhancing community partnerships by involving people with lived experience of substance use." (Leece et al., 2019, para. 6). Establishing centralized supports that ensure accountability, coordination, sustainability of response, and enhanced awareness priorities across local communities will help build a successful community response effort.

Community response efforts

Decriminalization

Various traditional strategies to address substance use have saved lives but there continues to be high levels of acute drug toxicity deaths and poisonings in Ontario with an overrepresentation among marginalized populations. Numerous public health agencies, individuals with lived and living experience, families, communities, drug policy advisors, academics, and community activist groups are sounding the alarm to review and re-evaluate the current prohibition-based policies in Canada (Office of the Provincial Health Officer, 2019).

As stated in a policy brief by the Canadian Centre on Substance Use and Addiction (2018), the term decriminalization incorporates numerous policies and practices that can be implemented in a tailored way to fit the needs of local communities and associated marginalized populations to address the context of drug use and acute drug toxicity. For example, applying targeted exemptions under section 56.1 of the *Controlled Drugs and Substances Act* (CDSA) while integrating harm reduction and treatment approaches are ways to decrease acute drug toxicity deaths and poisonings (Health Canada, 2018). These initiatives include prescription maintenance treatment programs (e.g. opioid agonist therapy and injectable opioid agonist therapy), safer

supply models, supervised consumption sites, drug checking services, psychological treatments, naloxone distribution, and outreach initiatives to name a few (CCSA, 2018).

Collective Action

Despite the outcomes of historical response interventions, it is important for community response efforts to acknowledge and address key considerations prior to exploring best practices attributed to decriminalization, treatment, and harm reduction efforts (BCCDC, 2018; CCSA, 2018; CAPUD, 2019; Atkinson, 2023; Haines et al., 2022; Pauly et al., 2020; CAPUD, 2019; Friesen et al., 2021; CAMH, 2021a; Magwood et al., 2020; Thumath et al., 2021; Maar et al., 2022; Public Health Ontario, 2020; BCCDC, 2017; CFMS, 2022; Khorasheh et al., 2022; Collins et al., 2018; CAMH, 2021b). Considerations are critical, ensuring evidence-based community response efforts, preventative measures, and best practices are applied in an equitable and successful way.

Key considerations include:

- recognizing the need to regularly engage with people with living and lived experience, known as peers or experiential workers (e.g. Indigenous and racialized communities), and other subpopulations involved in the entire planning and implementation process
- applying a continuum of care with an integration of services (e.g. wraparound services)
- ensuring local provision of services are health-equity focused, trauma-informed, and culturally safe with a gender-based analysis lens
- developing upstream preventative measures to delay the onset of substance use disorders during early adolescence to ensure harms and risks are reduced (e.g. positive protective factors)
- investing in ways to address the social determinants of health (e.g. basic income guarantee and rapid re-housing initiatives)
- acknowledging community capacity
- ensuring adaptable eligibility criteria (e.g. tailored services to marginalized populations)
- developing and monitoring low-thresholds services (e.g. preventing criminalization)
- responding to resource demands and supports
- establishing clear communication
- developing strong and meaningful local community partnerships guided by principles and practices to ensure an equitable and diversified representation of sectors is established
- supporting routine training of response staff
- understanding legislative and regulatory frameworks

- continually evaluating drug related policies and procedures due to the changing drug landscape (e.g. the impact of the *Good Samaritan Drug Overdose Act*)
- evaluating decriminalization measures implemented within the community (e.g. supervised consumption site regulations)
- routinely sharing provincial and federal data amongst partners (e.g. provincial law enforcement data)
- finding ways to address the negative labels associated with drug use to tackle stigmatization, (e.g. education, media campaigns, stigma reduction plans, and stigma-based training)
- promoting community awareness about inclusive language to enhance health equity and reduce health disparities among people who use drugs

Substance use care: Treatment

Opioid agonist therapy

Opioid agonist therapy (OAT) continues to be an intervention that demonstrates effective outcomes across many facets of opioid use disorder compared to abstinence-based models (Public Health Ontario, 2023; Morin et al., 2020; Magwood et al., 2020). Studies have shown how opioid agonist therapy decreases risk behaviours, criminal activity, and exposure to the toxic drug supply. Opioid agonist therapy has also been shown to increase retention rates, HIV and hepatitis C virus testing, mental and physical health, and improve access to some social services and health care supports (PHO, 2022; Bruneau et al., 2018; Magwood et al., 2020; Pijl, 2022). Specifically, opioid agonist therapy treatments were identified as a way to reduce opioid related poisonings and acute drug toxicity deaths particularly amongst people with a history of incarceration and people who experience homelessness (Public Health Ontario, 2022; Magwood et al., 2020; Friesen et al., 2021).

Opioid Agonist Therapy (OAT) medication treatments

Buprenorphine/naloxone (Suboxone)

Buprenorphine/naloxone is a partial agonist and is described as the preferred and recommended option of OAT compared to methadone and slow-release oral morphine (SROM) due to its superior safety profile, longer lasting effects, potential for take-home doses, lower rates of health care visits, and lower risk to public safety (Gomes et al., 2022a; Iacono et al., 2023; Bruneau et al., 2018; Franklyn et al., 2016; BCCSU, 2017; Gomes et al., 2022b). In Ontario, methadone is used more frequently but buprenorphine/naloxone use has more than tripled since it was introduced in 2012 (Gomes et al., 2022b).

Some studies, however, indicate how there is potential for unsuccessful outcomes with buprenorphine/naloxone due to the risk of patients with higher-intensity opiate (heroin) use disorder discontinuing treatment sooner than methadone (Gomes et al., 2022b; BCCSU; 2022; Public Health Ontario, 2022; Franklyn et al., 2016; Bruneau et al., 2018; Magwood et al., 2020). As such, buprenorphine may cause "intolerable symptoms during the partial opioid withdrawal that is required for initiation" and client characteristics must be taken into consideration (BCCSU, 2017, p. 24; BCCSU; 2022). Since 2021, various case studies state that micro-dosing induction can be favourable to reduce the risk of precipitated withdrawal; however, research evidence is scarce requiring additional clinical trials (BCCSU; 2022). As such, other buprenorphine formulations currently exist in Canada including Sublocade (administered and injected monthly) and Suboxone film (BCCSU; 2022).

Methadone

Methadone is a well-known therapy available in all provinces and territories for moderate to severe opioid-use disorder and requires individuals to regularly visit a pharmacy or other clinical settings to receive treatment. Methadone therapy was noted as a more useful option for people who use drugs that use heroin compared to buprenorphine/naloxone (CAMH, 2020).

A study by the Ontario Drug Policy Research Network, IC/ES and St. Michael's Unity Health Toronto (2022) found that people remain on methadone treatment for an average of nine months, compared to approximately three months for people who use drugs who only stay on buprenorphine/naloxone (Gomes et al., 2022b). Studies in British Columbia suggest similar findings, noting how buprenorphine/naloxone was twice as likely as methadone to be discontinued (Krebs et al., 2021). Other clinical trials and observational studies also state higher treatment retention rates with methadone (CADTH; 2016; Bharat et al., 2021; O'Conner et al., 2020). Although, it remains unclear if people who use drugs are discontinuing medications when transitioning to other forms of opioid agonist therapy or if other factors such as past opioid agonist therapy experiences, stigma, client characteristics, and severity of opioid use disorder are impacting retention rates. In addition, methadone has many disadvantages including higher risks of overdose, side effects, drug interactions, and longer lengths of time to achieve appropriate dosing durations (Bruneau et al., 2018; Gomes et al., 2022b).

During the pandemic, nearly two-thirds of people who experienced opioid-related deaths were individuals prescribed a median methadone dose of 70 mg (Gomes et al., 2022). Current opioid agonist therapy guidelines in Ontario however indicate how a stronger methadone dose of 100 mg or above is needed for people who intentionally or accidentally use fentanyl on a regular basis (Bromley et al., 2021; Gomes et al., 2022; BCCSU, 2022). Sources from Ontario and British Columbia explain that it is probable that people who use drugs are not given appropriate opioid agonist therapy dosing amounts which leads clients to utilize the unregulated supply which then increases their risks of poisonings and acute drug toxicity deaths (Gomes et al., 2022;

BCCSU, 2017). However, clinical guidelines state how initial doses of methadone requires a slower titration, specifically an increased dose of 5-10 mg every five to seven days, based on client characteristics, withdrawals, and cravings (CAMH, 2021a). Clinical recommendations state how it is imperative to reassess people who use drugs often during the first two weeks of methadone treatment because this is noted as the highest risk period of fatal overdoses (CAMH, 2021a). In addition, the regular time commitment associated with methadone treatment is recognized to be a difficult therapy option for some people who use drugs to accomplish, particularly construction workers, youth, and people experiencing homelessness (Gomes et al., 2022; Iacono et al., 2023; Bruneau et al., 2018; Magwood et al., 2020; Maar et al., 2022).

As noted in a report by Magwood and associates (2020), understanding client characteristics and preferences is important when considering traditional opioid agonist therapy options (e.g. buprenorphine/naloxone or methadone) specifically due to retention and poisoning risks. Further, focusing on social determinants of health is crucial to address issues related to adequate and equitable access to opioid agonist therapy care (Magwood et al., 2020; Bromley et al., 2021).

Supervised injectable opioid agonist treatment (siOAT)

Supervised injectable opioid agonist treatment (siOAT) is a relatively new and emerging intervention in Canada that allows people who use drugs access to injectable hydromorphone (HDM) or diacetylmorphine (DAM) under a supervised setting (Ministry of Mental Health and Addictions, 2021; Public Health Ontario, 2022; BCCSU, 2022; Public Health Ontario, 2017; BCCSU, 2017). This form of therapy demonstrates greater effectiveness and reduction in harms compared to conventional opioid agonist therapy—notably among people who use drugs using less unregulated supply—with a decrease in criminal activity and greater retention rates as well as improvements to overall psychiatric status compared to methadone therapy (Public Health Ontario, 2022; Public Health Ontario, 2017; BCCSU, 2017; Ministry of Mental Health and Addictions, 2021; Banerjee et al., 2020). This therapy, however, should be recognized as a second line treatment option for those who did not have positive outcomes with traditional opioid agonist therapy medications (e.g. buprenorphine/naloxone or methadone) and for individuals that struggle with chronic heroin use due to the greater risks of non-fatal poisonings and adverse reactions (Public Health Ontario, 2017; BCCSU, 2022; Public Health Ontario, 2022).

Opioid agonist therapy to address needs of people who use drugs

Various sources (CAMH, 2021a; Pijl et al., 2022; BCCDC, 2018; Friesen et al., 2021; Gomes et al., 2022; BCCDC, 2017; Bruneau et al., 2018; Magwood et al., 2020; Iacono et al., 2023; Maar et al., 2022) state how selected best practices can support tailored approaches to care. These approaches may address current gaps and barriers related to the delivery of opioid agonist therapy. The best practices include:

- integrating mental health, harm reduction and pharmacological care within opioid agonist therapy models
    - this will address some of the structural inequities experienced by subpopulations (e.g. stigma and concurrent disorders)
- improving or developing specialized or wraparound services such as:
    - transitional care (e.g. residential programs)
    - peer support programs
    - access to withdrawal management services (non-medical and medical approaches)
    - counselling and psychotherapy
    - Indigenous healing practices
    - non-opioid pain management strategies
    - access to all forms of opioid agonist therapy (e.g. stimulant, benzodiazepine, and injectable opioid agonist programs)
- implementing policy changes and lessening opioid agonist therapy entry and management demands
- collecting current opioid-use rates amongst subpopulations while ensuring regular collaboration with community partners and people with lived and living experience
- developing ideal dosing approaches with information sharing between clinical service providers
- establishing strategies, guidelines, research, and program evaluations to adapt approaches to acknowledge all people who use drugs unique needs which will enhance more successful opioid agonist therapy outcomes (e.g. Indigenous-led participatory action research)

Opioid agonist therapy for northern and rural communities

Individuals residing in northern and rural communities demonstrate additional barriers accessing opioid agonist therapy due to shortages of substance use and psychiatric services, geographical distances to care, financial supports to travel to appointments, limited awareness of local services, and inadequate access to culturally safe healing practices (Public Health Ontario, 2022; Friesen et al., 2021; Pijl et al., 2022; Bruneau et al., 2018; Gomes et al., 2021; Kolla et al., 2022).

Due to the COVID-19 pandemic, opioid agonist therapy services in Ontario were even more disrupted and that disruption may have been a factor associated with increased use of the toxic drug supply (Friesen et al., 2021). Changes to service delivery models, however, were quickly addressed during the pandemic to ensure a continuity of care with flexible modifications of

clinical guidelines. Modifications included providing some clients with home supplies ('carries') of medications and implementing telemedicine-based opioid agonist therapy appointments (Friesen et al., 2021). Since the implementation of these measures, it has been recommended to continue providing these approaches to service, when possible (Friesen et al., 2021; Public Health Ontario, 2023; Wendt et al., 2021; CAMH, 2021). Specifically, opioid agonist therapy delivered by telemedicine is noted as an effective and successful strategy (Eibl et al., 2017; Bolinski et al., 2022) with similar retention rates as in-person services (Franklyn et al., 2016).

Despite successful outcomes, it is recognized by some sources (Pijl, 2022; Wendt et al., 2021; MHCC, 2021, Morin et al., 2021) that some communities utilizing telemedicine approaches may experience the following barriers related to care. The barriers include:

- limited access to technology (e.g. lack of internet communication devices and training provided to service providers/users on the use of telemedicine solutions)
- poor internet quality (e.g. inadequate broadband internet coverage)
- unsupervised ingestion and potential for diversion of OAT medications
- difficulty with emotional connection during virtual sessions
- privacy concerns, (e.g. overcrowded homes)
- unsafe transport, storage, and dispensing of medications (e.g. in some northern, rural, and First Nations communities)

A national guideline for opioid agonist therapy and other literature sources share how collaborating with local resources—such as primary care providers, hospitals, emergency departments, pharmacy supports, nurse practitioners, community outreach initiatives and other harm reduction settings—may alleviate some barriers associated with telemedicine-based services particularly in northern and rural communities (CAMH, 2021a; Gomes et al., 2022; Pijl, 2022; Friesen et al., 2021). As a result, access to innovative, adaptive, and alternative delivery of opioid agonist therapy services specifically targeted to northern and rural areas that are holistic, and community based is an important step to deliver to this underserviced population (Friesen et al., 2021; Pijl et al., 2022; BCCDC, 2017; Bruneau et al., 2018; MHCC, 2021).

Mental health supports

Evidence also indicates that selected counselling and mental health services should be offered alongside various treatment methods. Many sources share how there are very high rates of psychiatric challenges among people who use drugs; however, many of these individuals show improvement in morbidity and mortality rates when they receive psychosocial and psychiatric treatment interventions (Morin et al., 2020; Bruneau et al., 2018).

Some articles share how Northern Ontario has mental health and addiction services, but they are fragmented and disconnected from each other (Leary et al., 2023; Morin et al., 2020; Russell et al., 2019). For instance, a cohort study by Morin and colleagues (2020) suggests that opioid agonist therapy patients with mental health disorders that live in northern and rural communities in Ontario have "a more complex profile of health care utilization" (p. 8) than patients in Southern Ontario. Therefore, services must address the root causes of addiction by using an intersectoral approach and by focusing on mental health and addiction supports as a whole (HQO, 2018).

The Mental Health Commission of Canada (2020) suggests: "structural stigma surfaces when policies and practices produce inequitable access to health care for people living with mental health and substance use challenges. This access is compromised in several ways: through the inequitable distribution of resources, the undertreatment of health problems, the withholding of services, and fragmented care. Structural stigma is also expressed when people systematically receive a lower quality of care" (Livingston, 2020, p. 2). Developing a widespread understanding of the broader mental health challenges that focuses on the individual, interpersonal, community, and societal factors of substance use disorders when approaching the toxic drug supply is crucial (Jalali et al., 2020).

The Mental Health Commission of Canada (2020) explains how various approaches can address structural stigma related to both mental health and substance use care including the following:

- improving behaviours, actions, skills, and perceptions of health care providers (e.g. with continuing education programs and training)
- enhancing the amalgamation and management of mental health and substance use services, (e.g. cross-training, integrated care models, services under one roof and the use of electronic health records)
- attaining parity for mental health and substance use outcomes (e.g. funding, resources, and insurance coverage equal to physical health services)
- increasing accessibility of efficient treatment options (e.g. quality and range of care)
- developing ways to evaluate and generate data related to structural stigma (e.g. quality-of-care indicators)
- promoting inclusion and engagement opportunities with people with living and lived experience in decision-making processes and planning efforts
- reviewing and reforming laws and policies with people with living and lived experience

In addition, the Canadian Centre on Substance Use and Addiction (2018) best practice guidelines state that "psychosocial interventions provided together with pharmacological treatment are effective approaches to treating opioid use disorder though it is unclear if certain psychosocial

therapies are more effective than others and if certain modalities correspond better to particular medical treatments." (Taha, 2018, p. 8). Some psychosocial supports noted within the *Best Practices across the Continuum of Care for the Treatment of Opioid Use Disorder* (2018) demonstrate a few benefits, including cognitive behavioural therapy (CBT), contingency management, behavioural couples therapy, and family training along with motivational interviewing and relapse prevention counselling (Taha et al., 2018).

Additional best practices related to mental health interventions, substance use, and pharmacological therapy were described as being effective when utilized together as a comprehensive treatment approach (Taha et al., 2018, BCCDC, 2018; Eibl et al., 2017, Maar et al., 2022, Marsh et al., 2022; Gomes et al., 2021; Iacono et al., 2023; Friesen et al., 2021; CAMH, 2021; Livingston, 2020; Pauly et al., 2017). Highlighted best practices include:

- integrating psychological needs assessments, (e.g. psychiatric history, care plans, supportive counselling, connection to family supports), and referrals to community programming to address social determinants of health, (e.g. housing, income, legal aid, drug coverage, peer, and cultural supports).
- ensuring psychiatric and counselling services focuses on cultural supports and trauma-informed practices, (e.g. trauma awareness for adverse life experiences, substance use and societal conditions, choice, collaboration, connection, safety, trustworthiness, skill-building and strength-based approaches)
- shifting treatment approaches to move beyond medical models towards a more holistic model of care that includes mental, emotional, social, and spiritual aspects at the systems level, (e.g. Indigenous-led care)
- acknowledging gaps in knowledge related to psychosocial treatment approaches and mental health supports for people with substance use disorders
- addressing upstream risk factors for substance-related harms by removing barriers to mental health treatment for youth and young adults
- implementing counselling services within opioid agonist therapy, safer supply models, and supervised consumption site frameworks
- developing telemedicine-based strategies to ensure mental health and addiction services are more accessible
- ensuring patients are assessed for additional concurrent substance use disorders and provide psychoeducation and treatment options that are appropriate for clients, (e.g. decision to evaluate the risks of prescribing benzodiazepines)
- recognizing current local mental health and addiction resources such as wait lists, financial barriers, and expertise when arranging community referrals

- improving people who use drugs access to human rights-based information, grievance procedures, and legal and advocacy services to address obstacles related to structural stigma

Substance use care: Harm reduction

Safer supply models

One of the more novel and controversial harm reduction approaches argues for the decriminalization, legalization, or dis-regulation of all controlled substance by reforming current restrictive drug policies. Sources suggest the need to explore the potential of integrating low-barrier safer supply frameworks to address drug toxicity (CAPUD, 2019; Public Health Ontario, 2022; Atkinson, 2023; CFMS; 2022; Foreman- Mackey et al., 2022; Kolla et al., 2022). Many sources note prohibition-based policies intensify stigma which affects the willingness of people who use drugs to even access services, impacting their health and well-being and even perpetuates inequitable outcomes, notably criminalization and prosecution (Public Health Ontario, 2022; Public Health Ontario, 2020; BCCSU, 2022; Austin et al., 2023).

Safer supply is defined as "the legal and regulated supply of drugs with mind/body altering properties that traditionally have been accessible only through the illicit drug market" (CAPUD, 2019, p. 4). As a result, safer supply programs do not focus on stopping drug use (compared to opioid agonist therapy or residential treatment programs) but are still committed to minimizing the harms and risks related to drug toxicity while providing connections to health and social services (Health Canada, 2023a; Ontario Drug Policy Research Network, 2023; Public Health Ontario, 2022; Kolla et al., 2022). This is considered a new intervention in Ontario that has started to gain more attention since the COVID-19 pandemic (Ontario Drug Policy Research Network, 2023).

As described by the Ontario Drug Policy Research Network (2023), the goals of safer opioid supply (SOS) programs "are to reduce the use of the unregulated drug supply and the corresponding risk of toxicities, while addressing the conditions that contribute to the socioeconomic and structural marginalization of people who use drugs, including material deprivation and stigma" (p. 5). Research shows that safer supply programs help decrease the rates of acute drug toxicity deaths, poisonings, hospital admissions, emergency room visits, criminal activity, infections, mental health hardships, health care costs, and the overall use of fentanyl and other illicit street substances (Health Canada, 2023a; Ontario Drug Policy Research Network, 2023; Gomes et al., 2022a; Public Health Ontario; 2022).

Safer supply strategies that either eliminate or reduces the overall criminalization of drug use while still mitigating harms and risks should be considered. Foreman-Mackey and colleagues (2022) suggest that alternative drug supplies that are "the exact substance or as close to

comparable as possible, of known quantity and quality" (p. 3) are needed to achieve successful outcomes associated with safer supply programs. As such, exploring prescriber-based models may impact people who use drugs' desire to utilize safer supply options that are similar to their current illicit drug supply without the toxic adulteration (Public Health Ontario, 2022; BCCDC, 2018; BCCSU; 2019).

Prescriber-based models of safer supply

Numerous evidence-based reports share how safer supply programs with prescriber-based models provide a predictable source of safer supply through opioid programs with prescribed hydromorphone tablets (HDM) and non-opioid programs with stimulants and benzodiazepines (Ontario Drug Policy Research Network, 2023; Health Canada, 2023a; Public Health Ontario, 2022). As described by Public Health Ontario (2022), the most common type of safer supply provided to clients in Canada is hydromorphone tablets along with some programs also supplying oxycodone, methadone, and slow-release oral morphine (SROM).

Some of these programs offer supervised consumption options with a provision of wraparound services for clients to provide enhanced health and social outcomes (Public Health Ontario; 2022). Moreover, a few programs have developed creative ways of dispensing medications with secure dispensing machines in an unsupervised manner (BCCDC, 2018). For instance, a project called MySafe operates in four cities across Canada, utilizing kiosks, similar to ATM machines, which distribute hydromorphone tablets supplied by pharmacists. Many safeguards are ensured to verify individuals' identities in conjunction with ways to carefully monitor patients via healthcare practitioner supports (Health Canada, 2021a). This type of program is a way to allow more flexibility and autonomy for people who use drugs (Public Health Ontario, 2022).

Another example of a prescriber-based safer supply model includes a public health order which was issued in British Columbia during 2020 that allows physicians and nurse practitioners the capacity to prescribe safer supply alternatives to reduce the harms and risks related to the toxic drug supply (British Columbia Ministry of Mental Health and Addictions, 2020). This order was intended to provide people who use drugs with further opportunities to connect with a continuum of care. Furthermore, evidence indicates that people who use drugs are more inclined to utilize safer supply options rather than more traditional treatment approaches, particularly when they have not found success with traditional approaches (Kolla et al., 2022; CAPUD, 2019).

Risks and challenges

Some studies report that there continue to be gaps in evidence on safer supply models, including information on specific factors that may impact program outcomes. Selected factors have been identified as possible risks impacting program effectiveness and adoption of services. The risks include factors such as a potential for diversion (e.g. medication sharing), unsupervised dosing (e.g. take-home doses), and continued client withdrawal resulting from not adequately titrated

with available medications or a restricted range of medications. Therefore, people who use drugs may return to the unregulated drug supply for preferred mind and body properties (CAPUD, 2019, p.4; BCCDC, 2018; Atkinson, 2023; Haines et al., 2022; Foreman-Mackey et al., 2022; ODPRN, 2023; Karamouzian et al., 2023; PHO, 2022).

Other risks include limited stimulant, benzodiazepine or drug checking test strip services, public perception, location of services (rural or remote vs. urban, mobile services), insufficient external counselling and an inequitable access to supports and tailored services for different subpopulations (e.g. Indigenous Peoples, youth, and people experiencing homelessness) (BCCDC, 2018; Atkinson, 2023; Haines et al., 2022; Foreman-Mackey et al., 2022; ODPRN, 2023; Karamouzian et al., 2023).

As an emerging area of work and approach for consideration, there is a clear need to continue to evaluate and review evidence on short and long-term outcomes of existing safer supply programs to better inform adoption or implementation of the model (PHO, 2022).

Considerations for practice

The Canadian Association of People Who Use Drugs (2019) and the Ministry of Mental Health and Addictions in their *Access to Prescribed Safer Supply in British Columbia: Policy Direction* (2021) document, outline various best practices and guiding principles if and when implementing safer supply interventions and frameworks with prescriber-based models.

Recommendations include offering safer supply options that offer take home doses rather than daily visits (e.g. will improve retention and satisfaction rates), a range of medications (e.g. mind/body altering proprieties) along with recognizing clients' current fentanyl tolerances and dosages. Evidence suggests that if safer supply doses are too low, then people will continue to use the unregulated drug supply. Alternatively, providing an artisanal version of opiates that is not as powerful as pharmaceutical grade opioids is necessary to consider as well (Canadian Association of People Who Use Drugs, 2019; Ministry of Mental Health and Addictions, 2021).

Other considerations include that people who use drugs can benefit from substitution programs like opioid agonist therapy and safer supply options that can be utilized in tandem with each other. The literature also reinforces the critical need to collaborate with people who use drugs to ensure programs and services are informed by living and lived experience. This will ensure the provision of services that are harm reduction oriented, health equity focused, and culturally safe, as well as services that incorporate a gender-based lens with integrated peer engagement opportunities (Canadian Association of People Who Use Drugs, 2019; Ministry of Mental Health and Addictions, 2021).

Importantly, strengthening regional expertise and protocols with multiple access points and connections with other health and social services with an interdisciplinary team-based approach is crucial for safer supply frameworks. As stated, with the risks and challenges of safer supply

models, establishing routine evaluation and monitoring of low-threshold safer supply programs is required to identify benefits, risks, and gaps for people who use drugs and communities as a whole (Canadian Association of People Who Use Drugs, 2019; Ministry of Mental Health and Addictions, 2021).

Supervised consumption sites

Supervised consumption sites (SCS) are a significant harm reduction measure with approximately 39 locations that have been granted an official exemption from the Government of Canada as of September 2023. Supervised consumption sites offer a range of services with nearly 2 600 visits a day with some sites seeing roughly 400 visits each day with an estimate of 340 000 unique clients that access supervised consumption services since 2017 (Health Canada, 2023d). Supervised consumption sites provide people who use drugs a clean and safe environment where individuals have enhanced access to safe and sterile equipment under supervision of a health care professional, a trained allied service provider, or a peer (i.e. person who formerly used or currently uses drugs) without the risk of incarceration. These sites have connected people who use drugs with up to 239 000 referrals to treatment programs, medical care services, mental health supports, and housing (Health Canada, 2023d).

As stated by Health Canada (2023d), supervised consumption sites "attended to around 49 000 overdoses and drug-related medical emergencies between 2017 and March 2023, with no reported fatalities on-site" (para. 3). For example, in Sudbury, the supervised consumption site called Minoogawbi, La Place, The Spot assisted nearly 470 unique clients representing 1 181 total visits, and 1 605 total consumptions since opening their doors in September 2022 (Ali et al., 2023; Réseau ACCESS Network, 2023). Furthermore, most of the substances that are consumed at supervised consumption sites are opioids (close to 70%). Fentanyl and hydromorphone/Dilaudid are the most consumed opioids along with stimulants such as methamphetamine also among the most popular (Health Canada, 2023d).

Outcomes of supervised consumption sites

Evaluation of supervised consumption sites consistently demonstrates the following outcomes (Health Canada, 2023).

- **reducing public drug use and discarded drug equipment**
- **reducing morbidity and mortality associated with accidental overdose**
- **reducing risk for infectious disease transmission (e.g. HIV)**
- **reducing strain on emergency medical services**

Despite supervised consumption sites having a proven track record of reducing mortality and morbidity caused by drug toxicity, a variety of barriers and gaps are noted as significant challenges when implementing and operating a supervised consumption site. These challenges "may further marginalize the populations supervised consumption sites were designed to reach and serve" (CCSA, 2020, p. 3).

One significant barrier includes the application process which consists of burdensome requirements for organizations relating to budget constraints, temporary funding, minimal human resources, community consultations, and jurisdictional supports (CCSA, 2020; Russell et al., 2020). As such, hardships related to scaling up services to reflect need have been recognized as a considerable gap when addressing the constant evolving and changing drug landscape (CCSA, 2020; Russell et al., 2020). For example, Sudbury's Supervised Consumption Site will close in December 2023 if the site does not receive provincial funding by the Ministry of Addictions and Mental Health. The site submitted their application over two years ago and has not received a response since then. Since opening its doors on September 28, 2022, The Spot has proved itself to be an indispensable resource to Sudbury. As of October 2023, The Spot had almost 1 000 visits and reversed all 15 overdoses that occurred onsite, saving lives (Réseau ACCESS Network, 2023). As such, it is critical to integrate priority services such as inhalation practices, drug checking services, peer-assisted programming and injection services, gender-specific services, access to safer supply models, primary care services, safer sex supports, and grief and trauma counselling, to name a few, within new supervised consumption site regulations (CCSA, 2020).

Inhalation practices

Literature sources suggest how implementing smoking sites within supervised consumption sites will enhance accessibility to people who use, but not inject, drugs by providing them with an outlet to lifesaving services (Public Health Ontario, 2023; Giliauskas, 2022; Speed et al., 2020 Atkinson, 2023; BCCDC, 2018).

According to several articles, people willing to utilize supervised inhalation sites include people experiencing homelessness, people of colour, sexual minorities, women, people living in smaller urban and rural centres, and youth (Giliauskas, 2022, Iacono et al., 2023; Speed et al., 2020; Public Health Ontario, 2023; Parent et al., 2021). People who inhale substances, however, are still at risk of negative physical health outcomes such as transmission of hepatitis C through equipment sharing along with pulmonary and respiratory problems (Gehring, 2022; Speed et al., 2020; Public Health Ontario, 2023). Thus, further opportunities to evaluate and research harms related to non-injection drug use, specifically inhalation practices, are important to ensure current

and appropriate harm reduction practices and services are implemented (Speed et al., 2020; Giliauskas, 2022).

A recent preliminary assessment of Sudbury's supervised consumption site describes how current services do not meet the needs of this population of people who use drugs (Ali et al., 2023). Participants noted that the site currently does not provide access to this common practice suggesting the need to find ways to alleviate barriers affiliated with this method of consumption (Ali et al., 2023). Similarly, a report by Parent and colleagues (2021) suggests that "those living in a small urban/rural centre had almost two and a half times the odds of smoking opioids when compared to those living in larger centres. This could be due to the lower availability and acceptability of needle distribution programs in these areas, where people who use drugs are more likely to be recognized and ostracized." (p. 6-7).

Furthermore, achieving inhalation services federally requires a legal federal exemption from Health Canada under section 56.1 of the *Controlled Drugs and Substances Act* (CDSA) (Giliauskas, 2022; Public Health Ontario, 2023; Health Canada, 2018). In Ontario, the situation and legislation differ for the province. The Ontario HIV Treatment Network describes how "in 2018, the provincial government terminated overdose prevention and supervised consumption models and replaced these with a new model called Consumption and Treatment Services (CTS); the number of sites was originally capped at 21. This new model does not allow for supervised inhalation" (Giliauskas, 2022, p. 6). Therefore, supervised consumptions sites funded by the province of Ontario will not allow for inhalation services as part of the funding model.

Alternatively, if an agency is privately funded, this rule does not apply. For example, the first supervised consumption site in Ontario that offers smoking services is Casey House, in Toronto. Casey House identifies as a registered charity and therefore does not operate under the provincial-funded consumption and treatment services model which does not currently allow for supervised inhalation services (Public Health Ontario, 2023). Federally, a legal exemption from Health Canada under section 56.1 of the Controlled Drugs and Substance Act (CDSA) requires significant time, extensive data, support from all levels of government, community input and partner guidance while also acknowledging current political priorities (Giliauskas, 2022; Public Health Ontario, 2023).

The literature cites (Public Health Ontario, 2023; Giliauskas, 2022; Friesen, 2021; Iacono et al., 2023; Gehring, 2022; BCCDC, 2017; Parent et al., 2021) how smoking services and sites must include the following best practices to produce effective outcomes:

- obtaining access to suitable ventilation systems (HVAC), sterile smoking supplies and equipment, adequate PPE, and adequate facility designs
    - develop an outdoor supervised smoking space (if indoor spaces are not a current option) to alleviate some issues related to accessibility for people who do not inject drugs

    - implement supervised consumption sites in an accessible location amalgamated with current harm reduction services that does not require significant travel demands (e.g. one-stop shop)
    - provide operational hours that are reflective of the lifestyles of people who use drugs
- ensuring leadership roles by people with lived and living experience in the entire implementation process to reflect currents needs and gaps (e.g. conducting focus groups, interviews, and advisory groups)
- promoting educational opportunities and advocacy initiatives about safer smoking practices
- referring to other safer smoking sites to help guide program planning, logistical considerations, and operation of services (e.g. Casey House in Toronto, Ontario)
- establishing research by utilizing qualitative approaches to explore intentions related drug use patterns, needs and lifestyle (e.g. smoking consumption)

Drug checking services

Drug checking services is another form of harm reduction demonstrated to decrease harms and risks related to the toxic drug supply (PHO, 2017; Maghsoudi et al., 2022). This intervention has been applied as a useful tool to inform people who use drugs and service providers if their current drug supply is contaminated with adulterants and other substances (Public Health Ontario, 2017). In addition, drug checking services can be utilized for issuing public health alerts and as a way of attracting people who do not regularly use harm reduction interventions (Public Health Ontario, 2017; Public Health Ontario, 2023). As such, there is emerging evidence that drug checking services can influence drug use behaviours (Maghsoudi et al., 2022).

As stated in *The Opioid Crisis in Canada* report released by the House of Commons Standing Committee on Health (2016), the Government of Canada currently "grants exemptions under the *Controlled Drugs and Substances Act* for the purposes of drug testing at supervised consumption sites" (Public Health Ontario, 2017, p. 1-2). However, due to the repercussions of COVID-19 on the unregulated drug supply, Health Canada issued an amended class exemption through Section 56 of the federal *Controlled Drugs and Substances Act*, ensuring that provinces and territories can develop immediate public health need sites (UPHNS).

This exemption has ensured a more accessible way for provinces to legally designate drug checking, without having to apply for a more involved supervised consumption site classification (BCCSU, 2022a). The local supervised consumption site, The Spot, in Sudbury, has received this exemption. As such, these newly introduced drug checking services have been used dozens of times since their inception in August, preventing the risk of drug poisonings and empowering people who use drugs to make informed decisions (Réseau ACCESS Network, 2023). If The Spot does not receive provincial funding, then this service will be discontinued as well.

Many lessons learned were articulated in a British Columbia Centre on Substance Use Drug Checking Implementation Guide (BCCSU, 2022a) along with evidence briefs from Public Health Ontario (2017; 2023) and the Canadian Centre of Substance Use and Addiction (2018) which highlight best practices related to drug checking services. These practices include:

- modifying community drug checking services to meet municipal needs and demands by
    - implementing services in neighbourhoods that provide a convenient, safe, and trustworthy space (e.g. option to use a mobile service), an episodic form of outreach (e.g. distributing drug testing strips) or pop-up sites targeted to specific subpopulations
    - ensuring strong partnerships with community service providers to support decision-making processes when addressing local challenges
    - expanding data analytic approaches to gain a perspective into the present toxic drug supply, (e.g. data can be used and shared with public health and other partners to respond to local risks)
    - developing partnerships with post-secondary institutions to support drug checking training, affirmatory testing, research projects and evaluations
    - conducting needs assessments to ensure sustainability and monitoring of drug checking services e.g. related to communications, stakeholder involvement, and mobilization of resources
- continuously engaging with peers with lived and living experience through
    - maintaining constant relationship building opportunities between people who use drugs and drug checking response staff
    - establishing advocacy groups and committees which include people who use drugs to guide implementation processes
    - utilizing guidance from people who use drugs to assist with the dissemination of key findings to the community, health care providers, and people who use drugs subpopulations
    - considering hiring people who use drugs (e.g. peers/experiential workers) as staff members to engage with others that normally do not access harm reduction programs

Naloxone administration and distribution

Naloxone programs are an important intervention to temporarily reverse the effects of an opioid poisoning in Canada (Health Canada, 2023b; CRISM, 2019; Moustaqim-Barrette et al., 2021). Many provinces and territories have ensured that naloxone kits are provided at various

locations—pharmacies, shelters, correctional facilities, addictions centres, health care clinics, and harm reduction sites—to ensure people at risk of experiencing an opioid poisoning or people at risk of witnessing an opioid poisoning can access naloxone (Health Canada, 2023b; CRISM, 2019). In Canada, all provinces and territories provide injectable naloxone kits to trained responders while Ontario, Quebec, and the Northwest Territories also distribute nasal sprays in take-home naloxone kits for the public (CRISM, 2019).

Nevertheless, an environmental scan by the Canadian Research Initiative on Substance Misuse (2019) shares various policy, operational, geographical, and knowledge barriers related to naloxone distribution. For example, drug criminalization was noted as one of the main policy and structural barriers related to naloxone distribution and administration practices. *The Good Samaritan Drug Overdose Act* ensures some legal protection of individuals who experience or witness an overdose and seek emergency help. If an individual or someone else calls 911 for help, the individuals present at the scene will not be charged with possession (Health Canada, 2021b). The scan states, however, that "there is still anecdotal evidence of individuals being stopped or arrested for simple possession or for carrying naloxone kits" which would make individuals apprehensive to seek medical assistance (CRISM, 2019, p. 17). Throughout the COVID-19 pandemic, Gomes and colleagues (2021) also reported a rise in acute toxicity deaths among people who use drugs without the use of naloxone by bystanders and first responders.

In addition, naloxone administration is even more complex due to the rise of acute drug toxicity deaths caused by benzodiazepines or xylazine laced opioids mixed within the drug supply causing prolonged sedative effects (CCSA & CCENDU, 2022; Moore, K. M., & Huyer, D., 2023). For example, poisonings from benzodiazepines (e.g. etizolam, bromazolam, and flubromazepam), and xylazine (known as horse tranquilizer) pose similar symptoms as an opioid (e.g. high-potency fentanyl and fentanyl analogues) poisoning, which complicates successful responses. Naloxone can reverse an opioid poisoning; however, it will not reverse a poisoning caused primarily by benzodiazepines or xylazine (Russell et al., 2023; Ontario Drug Policy Research Network, 2023; Gomes et al., 2023). Although, it is noted that administering naloxone is still recommended as an essential step given that these drugs "typically co-occur with opioids", additional harm reduction approaches are required in conjunction with naloxone to combat acute drug toxicity deaths resulting from the unregulated and volatile supply (CCSA & CCENDU, 2023, pg. 1; Moore, K. M., & Huyer, D., 2023; CRISM, 2019).

Numerous best practices have been identified and suggested to help mitigate barriers associated with naloxone distribution and administration related to drug poisonings and acute drug toxicity deaths (BCCDC, 2018; CRISM, 2019; Health Canada, 2023b; Moustaqim-Barrette et al., 2021; Wenger et al., 2022, Friesen et al., 2021; Iacono et al., 2023; BCCDC, 2018; Milaney et al., 2021; Bolinski et al., 2022; Gomes et al., 2022; Russell et al., 2019; BCCSU, 2022; CCSA & CCENDU, 2023; Scher et al., 2023). Best practices include:

- evaluating various aspects of the take home naloxone program
    - reviewing adequate naloxone dosage and potential adverse effects to address extremely potent synthetic opioids
    - understanding dose responses between intranasal naloxone and injectable naloxone
    - tracking naloxone kit expiration dates and the risks associated with using expired naloxone
    - expanding eligibility requirements to administer injectable naloxone
    - collecting strong monitoring and surveillance data
    - understanding the impacts of naloxone related to transportation and delivery systems in northern communities
    - identifying ideal storage of naloxone in various temperatures and how it can negatively impact naloxone medication
    - exploring mobile services that distribute naloxone kits to people who use drugs
    - recognizing the impacts of the *Good Samaritan Drug Overdose Act*
- improving accessibility and compulsory training for the administration and distribution of naloxone
    - ensuring needs-based distribution, adequate supply, no cost to obtain naloxone, and low-threshold services are continued within naloxone programs
    - enhancing naloxone distribution to all housing programs, healthcare, rural, northern, and First Nations communities, construction workers, law enforcement, peer support programs, and school settings (youth) to increase expansion of naloxone programming
    - establishing naloxone kit building events within the community and appropriate social services
    - addressing stigma in small communities when individuals obtain naloxone kits (e.g. privacy and confidentiality concerns at pharmacies or related clinics)
- implementing compulsory training and awareness about the toxic drug supply containing benzodiazepines and xylazine
    - increasing awareness of all of those involved in response efforts regarding naloxone administration and related poisoning symptoms corresponding to opioid-laced benzodiazepines (e.g. prolonged sedation) and xylazine toxicity (e.g. severe skin ulcers/infections and prolonged sedation)

- establishing educational campaigns with messages created by public health agencies in partnership with people who use drugs and subpopulations about unregulated benzodiazepines and xylazine contamination within drug supplies
- ensuring training efforts include information about the risks and harms associated with the use of opioids and benzodiazepines together (e.g. medical use, contaminated supply, or polysubstance use of benzodiazepines)

Outreach services

Various outreach interventions—episodic or site-specific outreach, peer outreach, or outreach by medical or social service providers—also help to reduce the harms and risks associated with drug toxicity (PHO, 2023a). Outreach services can include needle syringe programs, drug checking services, HIV/HCV testing, crisis support, and educational opportunities to name a few (Public Health Ontario, 2023a).

When considering best practices for outreach services (Public Health Ontario, 2023a; Gomes et al., 2021; McNeil et al., 2021), strategies include:

- ensuring ongoing collaboration with partner organizations to ensure timely services
- maintaining regular engagement with people who use drugs to understand their needs
- establishing relationship building opportunities to foster trust with people who use drugs
- ensuring proactive outreach with various subpopulations (e.g. younger women who use drugs)
- developing partnerships between safer supply programs and street-based outreach services

Additional outreach supports and opportunities, such as exploring how mobile and other low-barrier care may be an option when delivering harm reduction programs and services, is important (Bolinski, 2022; Atkinson, 2023). Mobile services can be utilized to increase accessibility of overdose prevention services by delivering services amongst northern, rural, and First Nation communities (BCCDC, 2018). For example, the Northern Policy Institute (2022) noted how establishing mandated mobile crisis intervention teams in Northern Ontario would be a unique way to address the crisis in the North (Northern Policy Institute, 2022).

Non-clinical supports and wraparound services

When considering best practices for treatment, prevention, or harm reduction in relation to substance use and overdose prevention, comprehensive interventions that work across multiple levels of the social-ecological model (SEM) are more likely to be successful (Minnesota Department of Health, 2022). Literature describes the need for non-clinical supports and

wraparound services to target specific people who use drugs in order mitigate the harms and risks related to poisonings and acute drug toxicity deaths in Ontario. Numerous subpopulations were identified as key audiences for non-clinical support and wraparound services such as Indigenous populations, construction workers and other trades, people experiencing poverty and homelessness, youth, women, and people with a history of incarceration.

Services specific to Indigenous populations

A report by the Chiefs of Ontario and Ontario Drug Policy Research Network (2021) explains that "the rate of opioid-related deaths among First Nations people in 2019 was approximately four times higher than non-First Nations people. Furthermore, First Nations people living outside of First Nations communities and those aged 44 years and younger are even more impacted by rising rates of opioid poisonings, suggesting that additional supports and access to harm reduction services are required in these populations" (p. 29).

Indigenous Peoples with substance use disorders urgently require culturally appropriate and Indigenous-led best practices to reduce the harms and risks related to the toxic drug supply (PHAC, 2023; Friesen et al, 2021; Pauly et al., 2017; Lavalley et al., 2018; Maar et al., 2022; Taha, 2018; BCCDC, 2018; Leece et al., 2019; COO & Ontario Drug Policy Research Network, 2021; Mashford-Pringle et al., 2021; Marsh et al., 2018; Marsh et al., 2022; Public Health Ontario, 2023; Sansone et al., 2022). Identified best practices include:

- implementing holistic healing practices, harm reduction supports, policies, and trauma-informed care that incorporate traditional Indigenous values and equitable frameworks with services located within First Nation communities and off reserve:
    - ensuring Indigenous-led treatment interventions to support the overall health and well-being of Indigenous Peoples who use drugs. Interventions should involve the physical, mental, emotional, and spiritual aspects of healing and address structural inequities and Indigenous determinants of health
    - incorporating traditional healing practices such as sharing circles, smudging, offerings of tobacco, family and land-based activities, ceremonial drumming, singing, teachings of the medicine wheel, two-eyed seeing approaches, and sweat lodge ceremonies guided by community Elders
    - offering inclusive care by ensuring culturally safe and anti-colonial approaches are led by Indigenous Peoples, specifically meaningful engagement opportunities with Indigenous Peoples with lived substance-use experience, (e.g. Indigenous engagement opportunities in planning processes, programming, and resources)

- recognizing the immediate need for First Nation communities to gain ownership, control, access, and possession (OCAP principles) of their own data to develop culturally informed and evidence-based processes related to OUD

Services specific to construction workers and other trades

Health Canada suggests that 30% to 50% of male trade workers experience higher acute drug toxicity deaths compared to other sectors of work (Health Canada, 2023f; PHAC, 2023). As a result, the Canadian Centre on Substance Use and Addiction (CCSA) and Health Canada's *Opioid Response Team Toolkit* explains: "it is common for people in these types of jobs to experience work-related injuries, stress, and pain. They may not have or know where to find the resources they need to take care of these issues." (p. 1). Additionally, workplace risks factors—shift work, long hours, injury, remote work, workplace culture, and stressful work conditions—may escalate the chances of trade workers using substances.

In British Columbia, more than half of people (55%) who experienced opioid-related toxicity deaths were employed in the trades and transport industry (British Columbia Coroners Service, 2018). In Ontario, Gomes and colleagues (2021) note that one-third of acute drug toxicity deaths involve individuals employed within the construction industry and deaths occurred primarily in private dwellings (Gomes et al., 2021). Moreover, injury and pain were associated with nearly 80% of construction workers specifically five years prior to workers experiencing an acute drug toxicity death (Gomes et al., 2022a).

This pattern may be due to the strenuous physical demands of their occupations along with the overall risk of injury and associated pain (Jalali et al., 2020; Farnan et al., 2023; Gomes et al., 2021, Gomes et al., 2022a). Various structural barriers to care were also noted, such as mental health challenges, stigma, lack of paid sick leave, impacts due to the sporadic nature of their work, and apprehension seeking treatment (e.g. opioid agonist therapy) due to stigma or potential consequences from their employer (Gomes et al., 2022a).

Consideration must be given to best practices that increase accessibility and reduce harms associated with the toxic drug supply related to construction workers and other trades (Gomes et al., 2022; Farnan et al., 2023; British Columbia Coroners Service, 2018; HWC, 2022; the Tailgate Tool Kit, 2023; Health Canada, 2023f; PHAC, 2023).

Example: *The Tailgate Toolkit Project*

Founded in British Columbia, *The Tailgate Toolkit Project* is a program that increases access to harm reduction services with targeted programming specific to construction workers. This toolkit includes introductory discussions about the toxic drug supply, supervisor training and regional resources (the Tailgate Tool Kit, 2023).

Additional best practices include:

- increasing accessibility to low-barrier treatment options and services:
    - implementing the use of buprenorphine-naloxone opioid agonist therapy treatment e.g. this form of therapy does not always require daily visits to receive treatment medication
    - exploring safer supply programs and harm reduction service options to meet specific needs of construction workers and other trades (e.g. hours of operation)
- enhancing onsite workplace culture (e.g. camps):
    - evaluating drug-related policies e.g. drug testing, impacts on job security, and written return to work policies (second chance programs)
    - mitigating policy issues associated with disclosing drug-related challenges within the workplace
    - relying consistent messaging to address stigma and stereotyping within in the workplace (e.g. fear of job loss)
    - implementing insurance coverage for non-opioid pain treatments, recovery treatments, referrals, counselling, and opioid prescription medications
- offering targeted training and educational opportunities:
    - creating educational materials about mental health, substance use, and signs of impairment tailored to construction workers and other trades
    - establishing learning opportunities that are specific to the subpopulation (e.g. age, trade, job history, childhood, gender, culture) with training modules
    - ensuring tailored naloxone distribution and training programs
    - encouraging a buddy system or peer mentorship program within the workplace
    - developing health and safety strategies for workers to promote injury prevention practices
    - developing pain management strategies to address structural barriers to care (e.g. rehabilitation)
- conducting research to address the lack of information regarding the reasons why people working in the construction industry in Ontario have higher rates of acute drug toxicity deaths:
    - engaging with policy makers, health providers, and trades groups to develop programs to prevent the risks and associated harms among this population

- determining recommendations about ways to increase connections to care and how to engage in local partnerships with construction and trades worker groups

Services specific to people experiencing poverty and homelessness

Milaney and team (2021) state how housing is "a crucial social determinant of health and a lack of housing, or being unstably housed, is associated with mental health concerns, physical health problems, trauma, greater mortality rates, and substance use disorders" (pg. 2).

Locally, people experiencing absolute homelessness and drug toxicity was evident throughout the COVID-19 pandemic. In Sudbury, there were 165 individuals and 69 homeless encampments placed across six different locations (Greater City of Sudbury Encampment and Action Plan, 2021). This highlights the need for additional housing and recovery-oriented models such as Housing First which was described as a way to improve the health and well-being of this subpopulation (Milaney et al., 2021).

Furthermore, a study about navigating post-eviction drug use in Vancouver's Downtown Eastside, indicates how housing, particularly eviction, can impact drug-related outcomes as well (McNeil, 2021). The study explains how the drug toxicity crisis has affected the structurally vulnerable, including "those rendered more vulnerable to suffering due to their marginal positions within social hierarchies stemming from the intersection of structural inequities (e.g. poverty, homelessness, drug criminalization) and discrimination (e.g. racism, sexism, classism)." (p. 2). Due to recent evictions, study participants were not able to use substances in a private setting resulting in people using substances in public spaces. These spatial practices were then obstructed resulting in rushed drug consumption to manage withdrawals while trying to avoid drug scene violence and policing which, in turn, increased susceptibility to overdoses, poisonings, and infections (McNeil, 2021).

The following best practices were noted as effective approaches to reduce the harms and risks related to people experiencing poverty and homelessness (BCCDC, 2018; CAMH, 2021; Milaney et al., 2021; McNeil, 2021; BCCDC, 2017). They include:

- ensuring services incorporate a harm reduction and pharmacological approach that can be included within housing programs:
    - establishing mandated naloxone training, peer/street-based outreach programs, supervised consumption services, and safer supply initiatives
    - exploring the option of harm reduction approaches within emergency shelters, supportive housing, and mobile outreach programs to ensure that responses are more adaptable for people experiencing various forms of homelessness, poverty, and substance use

- implementing ways to focus on structural barriers and upstream efforts with research, surveillance, and evaluation opportunities, for example searching other ways of supplying income assistance to people who use drugs, particularly those who experience homelessness or precarious housing, which will assist in preventing dramatic increases in fatal and non-fatal acute drug toxicity events around the same time
- focusing on housing solutions and policy responses:
    - ensuring rapid rehousing interventions
    - implementing anti-eviction policies
    - investing in affordable housing
    - building capacity of health and social service providers
    - allocating appropriate resources to relevant structural factors to lead to better health and social outcomes for this subpopulation

Services specific to youth

Based on findings, age is among one factor correlated with opioid-related deaths. Sources of evidence acknowledge that youth may be unfamiliar with community programs and services and may find it difficult connecting with these offerings such as harm reduction, treatment, and outreach services (Iacono et al., 2023; BCCDC, 2018; Speed et al., 2020; Russell et al., 2019).

For instance, rates of youth accessing treatment are decreasing including opioid agonist therapy (OAT) and residential treatment for opioid use disorder (OUD) (Iacono et al., 2023). As explained in the *Opioid Toxicity and Access to Treatment among Adolescents and Young Adults in Ontario* report (2023), "from Q2, 2014 to Q2, 2021, the rate of individuals receiving OAT decreased by more than half, while opioid toxicity ED visit rates more than quadrupled and deaths tripled among adolescents and young adults." (pg. 24). On the contrary, it was noted that some health providers may be apprehensive prescribing treatments to youth due to the lack of educational training materials and information associated with this population, particularly with opioid agonist therapy treatments (Iacono et al., 2023).

In addition to services tailored to youth treatment, harm reduction, and outreach, evidence shows that a number of protective factors have been identified as helping to prevent youth from engaging in substance use. These protective factors include strong parental or family engagement and relationships, parental monitoring and disapproval of substance use, school connectedness, and academic success (CDC, 2022). Such upstream primary prevention approaches, aimed at addressing the root causes of youth substance use to delay or prevent it, yield the largest impact on the health care system, the greatest return on investment, and offer a broader reach than approaches that focus solely on addressing concerns at the individual level (Cicci, Mongeon, Bennett & Bradshaw, 2023). Upstream prevention strategies support the reduction of

vulnerabilities and increase in the resilience of populations and individuals when they face emergencies and crises (Cicci et al., 2023).

Many best practices were identified to prevent or delay substance use among youth and to reduce harms and risks related to the toxic drug supply (Iacono et al., 2023; BCCDC, 2018; Speed et al., 2020; Russell et al., 2019; Nairen et al., 2022; Cicci et al., 2023). These include:

- establishing youth targeted and low-threshold services to address youth specific needs
    - developing drop-in centres or emergency shelters tailored to youth with wraparound services
    - accelerating connections to medical assessments, treatment, counselling, and peer support programs
    - increasing education about the risks of polysubstance use, e.g. impacts of high potency benzodiazepines and the use of cocaine and methamphetamine
    - establishing ways to address stigma and accessibility obstacles related to opioid agonist therapy and other services
    - ensuring naloxone training is established in schools and peer support programs
    - integrating youth in consultation sessions to better understand their needs, gaps, and demands to improve the effectiveness of youth programs and services
    - including mental health service provisions to support a continuum of care approach, e.g. safe and inclusive spaces
    - incorporating campaigns about youth using substances and perceptions around pharmaceutical treatment for opioid use disorder and harm reduction services
- developing upstream preventative measures to reduce the onset of substance use (and opioid use disorder) during early adolescence and to ensure harms and risks are reduced:
    - building resilience and protective factors as part of a comprehensive prevention approach including parental and family engagement, parental monitoring, school connectedness, and academic success
    - researching novel youth specialized interventions and treatments
    - researching the integration of family, peers, and partners in treatment and harm reduction interventions
    - researching the effects of supervised consumption policies amongst youth and other populations of people who use drugs, e.g. age restriction accessing services

Services specific to women

Prior to the pandemic, women who use drugs and gender-diverse persons were noted as a subpopulation that did not experience high drug toxicity rates compared to their gender counterparts. If women who use drugs did experience acute drug toxicity, it would most likely involve oxycodone, morphine, and hydromorphone with a mix of non-opioid prescription drugs such as benzodiazepines, antihistamines, and antidepressants (Canadian HIV/Aids Legal Network, 2020; Macleod et al., 2021).

A rapid review of the literature by Public Health Ontario (2022) shares how "women were also more likely than men to avoid harm reduction and treatment services due to fear of interaction with the child welfare system. Additionally, women who use opioids experienced gendered violence, including sexual, emotional, and physical assault, both outside and inside of harm reduction services. Further, opioid-related deaths were almost three times as likely to be deemed suicides in women compared to men" (pg. 2). Women, specifically racialized women, are also more at risk of encountering stigma along with the stereotyping associated with drug use mainly because of the detrimental label of being perceived an incapable caregiver (Austin et al., 2023; Thumath et al., 2021).

For example, the literature indicates that women who use drugs and experience child removal practices, particularly Indigenous women, have a higher risk of overdose (55%). Further, Indigenous women experience twice the odds of overdose compared to non-Indigenous women (Thumath et al., 2021). Given the patterns of avoidance of seeking treatment and accessing services, research into women who use drugs is limited and has concentrated mainly on outcomes related to parenting, pregnancy, and neonatal well-being (Macleod et al., 2021; Public Health Ontario, 2022).

Based on the available evidence, some best practices for women who use drugs were identified as ways to reduce harms and risks related to the toxic drug supply (Gomes et al., 2021; Public Health Ontario, 2022; Austin et al., 2023; Canadian HIV/Aids Legal Network, 2020; Thumath et al., 2021; Speed et al., 2020). These include:

- dedicating flexible outreach initiatives with enhanced social structures, training and strategic planning of harm reduction and treatment services:
    - including women-only hours of operation with access to sexual/reproductive services, hygiene, trauma-informed services, mental health supports, childcare options (e.g. accessible for women with children), culturally appropriate options of care, drug counselling, and supports that address the impacts of violence and homelessness
    - incorporating mobile outreach options to combat the risks associated with gender-based violence

- focusing on structural and societal elements to address gender inequalities such as promoting supportive spaces, and improving community initiatives, e.g. health promotion public policy
- engaging with women with lived experience to lead harm reduction services to challenge stigma and stereotyping
- recognizing how women who use drugs are more likely to experience an acute drug toxicity death related to a mix of opioids with antidepressants, benzodiazepines, antipsychotics, and antihistamines which can impact the type of harm reduction services required for this subpopulation

- developing research and policy work on the impacts of various systemic barriers faced by women who use drugs:
  - evaluating the impacts related to the increase of acute drug toxicity deaths specific to women who use drugs such as child removal practices, sex work, criminal justice involvement, and women living with HIV
  - exploring ways to address the structural barriers and social determinants of health related to opioid use and non-opioid drug toxicity amongst women including factors such as housing, poverty, stigma, mental health challenges, physical and sexual violence, racism, colonialism, lack of services, and repressive laws and policies
  - studying subpopulations of women who use opioids, such as ethnically diverse women, gender-diverse persons, Indigenous women, and women living in rural areas
  - evaluating pre-existing harm reduction service policies, (e.g. naloxone distribution or supervised consumption site policies) to ensure women are not being excluded from services if they are pregnant or have children with them

Services specific to people with a history of incarceration

Increasing our understanding of the risks associated with various subpopulations is important to target response strategies and upstream interventions (van Draanen et al., 2020). A recent study in B.C. found that people who have a history of incarceration are 4.1 times more likely to experience death from acute drug toxicity compared with people who do not have a history of incarceration (Gan et al., 2020; Gan et al., 2019). Another B.C. study found that most acute drug toxicity deaths occurred *more than two weeks* post release while non-fatal drug toxicity events occurred *within* the first two weeks of community integration (Kinner et al., 2021).

As such, literature sources explain how the rise in acute drug toxicity deaths in this group are particularly due to the reduction of drug use in prison which then impacts tolerance upon release (Butler et al., 2023; Kinner at al., 2021; Groot et al., 2016). Moreover, an Ontario study by

Butler and team (2023) notes that unstable supply, stigma, and the fact that people who use drugs "may have lost access to their trusted drug supplier" (p. 4) are contributing factors to consider.

Furthermore, an interesting finding explains that even though men experience higher rates of incarceration, acute drug toxicity deaths post release are higher amongst women compared to men in Ontario (Groot et al., 2016; Thumath et al., 2021; Butler et al., 2023). Numerous studies demonstrate how women in prison experience diverse barriers due to concurrent mental health and substance use disorders, suicide attempts, self-harm, and experiences with trauma along with a lack of adequate services and supportive environments (Butler et al., 2023, Office of the Provincial Health Officer, 2019; Groot et al., 2016).

The following best practices were identified as ways to mitigate harms related to fatal and non-fatal acute drug toxicity among people with a history of incarceration (Brinkley-Ruinstein et al., 2018; Groot et al., 2016; Butler et al., 2023; Kinner et al., 2020; Murphy et al., 2018). These practices include:

- increasing access to opioid use disorder treatment medications, safer supply prescribing, harm reduction strategies, substance-related educational opportunities, and naloxone distribution in prisons:
    - must be made accessible to this subpopulation during incarceration and community reintegration periods
    - must involve consistent planning and intervention pre-and post-release
- targeting structural factors with enhanced strategies to prevent untimely acute drug toxicity deaths
    - focusing on the highest-risk period of drug toxicity deaths (e.g. two weeks after release) to ensure evidence-based preventative measures and continuity of care are in place with a focus on health inequities, (e.g. housing, medical care, social supports, employment, food insecurity, and access to treatment services to address vulnerabilities upon release)
    - integrating gender-based care tailored to women in prison and post release
    - improving chronic pain management strategies, mental health, and case management opportunities to reduce risks of hospitalization, death, and re-incarceration
- enhancing data surveillance and monitoring mechanisms of this subpopulation to guide preventative and treatment opportunities within prisons and post release

Local services and supports

Locally, many community partners provide unique and coordinated services to help reduce the impacts of drug use or misuse in our community. Echoing the findings found in the literature, the following programs and services offer supports across Greater Sudbury and surrounding areas, including nearby Indigenous communities, to reduce harms from toxic drug use. Please note that while this is a comprehensive list, it is possible that other, lesser-known services exist beyond those listed below and, that individuals may choose to seek services outside of Greater Sudbury.

Treatment services

Opioid agonist therapy (OAT)

Opioid agonist therapy is a common treatment option to reduce the impacts related to opioid use disorders. Various medication assisted treatment clinics are available in the Sudbury area including Ontario Addiction Treatment Centre (OATC) Sudbury, VitaHeal, Northwood Recovery, trueNorth Addiction Medicine Program and Recovery North. Most clinics provide methadone treatment and suboxone treatment (e.g. buprenorphine/naloxone) along with two clinics that offers Sublocade treatment (e.g. injectable form of buprenorphine), benzodiazepine taper, stimulant replacement therapy, and Kadian Treatment (e.g. form of oral morphine). Additionally, some opioid agonist therapy (OAT) clinics have established wraparound services, providing access to services ranging from hepatitis C screening and treatment, addiction counselling, traditional First Nations counsellor support, Ontario Works Contact support, child protection services to the provision of safe use supplies, referrals, and naloxone kits.

Residential treatment programs

Residential treatment programs are limited in Greater Sudbury; however, Monarch Recovery Services provides numerous residential and rehabilitative treatment services, rent subsidy, case management, drop-in programs, and Indigenous aftercare programs specialized for women and men. Monarch Recovery Services include the following programs:

- Men's Aftercare: This five-bed abstinence-based program includes geared to income residential accommodations with staffing five days a week. The program incorporates rehabilitative services to support recovery and abstinence from alcohol and other drugs.
- Men's Day Treatment: This five-week harm reduction-based intensive is for clients aged 16 and older with substance use challenges. The program integrates an addiction counsellor,

group sessions, psychoeducational, and skill building activities related to coping mechanisms.

- Men's Recovery Home: This abstinence-based residential program includes 18 beds, 24/7 staffing, and stays for up to six months for individuals aged 16 and older. Clients must be detoxified from all substances for at least three days. Clients develop their own service plans with the commitment to sobriety throughout their daily life.
- Multifunction Beds Program WMS 2: This program has six beds to accommodate women and men who are aged 16 and older for a short-term withdrawal and stabilization stay. The program supports clients who are on a stable and adequate dose of opioid agonist therapy (OAT). The program does not accept clients who are experiencing acute withdrawal or those who have a pre-existing medical condition or psychiatric needs that exceed current capacity.
- Women's Treatment: This abstinence-based residential program includes a facility with 16 beds and full-time staffing. The five-week treatment program, for clients that are aged 16 and older, supports the goal of abstinence with group therapy, counselling, life skills, psychoeducational activities, and self-help meetings.
- Women's Aftercare: This abstinence-based residential program for clients aged 18 and older includes supportive housing accommodations with staffing five days a week. The program has two apartments, shared living spaces, and rent geared to income along with stays that may last four to eight months. An outpatient abstinence and harm reduction-based program for clients 16 and older is also included so those who live outside of the home can access services.
- Pregnancy/Parenting Outreach program: This harm reduction-based program includes community case management for women who are expecting and for parents that have children under the age of six. This program includes addiction assessment, in-home counselling, educational opportunities, and harm reduction approaches of treatment.
- Addiction Supportive Housing Program: This harm reduction-based program incorporates a rent subsidy for clients that are 18 and older. This program consists of addiction assessment, in-home counselling, educational opportunities, and harm reduction approaches to treatment.

Additionally, Canadian Mental Health Association's Harm Reduction Home Residential Program, called Healing with Hope, works to support individuals who are homeless or at risk of homelessness and who are also impacted by alcohol dependence. The program provides access to a managed alcohol program where individuals are supported with housing and addressing primary care and mental health needs.

Indigenous treatment services

While not located within Greater Sudbury proper, a number of local Indigenous treatment services apply Indigenous-based healing approaches for the treatment of mental health and addictions. According to the First Nations Health Authority, land-based treatment and healing takes place when Indigenous Peoples return or reconnect to the land while utilizing supports to relearn, revitalize, and reclaim their traditional wellness practices (First Nations Health Authority, 2023).

- Gwekwaadziwin Miikan Youth Mental Health Addiction program: This is a residential land-based treatment program aimed at addressing the needs of Indigenous youth and young adults (aged 19 and older) facing addiction and mental health issues. The program is located on Manitoulin Island and is a collaborative effort between six First Nations communities with local and provincial supports. This program connects youth and young adults on their journey towards recovery, wellness, and balance, while supporting their transition back into the community. The service incorporates land-based treatment, live-in treatment, and aftercare services with a focus on the emotional, physical, intellectual, and spiritual growth of healing. The program incorporates traditional teachings and therapeutic factors with educational opportunities, life skills, experiential knowledge, and care from an Indigenous perspective.
- Ngwaagan Gamig Recovery Centre: The Rainbow Lodge is situated in the community of Wikwemikong and offers a range of services rooted in the Seven Grandfather Teachings (wisdom, love, respect, bravery, honesty, humility, and truth).
    - Residential or Day Treatment Program: This addiction treatment program is a four-week program for males and females aged 18 years and older. The service includes cognitive behavioural therapy (CBT), cultural teachings, and educational sessions while integrating the Seven Grandfather Teachings throughout program initiatives.
    - Out-Patient Treatment Program: This program serves individuals before and after their residential treatment program stay. It provides pre-treatment service, treatment readiness, transportation to detox and follow-up services, referrals to other facilities, aftercare planning, intake, and assessments.
    - Community engagement and awareness: The organization delivers multiple sessions to the community, including Elder group support, family member support groups, drug awareness and education, self-awareness and character strengths, the forgiveness journey, health promotion workshops, and cannabis education.
- Benbowopka Treatment Centre: This culturally based residential treatment centre serves community members across seven First Nation communities that struggle with substance use.

This program, located in Blind River and operated by the North Shore Tribal Council, focuses on abstinence and harm reduction. Cultural components include supports provided by community Elders, land-based activities, and learnings about the creation story, the stages of life, sacred medicines, and the Seven Grandfather Teachings.

Substance use services

Additional substance use and treatment services are provided within Greater Sudbury including the following:

- Health Sciences North Withdrawal Management Services (including mobile option)
- Addiction Medicine Consult Service (AMCS)
- Addictions Medicine Unit
- Outpatient addictions and gambling services
- Rapid Access Addiction Medicine (RAAM) clinic
- Safe Beds Program
- Here2Help: A Community Resource (from Canadian Mental Health Association)
- 24-hour Crisis Line: 705.675.4760 or toll-free 1.877.841.1101
- Crisis Intervention Services

As well, Health Canada provides a list of Canada-wide resources and information for people who need help with substance use on their Get help with substance use page (Health Canada, 2023c).

Harm reduction services

Supervised consumption services

Supervised consumption sites (SCS) are places where people who use drugs can go to use their pre-obtained drugs in a safe, empathetic place, free of stigma and discrimination.

People who use drugs work with health care and harm reduction professionals to access education, sterile equipment, supervised consumption services, social services, and a rapid response in the event of an overdose. Since September 28, 2022, Réseau ACCESS Network has operated Sudbury's SCS, The Spot. Supervised consumption sites are proven to help reduce the harms associated with criminalized drug use and help empower people who use drugs to make decisions regarding their own care.

Drug checking

Drug checking increases client autonomy and self-determination by providing people who use drugs with increased knowledge about their supply. Harms related to adulterated drug supply can be mitigated by drug checking using testing strips and more advanced technology like spectrometry.

Recently Sudbury's supervised consumption site acquired a Raman spectrometer to supplement testing by strip. Individuals are counselled about the results of the test, whether to use the drugs if tainted or about the false sense of security a test can provide, given the lack of uniformity in drug distribution in a sample. Drug checking provides an opportunity to educate people who use drugs on the various adulterants and substances found locally as these adulterants are ever changing. Réseau ACCESS Network provides information about drug composition to Public Health Sudbury & Districts that is often used to issue drug alerts.

Supply distribution

Harm reduction programs provide harm reduction supplies and services to people who use drugs to reduce the risks of getting or passing on infectious diseases, like HIV and hepatitis C, and reduce the risks associated with using drugs. Agencies throughout Greater Sudbury distribute and deliver free supplies and services including, but not limited to, sterile needles, injection and inhalation equipment, information about safer drug use, information about safer sex, condoms and lube, community referrals to services, disposal containers for used needles and sharps, and naloxone. Locally, these organizations include, but are not limited to, Public Health Sudbury & Districts' Needle Syringe Program: The Point, Réseau ACCESS Network, the Ontario Aboriginal HIV AIDS Strategy (OAHAS), the Sudbury Action Centre for Youth (SACY), the Go-Give Project, N'Swakamok Native Friendship Centre, and Health Sciences North.

Distribution of naloxone

Naloxone is a medication that can temporality reverse the effects of an opioid overdose. Locally, naloxone is available through participating pharmacies, provincial jails, and the Ontario Naloxone Program (needle syringe programs, hepatitis C programs, consumption and treatment services, and participating community-based organizations).

Under Bill 88, employers must provide naloxone in the workplace if certain circumstances described in the *Occupational Health and Safety Act* apply. For a limited time, those employers can get free naloxone training and nasal spray naloxone kits through Ontario's Workplace Naloxone Program.

Other related services

Counselling and support: Canadian Mental Health Association Sudbury/Manitoulin and the Sudbury Counselling Centre provides supports for people experiencing mental illness.

Indigenous: N'Swakamok Native Friendship Centre, Aboriginal Peoples Alliance of Northern Ontario (APANO), Ontario Aboriginal HIV/AIDS Strategy and Shkagamik-Kwe Health Centre provide a variety of culturally respectful and sensitive programs and strategies for First Nations, Métis and Inuit peoples.

Medical: The Sudbury Nurse Practitioner Centre and the City of Greater Sudbury Community Paramedicine Program offer low-barrier services to a variety of populations. The Sexual Health Clinic, located within Public Health Sudbury & Districts' Elm Place site (the same location as The Point), also offers hepatitis B and C testing, hepatitis B vaccinations, anonymous HIV testing, and other services.

Poverty and homelessness: The Off The Street Emergency Shelter (OTS) program is a low barrier emergency shelter for people experiencing chronic homelessness, substance use disorders, and mental illness. As well, the Samaritan Centre (Elgin Street Mission, Corner Clinic and Blue Door Soup Kitchen) offers a wide range of services targeted at people experiencing poverty and homelessness.

Transitional Care: Sudbury's Centre for Transitional Care, Canadian Mental Health Association Sudbury/Manitoulin Justice Program and Elizabeth Fry Society offer transitional care, services, support and outreach to people leaving carceral settings.

Women: Sudbury Cedar Place Women and Family Shelter, Safe Harbour House, and the YWCA Genevra House Shelter offer services for women and children fleeing domestic violence. Also, the Centre Victoria pour femmes offers services for francophone women experiencing violence as well.

Youth Services: Sudbury Action Centre for Youth (SACY) offers a variety of programs for youth related to harm reduction and housing.

Canada-wide services: Health Canada shares a list of harm reduction and overdose prevention services on their website, including National Overdose Response Service (NORS), Overdose Intervention App, as well as opioid overdose and naloxone awareness training through St. John's Ambulance – Opioid Response Training, Canadian Red Cross - First Aid for Opioid Poisoning Emergencies, and The Advanced Coronary Treatment (ACT) Foundation - Opioid Overdose Response Training module.

Outreach and wraparound services

Community mobilization

Community Mobilization Sudbury (CMS) is a partnership comprising of over 30 partner organizations with representation from diverse sectors such as health, children's services, policing, education, mental health and addictions, housing, and municipal services. One of the organization's key programs is the Rapid Mobilization Table (RMT), which utilizes the expertise of representatives from partner agencies to collaboratively identify situations that place Sudbury residents at high risk of harm. All necessary partners then plan and participate in a timely meeting (twice per week), to coordinate responses and connect those at risk with the services and supports that can help.

Community outreach

Outreach services are designed to meet those in need where they are, rather than having people seek them out. Locally, services are provided by various harm reduction and volunteer-based organizations within the community including those provided by agencies within the homelessness network (Réseau ACCESS Network; Sudbury Action Centre for Youth; L'Association des jeunes de la rue's Community Outreach Team) and others such as the Go-Give Project and New Hope Outreach Services (the Samaritan Centre) to name a few.

Réseau ACCESS Network, OAHAS, SACY and The Go-Give Project all offer outreach programs that provide education and harm reduction services. These groups work in the community, on varying schedules, both on foot and by vehicle depending on the agency. Outreach workers provide safe injection/inhalation supplies, referrals to addiction treatment centres, testing services, HCV treatment, referrals for HIV treatment, support and counselling, advocacy, and accompaniment. Outreach also includes education to prevent harms of drug use, naloxone training and distribution, and distribution of safe supplies.

Outreach staff aid clients by ensuring individuals have access to essential services, sterile supplies, community resources, immediate first aid, health support, and transportation including clothing, blankets, and supplies for people who use drugs in need.

Mobile crisis response

Greater Sudbury's Mobile Crisis Rapid Response Team (MCRRT) is a program developed in partnership with Greater Sudbury Police Service, Health Sciences North's Emergency Department (utilizing their crisis support workers), and Greater Sudbury Paramedic Services. The intent of the team is to respond to mental health and addictions emergencies where trained crisis workers, who are able to help de-escalate crisis situations, provide an on-site assessment

and connect individuals to community services and supports. This team provides various health services such as health and wellness checks; mental health and addiction supports are provided in social settings (e.g. housing buildings, and shelters) to best meet the needs of individuals.

Prevention services

Prevention programs and services can range from upstream to downstream. Upstream initiatives often follow a primary prevention approach to address underlying and root causes of disease and mortality, intervening before health effects or behaviours occur. Downstream initiatives follow more of a secondary or tertiary prevention approach such as addressing early detection, intervention, and management (Health Promotion Ontario, 2023). Downstream approaches are most often developed for individuals and individual health outcomes. Upstream interventions include system level changes such as policy development or large-scale prevention initiatives that have the potential to impact an entire community (Minnesota Department of Health, 2022). While downstream interventions receive a lot of attention and focus, upstream and primary prevention programs have been shown to prevent substance use and reduce misuse and related harms.

As previously noted, interventions that work across different levels of the socioecological model of health (SEM), including individual, interpersonal, community, and societal levels, are more likely to be successful. Locally, many health promotion and prevention programs involve comprehensive approaches, tailored to different audiences, to educate and develop skills, strengthen policy, create supportive environments, and foster collective action to support the prevention of drug use and its impacts among the populations served. Programs and services that support the development of strengths and protective factors include a healthy communities approach and initiatives that work to create systemic changes, such as policy change or development. The following programs and services provide a snapshot of local prevention efforts available to the Greater Sudbury community.

Healthy communities approach

Public Health Sudbury & Districts (Public Health) implements a healthy communities approach to local health promotion programming. As part of this comprehensive approach, Public Health collaborates with various agencies, partnerships, and committees to address underlying issues and identify solutions across the lifespan.

Public Health's healthy growth and development programming includes initiatives that provide education and awareness to service providers, parents, and caregivers on topics including healthy pregnancies, positive parenting, and preparation for parenting. Education and awareness initiatives, partner engagement, and environmental supports help to prevent adverse childhood

experiences (National Scientific Council on the Developing Child, 2020). This work enhances the understanding and importance of creating a nurturing home environment, which acts as a protective factor for children and youth against the use of alcohol and other substances later in life (Howard & Brooks-Gunn, 2009; National Scientific Council on the Developing Child, 2020).

As part of the comprehensive school health approach, which contributes to a healthy community, Public Health aims to help children and youth build on strengths and develop skills that encourage the development of positive and constructive behaviours (such as maintaining healthy relationships with peers and adults, demonstrating pro-social behaviour, and building resiliency).

Public Health staff work with school communities, primarily at the school board and adult influencer level to bolster protective factors and skills to address the social determinants of health and to guard against risk-taking behaviours, including using alcohol, tobacco, cannabis, and illegal drugs. This is done through workshops and training sessions, policy reviews or development, and ongoing partnership engagement.

In the community, Public Health applies a lens of asset-based community development (ABCD) to mobilize local communities and link micro-assets to the macro-environment (Nurture Development, 2018). As such, Public Health staff collaborate with various sectors to create conditions and environments that support healthy living behaviours and that identify and mobilize existing assets. For example, committee and coalition work on the topic of physical activity helps create environments in our community that support access to affordable recreation or active transportation, which in turn can act as protective factors against substance use and prevent or reduce the burden of mental illness.

Additionally, collaborations include work that helps to build healthy built and natural environments such as participation in local processes for developing or updating bylaws, policies, and standards on topics such as housing conditions, property standards, and environmental health hazards. Collective efforts through community committee, coalition, and advisory panels also support citizens to age healthily and safely, while fully participating in their community.

Parenting programs

Parenting programs help families build strong and healthy relationships. Locally, the Parenting Services Advisory Committee, made up of children's health, education, and social service providers, works to offer families in the Sudbury and Manitoulin districts free, high-quality parenting programs and individualized support and advice (PSAC, 2023). The collaborative website parenting4me.com provides a description of the parenting programs available throughout Sudbury including Bounce Back and Thrive!, H.E.L.P. Toolbox, Nobody's Perfect, Positive Discipline in Everyday Parenting, Triple P, S.N.A.P., and EarlyON Centres.

Healthy Babies Healthy Children

The Healthy Babies Healthy Children (HBHC) program, funded by the Ministry of Children, Community and Social Services, and run locally by Public Health, provides high-risk families with voluntary in-home visits during the prenatal period and up to six years of age.

Using targeted approaches, the HBHC program works to optimize healthy growth and development of children and reduce health inequities for families receiving services. Program components include provision of information and resources on topics such as having a healthy pregnancy and birth, how to help children grow and develop, breastfeeding, food and healthy nutrition, and services available in the community (MCCSS, 2023). The program also offers service and system navigation support, early identification and intervention screening, and referral to and from community services.

Mental health literacy and education

Increasing mental health literacy is about more than providing people with information; it is about developing skills and empowering individuals with information so they can promote mental health and make informed decisions (Canadian Alliance on Mental Health and Mental Illness, 2008).

Public Health Sudbury & Districts incorporates mental health literacy initiatives as part of mental health promotion work. Programming enhances local workforce competency to effectively consider their employees' mental health alongside physical health as an integral component of overall well-being. Employers (and employees) are taught and encouraged to recognize mental health or substance use challenges, learn the risk factors of mental health and substance use issues, encourage people to seek help, and know where to get information about mental health and substance use services. Programming provides agencies with these tools using anti-stigma education and a trauma-informed lens, focusing on the use of language. Public Health also incorporates mental health literacy in healthy growth and development programming to encourage people to learn how to support themselves; foster strength-based resiliency and a growth mindset; build relationships for the development of mental health, empowerment, and personal success; and foster well-being.

Canadian Mental Health Association Sudbury/Manitoulin (CMHA-S/M) offers various mental health skill building and educational opportunities incorporating both upstream and downstream prevention approaches for clients, community members, and partners. Clinical client-centred programs include case management supports that help with living, working, learning, or social needs. Case managers connect with clients at their home, community, virtually, or at the office. Intake services also help clients while providing information such as a brief service, family support, and referrals to community-based services and programs.

CMHA also provides educational opportunities and workshops to partners and community members to promote positive mental health and improve mental health literacy. Local programs include:

- Mental health education: This no-cost service provides learning opportunities to build important mental health skills and is accessible to all community members. It includes community and closed group sessions.
- Certificate trainings: The CMHA-S/M site delivers three valuable certificate training sessions including safeTALK: Suicide Alertness for Everyone, Mental Health First Aid, and ASIST – Applied Suicide Intervention Skills Training.
- Psychological First Aid Pocket Guide: This online resource incorporates information about psychological first aid including how to apply it to care for others and how to develop self-care plans.
- Find Help: This resource includes information to inform local service providers about local crisis intervention services, helplines, and other mental health supportive programming options.

National mental health support services from CMHA also exist to provide mental health tips and information specific to mental health challenges. Sample topics in these support services include coping with loneliness, feeling angry, grieving, and stress; facts about mental health and mental illness, getting help, mental health for life, social support, and mindfulness; and opioid use disorder: beyond stigma, overdose prevention, and understanding substance use.

Growing demand and gaps in services

While harm reduction, and local treatment services are available in Greater Sudbury, there remain unmet needs that directly support people who use drugs. Many individuals with lived or living experience, as well as local service providers, have identified gaps or difficulty accessing available services. Based on the review of contributing factors for drug use and toxicity, best practices to reduce harms, and a scan of existing local services, a growing demand for service was identified as an ongoing and emerging local need. While the following list is by no means indicative of all identified needs, trends and gaps are outlined below to further inform discussion.

Harm reduction supplies

While the number of needles distributed decreased in 2022 in comparison to 2019, local use of the needle syringe program and distribution of harm reduction supplies has continued and the demand for foil has increased dramatically in comparison to 2019 and 2020. As shared in the *Drug use proxy data* section of this report, thus far in 2023, over 460 000 syringes and 661 296

foil kits were distributed (Public Health Sudbury & Districts, 2023). Since the pandemic, the landscape of drug use has changed with increased practices of inhalation. With this demonstrated need, additional supports and increased access to local needle syringe programs or alternative harm reduction supplies should be explored.

Supervised consumption sites

On September 28, 2022, the local supervised consumption site, The Spot/La Place/Minoogawbi, opened its doors thanks to funding provided by the City of Greater Sudbury, as well as additional support from Vale and Wheaton Precious Metals. Since opening in the fall of 2022, The Spot, has supported more than 400 local residents safely consume substances (Health Canada, 2023d). In addition to the demand for services, local data also describes a rapidly changing consumption culture, with demand for inhalation supplies outpacing injection supplies thus far.

The Spot is currently designated to allow people who use drugs to consume substances via oral, nasal, or injection routes; inhalation support services are not currently available. Traditional approaches that supported individuals who consume or inject substances do not meet the needs of those who inhale substances. If consumption practices are a proxy indication of the types of preferred substances people who use drugs consume, there is a concern that The Spot will only support a small percentage of the population it was established to help.

While an application for provincial funding was submitted over two years ago to the Ministry of Addictions and Mental Health, The Spot has yet to receive provincial funding and is currently operating with less than the initial amount requested of the province. As well, if The Spot does not receive provincial funding before December 31, 2023, the reality of closure and termination of the much-needed service is imminent. Additional, immediate, and tailored services to reduce negative outcomes associated with non-injection drug routes are needed (Giliauskas, 2022; Ali et al., 2023; PHO, 2023).

Naloxone kits and training

Over the last few years, there has also been an increase in demand for naloxone products as well as for training among community providers. A total of 33 community agencies have received training on the administration of naloxone reflecting the local need for this service. With the growing number of providers and availability of naloxone kits, it important to ensure people are aware of the services and which agencies are trained.

Residential treatment programs

While residential treatment programs are located throughout Ontario—including Sault Ste. Marie, Blind River, Hurst, and Moosonee—there are no accredited residential treatment

programs located in Greater Sudbury (DRS, 2023). Within Public Health's service area, there is one residential treatment program located at Ngwaagan Gamig Recovery Centre Inc. (Rainbow Lodge) in Wikwemikong on Manitoulin Island. Based on best practices and growing demand, additional residential treatment programs or complementary treatment programs must be considered.

Housing supports

As identified throughout this report, safe, available, and affordable housing (as an interconnected or interrelated indicator of poverty and socioeconomic status) is a gap in the local community. Previously, shelters such as The Sudbury Cedar Place Women and Family Shelter, would operate at roughly 56% capacity throughout the year (in 2021). Since the start of 2023, however, occupancy has remained consistent at 98% (CBC[1], 2023). Experts indicate that this is directly related to the lack of available and affordable housing for vulnerable populations (CBC[1], 2023). Securing safe and affordable housing for vulnerable populations, such as women and children escaping violent situations, new immigrants, youth and students, those recently incarcerated, and those who are precariously employed, is a key protective factor against ill-health, including mental health and substance use.

Equitable access to health services

Equitable and timely access to high-quality and appropriate health care services is an ongoing local pressure when seeking services and supports. As outlined in the literature, barriers to accessing treatment and health care options include factors such as lengthy wait times for treatment, a lack of post treatment supports, and the influence of Christian-based models within treatment facilities (Lavalley et al., 2020). These challenges are further exacerbated by the self-stigma commonly experienced by people who use drugs and the social and structural stigma and discrimination they face through local programs and services.

Locally, culturally safe and appropriate services are either not easily identifiable or do not exist to the extent reflective of local population needs. Developing approaches to address current gaps in local service provisions is critical. This includes tailored services for youth, women, people with a history of incarceration, construction and trades workers, racialized groups, people who use substances recreationally, people who use stimulants and benzodiazepines, people who inhale substances and people with concurrent disorders (Iacono et al., 2023, Gomes et al., 2021, Leece et al., 2019; BCCDC, 2017; Giliauskas et al., 2022; Thumath et al., 2021; Speed et al., 2020; Lavalley et al., 2018).

Further, data limitations, such as hospital administrative data used to determine admissions and visits, do not provide information on race and occupation. Without a fulsome picture of the population served, it is challenging to appropriately assess and tailor services.

Anti-stigma initiatives

Self stigma (internalizing stigma, fear of being criticized), social stigma (community stereotypes, stigmatizing language,) and structural stigma (policies that increase stigma, restricts the rights and opportunities of people who use drugs) are all factors that contribute to drug use, affect willingness to access services, and perpetuate inequitable outcomes among people who use drugs (Livingston, 2020; Public Health Ontario, 2020; BCCSU, 2022; CAPUD, 2019; Pauly et al., 2017).

While many local programs work to address self stigma or social stigma, societal and systemic stigma remains a barrier in the provision and access of services. Consideration must be given to how providers can work to further address individual, community, and systemic stigma through local programs and services.

Wraparound services

Providing appropriate wraparound services is also a challenge. Individuals living in northern and rural areas experience disproportionate barriers to accessing mental health programs and services compared to those living in Southern Ontario (Leary et al., 2023; Morin et al., 2020; Russell et al., 2019). A shortage of trained professionals (including crisis workers, counsellors, psychologists, and psychiatrists), long wait times (often exceeding a year to access services), a lack of 24-hour crisis services, and fragmented and disconnected mental health and addictions services significantly reduce successful treatment outcomes (Livingston, 2020; Leary et al., 2023; Morin et al., 2020; Russell et al., 2019; HQO, 2018; Taha, 2018). A comprehensive whole-of-society approach is critical to facilitate increased access to appropriate care.

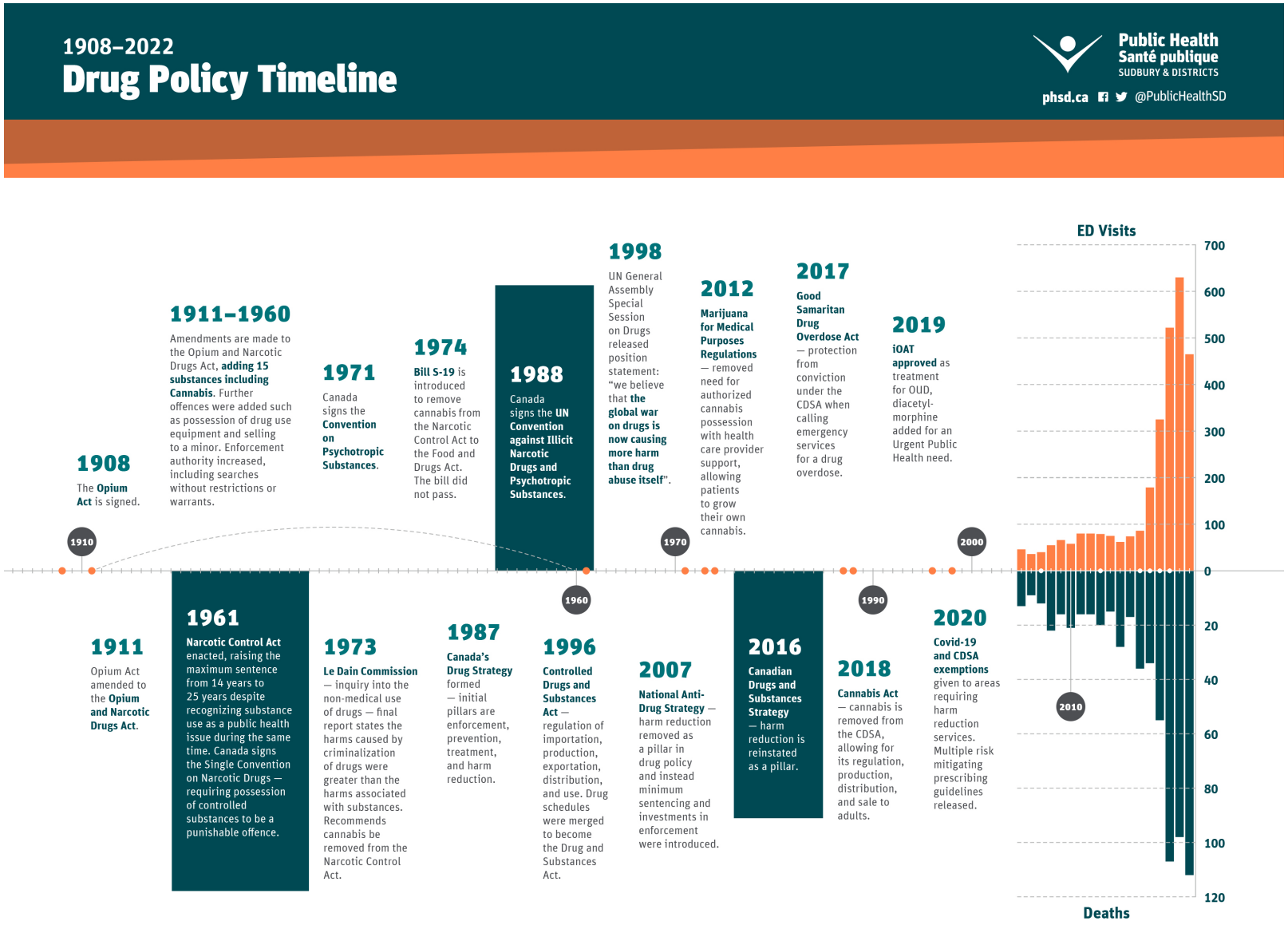
Conclusion

Despite best efforts to address the current crisis, rates of drug toxicity and mortality remain concerning locally, provincially, and nationally. Best practices proven to reduce harms and risks from toxic drug use are multi-pronged and should consider treatment programs such as opioid agonist therapy, harm reduction strategies and models such as supervised consumption sites and naloxone programs, non-clinical wraparound services and supports, and upstream prevention approaches to leverage individual and community strengths. Demographic, societal, and structural factors contributing to illicit drug use and the toxic drug supply must also be examined with a local lens to address systemic root causes that contribute to local drug toxicity.

Moving forward, collaboration and collective action will be critical to enact a successful community response. *The Greater Sudbury Summit on Toxic Drugs* will provide an excellent starting point for local leaders, from diverse sectors, to come together to begin the work of addressing the toxic drug crisis in Greater Sudbury. Open and frequent communication across all sectors will be crucial to identify emerging local pressures, determine the applicability of best practices and strategies, and brainstorm short- and long-term solutions to meet ongoing and future community needs.

Additionally, as this is an evolving issue, it will be important to continue to monitor, review, and share evidence of all types as it becomes available to ensure effective and informed solutions. Only by learning and working together can there be processes, solutions, and structures to mitigate harms and respond to the unique challenges Northern Ontario faces in this escalating toxic drug crisis.

Appendix A


1908–2022
Drug Policy Timeline
Public Health
Santé publique
SUDBURY & DISTRICTS
phsd.ca @PublicHealthSD
1908
The Opium Act is signed.
1911
Opium Act amended to the Opium and Narcotic Drugs Act.
1911–1960
Amendments are made to the Opium and Narcotic Drugs Act, adding 15 substances including Cannabis. Further offences were added such as possession of drug use equipment and selling to a minor. Enforcement authority increased, including searches without restrictions or warrants.
1961
Narcotic Control Act enacted, raising the maximum sentence from 14 years to 25 years despite recognizing substance use as a public health issue during the same time. Canada signs the Single Convention on Narcotic Drugs — requiring possession of controlled substances to be a punishable offence.
1971
Canada signs the Convention on Psychotropic Substances.
1973
Le Dain Commission — inquiry into the non-medical use of drugs — final report states the harms caused by criminalization of drugs were greater than the harms associated with substances. Recommends cannabis be removed from the Narcotic Control Act.
1974
Bill S-19 is introduced to remove cannabis from the Narcotic Control Act to the Food and Drugs Act. The bill did not pass.
1987
Canada's Drug Strategy formed — initial pillars are enforcement, prevention, treatment, and harm reduction.
1988
Canada signs the UN Convention against Illicit Narcotic Drugs and Psychotropic Substances.
1996
Controlled Drugs and Substances Act — regulation of importation, production, exportation, distribution, and use. Drug schedules were merged to become the Drug and Substances Act.
1998
UN General Assembly Special Session on Drugs released position statement: "we believe that the global war on drugs is now causing more harm than drug abuse itself".
2007
National Anti-Drug Strategy — harm reduction removed as a pillar in drug policy and instead minimum sentencing and investments in enforcement were introduced.
2012
Marijuana for Medical Purposes Regulations — removed need for authorized cannabis possession with health care provider support, allowing patients to grow their own cannabis.
2016
Canadian Drugs and Substances Strategy — harm reduction is reinstated as a pillar.
2017
Good Samaritan Drug Overdose Act — protection from conviction under the CDSA when calling emergency services for a drug overdose.
2018
Cannabis Act — cannabis is removed from the CDSA, allowing for its regulation, production, distribution, and sale to adults.
2019
iOAT approved as treatment for OUD, diacetylmorphine added for an Urgent Public Health need.
2020
Covid-19 and CDSA exemptions given to areas requiring harm reduction services. Multiple risk mitigating prescribing guidelines released.
1910
1960
1970
1990
2000
2010
ED Visits
700
600
500
400
300
200
100
0
20
40
60
80
100
120
Deaths

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