From:	Gillian Kolla
To:	Board of Health
Subject:	My comments for 2021.HL29.2 on June 14, 2021 Board of Health
Date:	June 11, 2021 5:47:49 PM
Attachments:	Kolla-Submission to Board of Health-2021-06-11.pdf ATT00001.htm Changing Circumstances Surrounding Opioid Related Deaths - Final-May 2021.pdf ATT00002.htm

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To the City Clerk:

Please add my comments to the agenda for the June 14, 2021 Board of Health meeting on item 2021.HL29.2, Toronto Overdose Action Plan: Status Report 2021

I understand that my comments and the personal information in this email will form part of the public record and that my name will be listed as a correspondent on agendas and minutes of City Council or its committees. Also, I understand that agendas and minutes are posted online and my name may be indexed by search engines like Google.

Comments:

Please see attached for my letter to the Board of Health.

Sincerely,

Gillian Kolla, PhD, MPH
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gilliankolla@uvic.ca
Pronouns: she/her

June 14, 2021
Meeting No. 29
Agenda Item HL 29.2

To the Members of the Board of Health,

In May 2021, I was part of a team from the Ontario Drug Policy Research Network, the Office of the Chief Coroner of Ontario and Public Health Ontario that released a report on overdose deaths in Ontario during the COVID pandemic, Changing Circumstance Surrounding Opioid-Related Deaths in Ontario during the COVID-19 Pandemic. This report found that 2,426 people died of opioid-related overdose in 2020, an increase of 60% over 2019. Our report also found that overdose deaths among people experiencing homelessness rose by 133% during the pandemic, with a significant increase in overdose deaths occurring in shelters, respites and physical distancing hotels. Quite simply, the current situation in Ontario is nothing short of catastrophic.

Over the past few years, I have deputed many times to the Board of Health. I have participated in many working groups on drug-related issues sponsored by the City of Toronto. Rather than deputing in person today, I will be outside City Hall honoring and remembering my friends, family and community members who have died from overdose. In solidarity with the Toronto Overdose Prevention Society, to ask you to immediately implement the following measures:

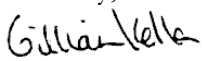
1. Enact drug decriminalization by urgently requesting a Section 56 exemption from the federal government for the City of Toronto. Toronto's Medical Officer of Health, Dr. Eileen de Villa, recommended decriminalization 3 years ago, with no action from the City since then. There is no time for another working group while people continue to die.
2. Ensure that people who use drugs are the primary stakeholder and expert group on all matters related to decriminalization in the City of Toronto;
3. Immediately implement full-scale harm reduction supports and open overdose prevention sites in all shelters, respites, and physical distancing hotels;
4. Ensure mandatory and comprehensive overdose response training is provided to all staff (including security, employment agency and relief staff) in shelters, respites, and physical distancing hotels;
5. Implement regular and rigorous accountability measures across all City-funded shelters, respites, and physical distancing sites to ensure overdose preparedness;
6. Declare a moratorium on violent encampment evictions and support overdose response measures for encampment residents.

The COVID-19 pandemic has shown us what a strong and well-resourced response to a public health crisis can look like. The slow and lacklustre response to the overdose crisis by all levels of government in comparison to the COVID-19 pandemic is very apparent. There is a continued lack of urgency by the City to take the steps necessary to address the overdose crisis within shelters, respites and shelter hotel settings, as well as within Toronto Community Housing. As outlined above, the City of Toronto has a number of tools at its disposal to implement rapid, meaningful responses to stem the tide of preventable overdose deaths. Urgent action is necessary to save lives.

I would also urge you to strongly reconsider the recommendation in today's status update to the Overdose Action Plan regarding the implementation of a working group to "…as a step work towards requesting an exemption under the *Controlled Drugs and Substances Act"*. I was a member of the working group in 2017/2018 that led to Dr. Eileen de Villa's recommendation to the Board of Health on decriminalization in 2018. In the 3 years since then progress on this issue in the City of Toronto has been at a standstill; meanwhile, groups of people who use drugs, multiple provincial and municipal medical officers of health, and civil society organizations have all united to underline the harms caused by the criminalization of people who use drugs. I strongly urge the Board of Health to recommend that the City of Toronto request an immediate Section 56 exemption to the *Controlled Drugs and Substances Act* from the federal Minister of Health. Simultaneously, a working group that prioritizes people who use drugs as the key stakeholder and expert group could be convened to advise the City on all matters related to decriminalization. Streamlining this process would demonstrate the commitment of the City to acting decisively to address the harms that stem from criminalization of people who use drugs.

We are losing so many community members to overdose-related deaths, and so many are left to grieve these losses. There are many lifesaving interventions and actions that the City could take immediately to save lives.

Sincerely,



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Changing Circumstances Surrounding Opioid-Related Deaths in Ontario during the COVID-19 Pandemic

A report prepared by:

Gomes T, Murray R, Kolla G, Leece P, Bansal S, Besharah J,

Cahill T, Campbell T, Fritz A, Munro C, Toner L, Watford J

On behalf of:

The Ontario Drug Policy Research Network

The Office of the Chief Coroner for Ontario /

Ontario Forensic Pathology Service

Public Health Ontario

May 2021

ODPRN | Ontario Opioid Drug Observatory | Public Health Ontario | Santé publique Ontario

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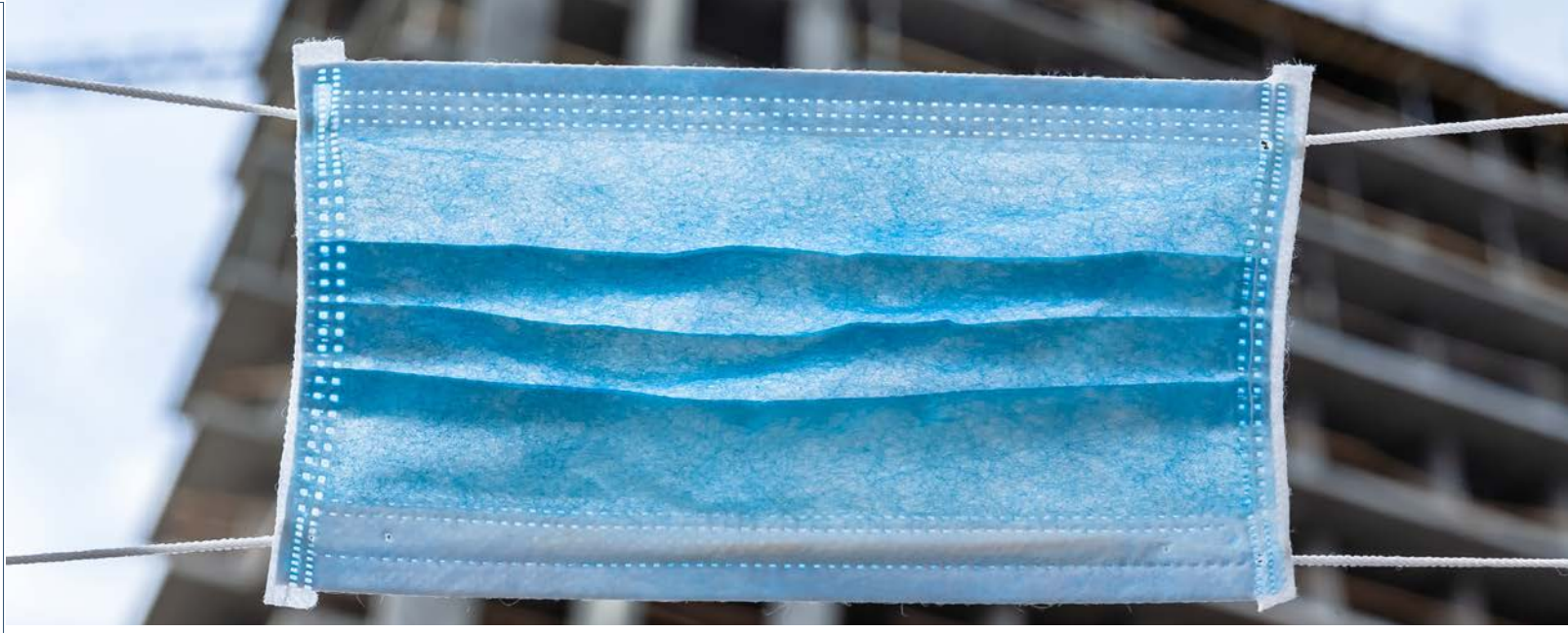


Background

High rates of opioid-related deaths across Canada have been a significant and longstanding national public health issue.[1] In 2019, there were almost 4,000 opioid-related deaths across the country, of which over 94% were accidental.[2] The COVID-19 pandemic emerged in the midst of this ongoing epidemic of opioid-related deaths, and resulted in the declaration of a state of emergency in Ontario on March 17, 2020.[3] Within Ontario, the pandemic response has consisted of waves of public health restrictions of varying severity to help mitigate the spread of COVID-19. These restrictions have included physical distancing measures that resulted in reduced service levels for health and social services, such as pharmacies, outpatient clinics, and harm reduction sites, that provide care to people who use drugs (PWUD). Despite the intention to reduce the impact of COVID-19, there was also concern that these measures would lead to unintended harms.[4]

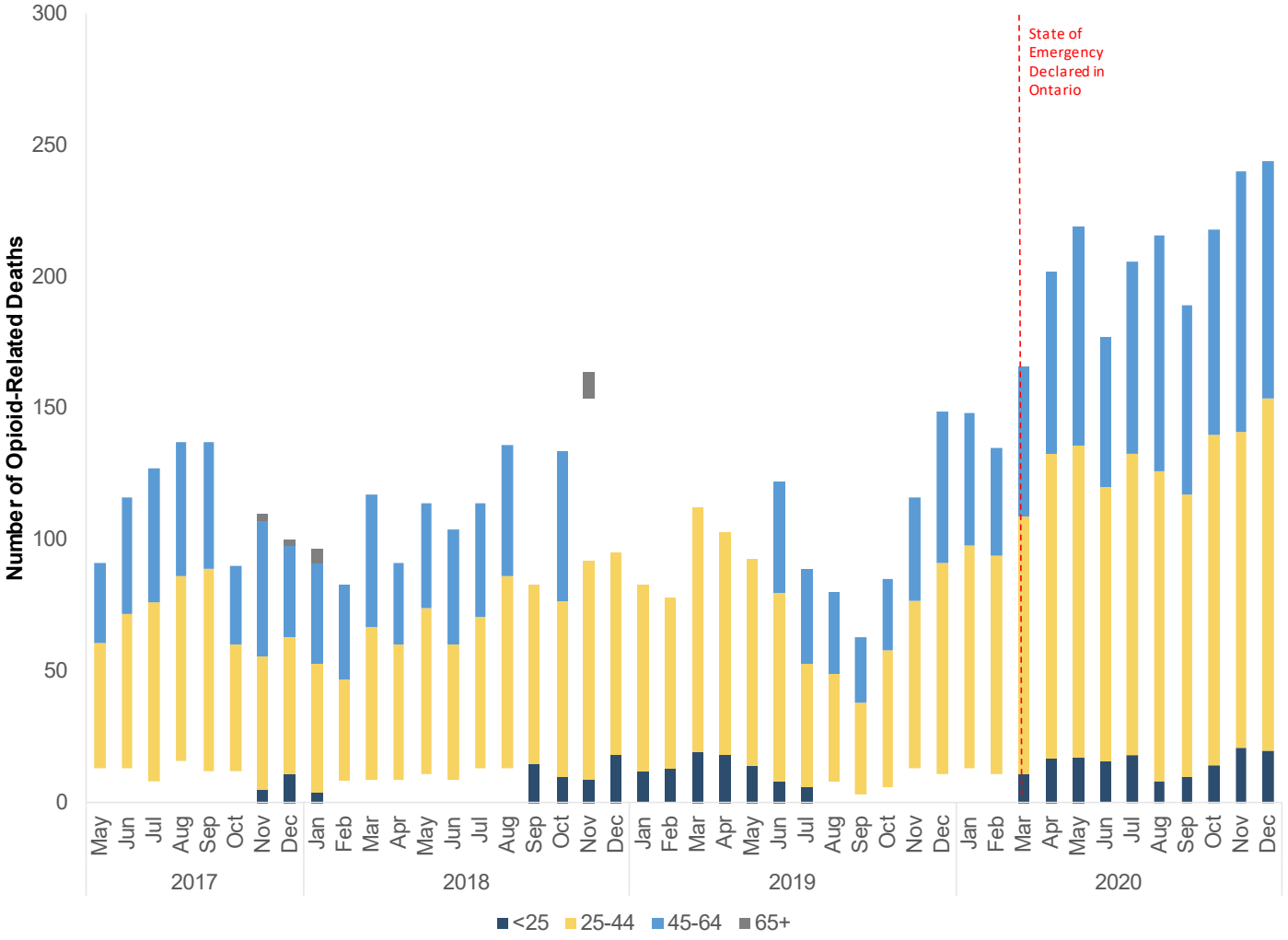
In November 2020, a preliminary **report**[5] describing patterns in the circumstances surrounding opioid-related deaths that occurred in Ontario during the first three months of the COVID-19 pandemic was released. The report noted a 38% increase in opioid-related deaths between March 16 and June 30, 2020 compared to the three months prior, with a notable increase in the proportion of deaths that occurred among men, a rise in the number of deaths with stimulants and benzodiazepines involved, and a higher number of people dying without resuscitation attempts or naloxone administration by bystanders or first responders.[5] This increase in drug-related deaths was thought to be driven by a combination of numerous factors, including an increasingly volatile unregulated drug supply, barriers to accessing harm reduction services and treatment, and physical distancing requirements leading to more people using drugs alone.[4,6] Furthermore, the report noted a potential trend towards an increasing number of deaths having occurred in hotels, motels, and inns, which raised concerns about the potential risks of overdose among people being provided supportive housing in these settings during the pandemic.

Given the rapidly changing nature of the pandemic and the continued rise in opioid-related deaths, a comprehensive understanding of the circumstances surrounding these deaths is needed to inform multifaceted public health interventions and policies that support people who use drugs to help prevent opioid-related mortality and reduce morbidity. This report updates the data provided in the preliminary report to include patterns up to the end of December 2020.

Methods Overview

Trends in Opioid-Related Deaths

Monthly number of opioid-related deaths in Ontario prior to, and during, the COVID-19 pandemic



The monthly number of opioid-related deaths has varied considerably over time in Ontario over the period studied. However, in the months following the State of Emergency declaration in Ontario on March 17, 2020, there was a significant acceleration in the number of opioid-related deaths observed across Ontario (p=0.0008). Specifically, there was a 79.2% increase in the number of opioid-related deaths between February 2020 (the month prior to the State of Emergency declaration; N=139 deaths) and December 2020 (N=249 deaths).

Overall, in 2020, there were 2,426 opioid-related deaths, a 60.0% rise from 1,517 deaths the year prior. Among women, the monthly number of opioid-related deaths increased 43.6% from February to December 2020 (39 vs. 56 deaths monthly), compared to a 93.0% increase among men (from 100 to 193 deaths monthly) over the same period. By age, the largest increases were observed among those aged 25 to 44 (61.4% increase from 83 to 134 deaths monthly) and 45 to 64 years (119.5% increase from 41 to 90 deaths monthly).

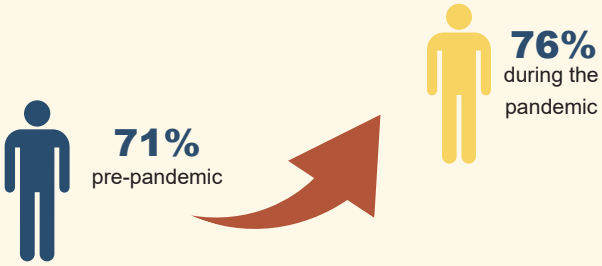
NOTE

72 suspected opioid-related deaths remain in the 2020 data, as some death investigations are still underway. While the majority of these deaths will likely be determined to be opioid-related, final determinations are pending. Similarly, although uncommon, there may be other opioid-related deaths that occurred during this period that are not captured in the figure above, as they have not yet been determined to be opioid-related by the investigating coroner.

(N=1,162) **(N=2,050)**

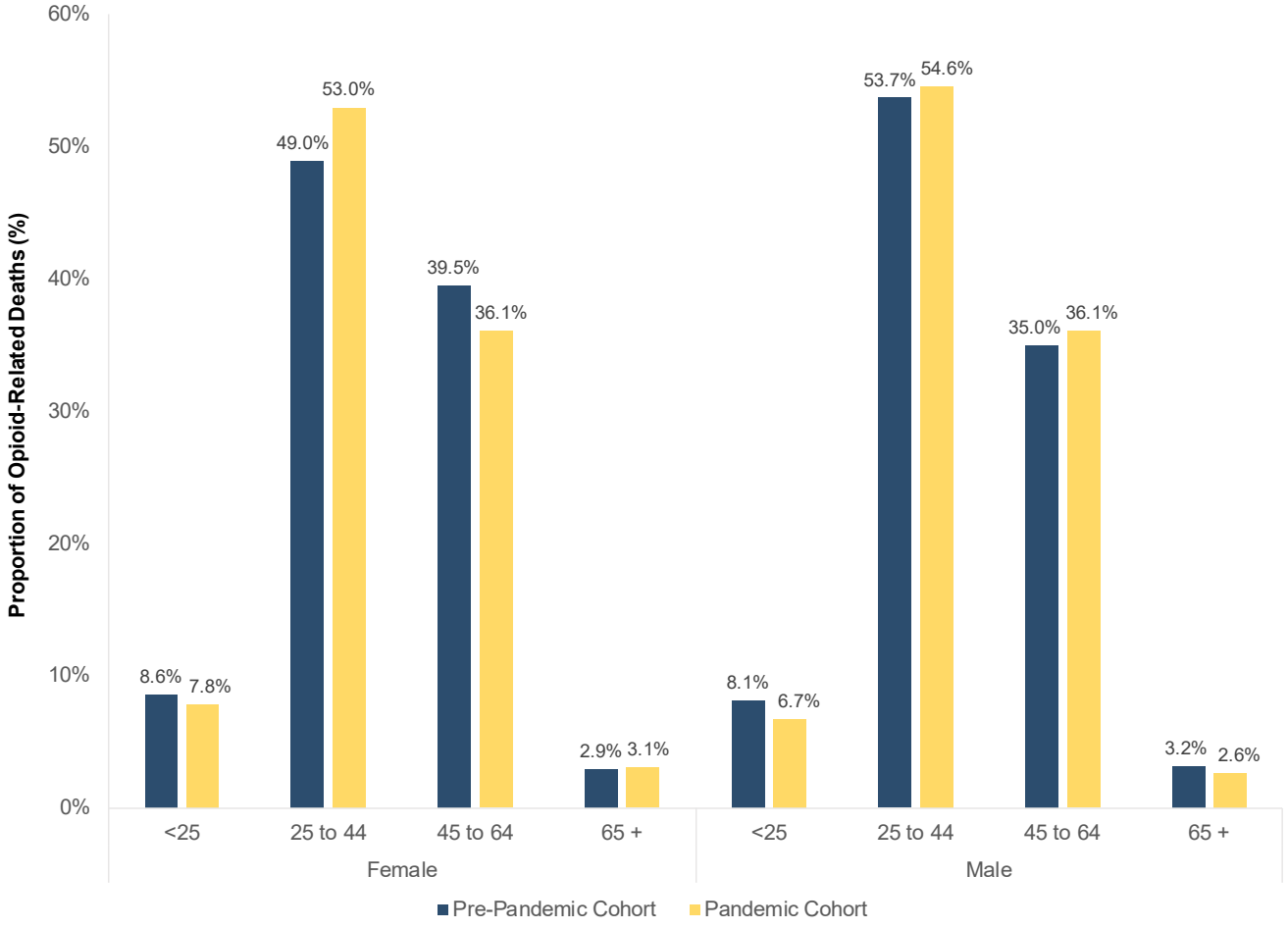
Distribution of opioid-related deaths by sex

The proportion of men among opioid-related deaths increased from:



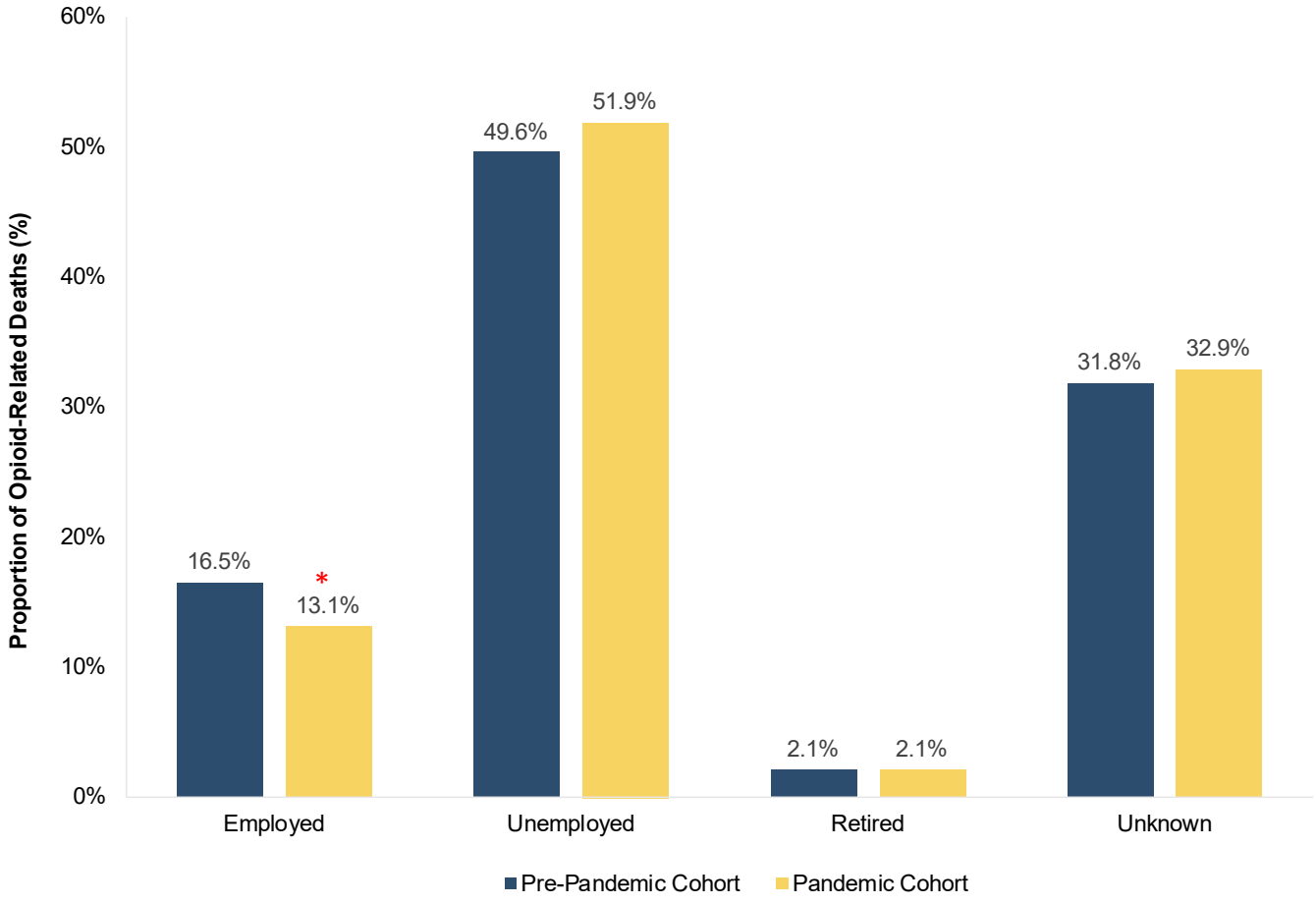
During the pandemic, there has been a statistically significant shift towards more opioid-related deaths occurring among males. Specifically, 70.8% of deaths (823 of 1,162) in the pre-pandemic cohort were among males, rising to 76.3% of deaths (1,565 of 2,050) in the pandemic cohort (p<0.01).

Opioid-related deaths by age among males and females



Despite a higher proportion of deaths occurred among males, there were no significant changes during the pandemic when looking at the age distribution of opioid-related deaths among men and women separately. However, there was a small shift towards a higher proportion of opioid-related deaths among women aged 25 to 44 years. As younger women are both disproportionately experiencing the mental health impacts of job loss and increased childcare demands during the pandemic,[8,9] and encountering additional stigma when accessing healthcare services related to drug use, these findings suggest a need for enhanced programming specific to the needs of younger women across Ontario (e.g., proactive outreach, increased social supports, discreet provision of harm reduction and treatment services).[8]

Employment status of people experiencing an opioid-related death

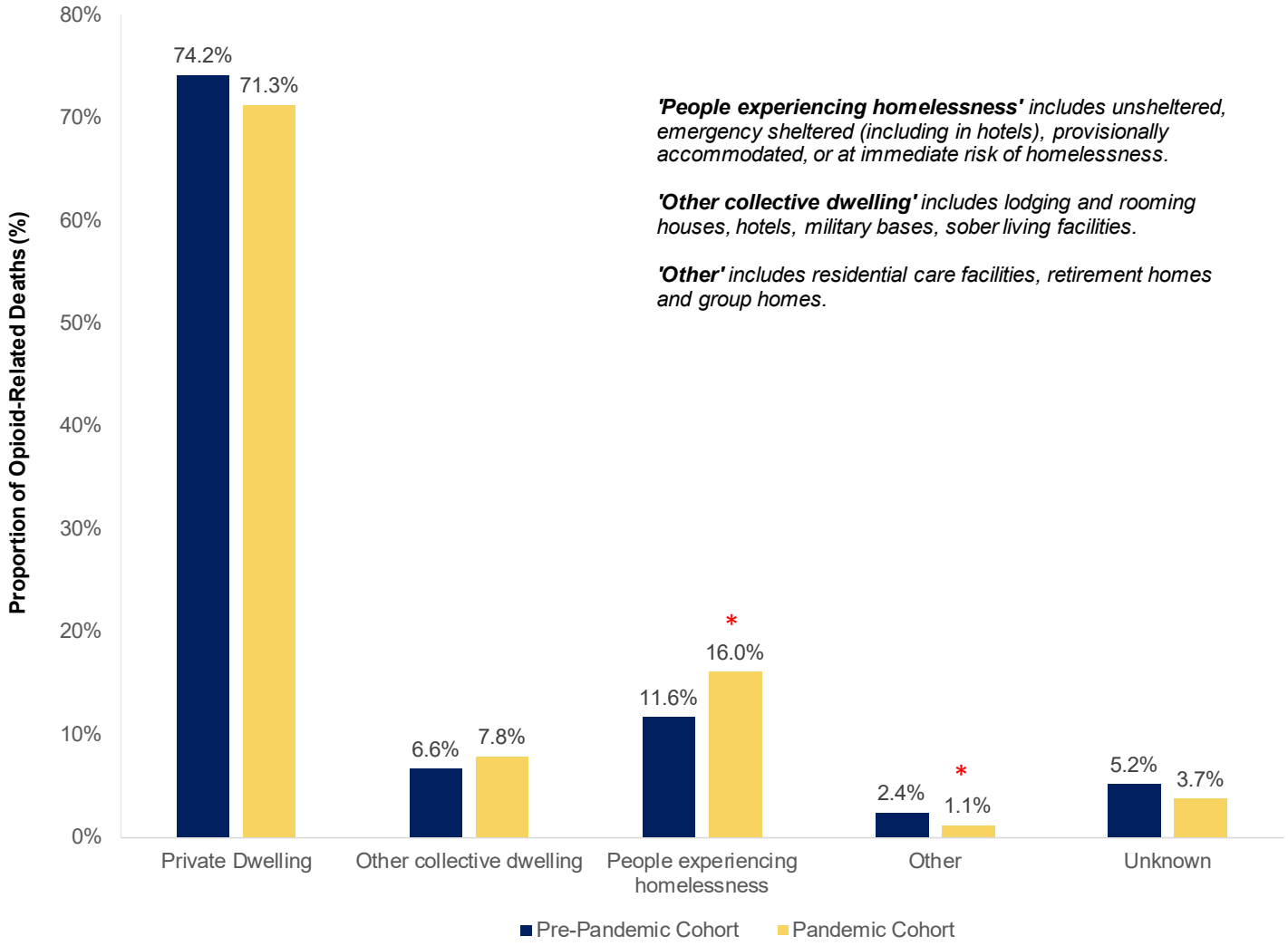


NOTE

1. * Indicates statistically significant difference in proportions between cohorts.
2. 'Unemployed' includes people who may be looking for employment, on income assistance or unable to work due to injury or disability. 'Employed' includes full-time, part-time, seasonal and temporary employment.

Approximately half of opioid-related deaths occurred among people who were unemployed at the time of their death. However, there was a significant reduction in the proportion of people who were employed at the time of opioid-related death, falling from 16.5% to 13.1% between the two cohorts (p=0.008). This is likely attributable to loss of employment and precarious work during the pandemic,[9] leading to small rises in the proportion of people unemployed (49.6% to 51.9%) and those with unknown employment status (31.8% to 32.9%).

Living arrangement among people experiencing an opioid-related death prior to and during the pandemic

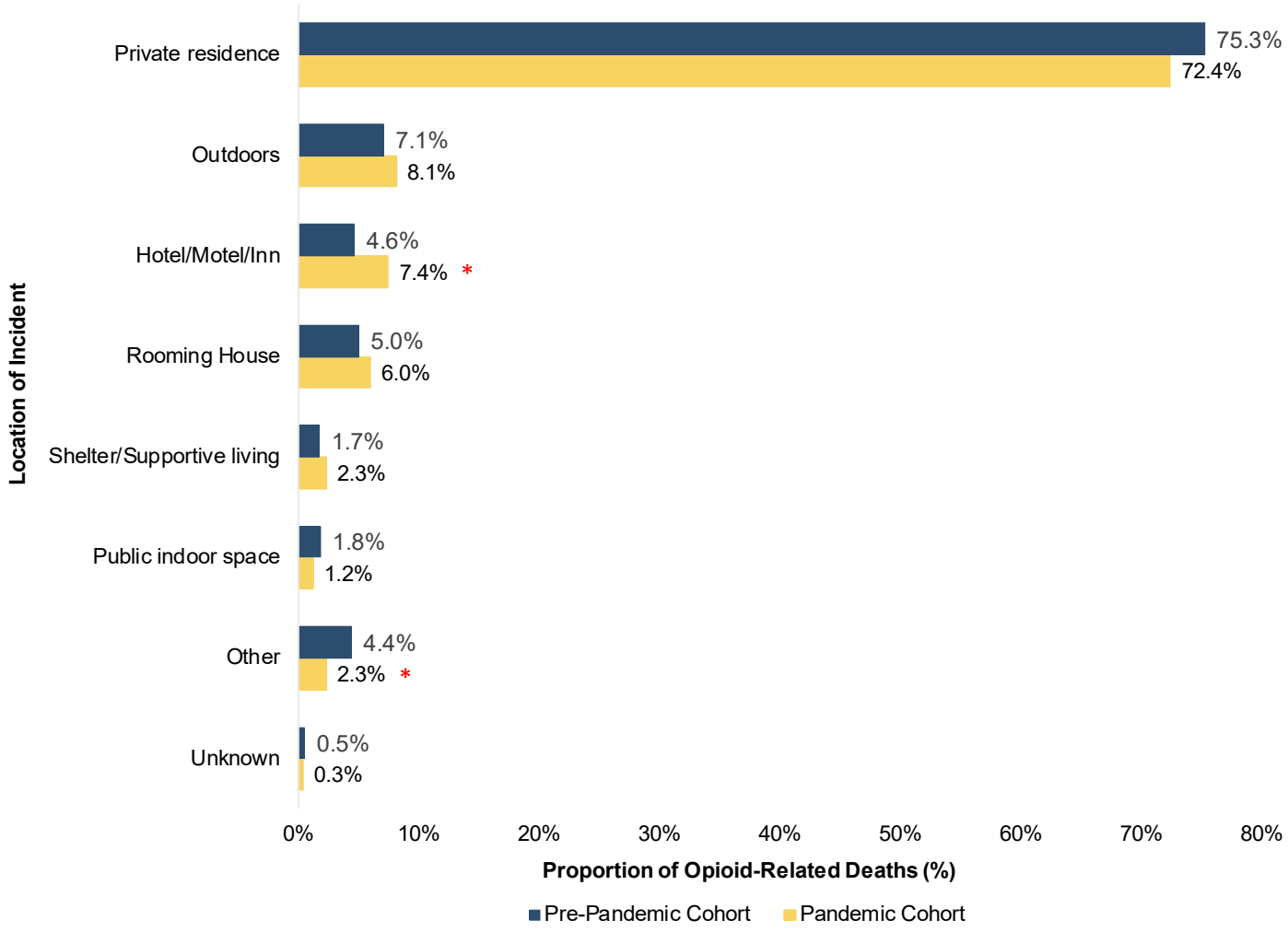


NOTE

* Indicates statistically significant difference in proportions between cohorts.

Although the vast majority of people dying of an opioid-related cause were living in a private dwelling at time of death, this has declined slightly during the pandemic (from 74.2% to 71.3%; p=0.07), while the proportion of opioid-related deaths among people experiencing homelessness has risen significantly over this time. During the pandemic in 2020, the number of opioid-related deaths among people experiencing homelessness more than doubled (from 135 to 323 deaths), representing 16.0% of all opioid-related deaths in the province (compared to 11.6% in the pre-pandemic period; p<0.001).

Location of incident among opioid-related deaths prior to, and during the pandemic



NOTE

1. * Indicates statistically significant difference in proportions between cohorts.
2. Examples of locations included in 'Public indoor spaces' include commercial/retail buildings or public buildings, such as a train/bus station. 'Other' includes correctional institutions, parking garages, and churches.

During the pandemic, there have been small shifts in the location of opioid-related deaths. Proportionally fewer deaths have occurred within private residences and public indoor spaces, and more deaths have occurred outdoors, and within supportive and alternative housing (i.e., hotels, rooming houses, and shelters/supportive living). Although the absolute number of opioid-related deaths more than doubled in shelters/supportive housing (from 20 to 46 deaths) and rooming houses (from 53 to 120 deaths) during the pandemic, the only change reaching statistical significance was the proportion of opioid-related deaths that occurred within hotel/motel/inn settings, rising to 7.4% [N=150] during the pandemic (vs. 4.6% [n=54] in the pre-pandemic cohort; p=0.002). During the pandemic, approximately 30% (45 of 150) of deaths that occurred in hotels, motels, or inns occurred in those that were identified by the investigating coroner as being designated to provide COVID-19 physical distancing shelter or isolation services.

Focused analysis among people experiencing homelessness

The tables on the following two pages present a focused analysis of data pertaining to people experiencing homelessness who died of an opioid-related cause during the pandemic, given the substantial shifts that have been observed in this period among this particularly vulnerable population.

People experiencing homelessness who died of an opioid-related cause: Demographic characteristics and stimulant involvement

	Pre-Pandemic Cohort (N=135)	Pandemic Cohort (N=323)	P-value
Age, Mean (SD)	**37.2 (12.0)**	**39.5 (11.3)**	**0.046**
Age group			
<24	20 (14.8%)	21 (6.5%)	**0.005**
25 to 44	81 (60%)	194 (60.1%)	0.96
45 to 64	32 (23.7%)	106 (32.8%)	0.05
65 +	2 (1.5%)	1 (0.3%)	0.16
Sex			0.94
Female	28 (20.7%)	66 (20.4%)	
Male	107 (79.3%)	257 (79.6%)	
Geographic location*			
Large urban centres	95 (75.4%)	256 (80.8%)	0.21
Medium urban centres	18 (14.3%)	32 (10.1%)	0.21
Small urban centres	8 (6.3%)	9 (2.8%)	0.08
Rural Areas	5 (4.0%)	20 (6.3%)	0.34
Stimulant (direct contributor)			
Cocaine	50 (37.0%)	140 (43.3%)	0.08
Methamphetamines	53 (39.3%)	134 (41.5%)	0.15

NOTE

1. *Excludes 9 people with missing data in the pre-pandemic cohort and 6 with missing data in the pandemic cohort.
2. Rural (<1,000); small urban centre (1,000-29,999), medium urban centre (30,000-99,999), large urban centre (100,000 or greater).

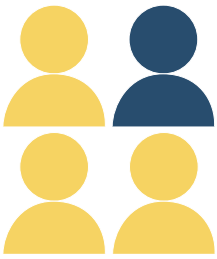
During the COVID-19 pandemic, people experiencing homelessness who died from an opioid-related cause tended to be slightly older (mean age 39.5 vs. 37.2 years; p=0.046) compared to the pre-pandemic cohort. Nearly 80% of opioid-related deaths in this population occurred among men and within large urban centres. This did not change from the year prior to the pandemic and is similar to the prevalence observed in the broader cohort. During the pandemic, cocaine (43.3%) and methamphetamines (41.5%) contributed to over 40% of opioid-related deaths among people experiencing homelessness.

Focused analysis among people experiencing homelessness

People experiencing homelessness who died of an opioid-related cause: Location of incident

	Pre-Pandemic Cohort (N=135)	Pandemic Cohort (N=323)	P-value
Location of incident			
Private residence	57 (42.2%)	96 (29.7%)	**0.01**
Shelter/Supportive living	15 (11.1%)	28 (8.7%)	0.41
Public indoor space	8 (5.9%)	15 (4.6%)	0.57
Rooming House	3 (2.2%)	16 (5.0%)	0.18
Hotel/Motel/Inn*	8 (5.9%)	66 (20.4%)	**<0.001**
Outdoors	32 (23.7%)	87 (26.9%)	0.47
Other	11 (8.1%)	14(4.3%)	0.10
Unknown	1 (0.7%)	1 (0.3%)	0.59

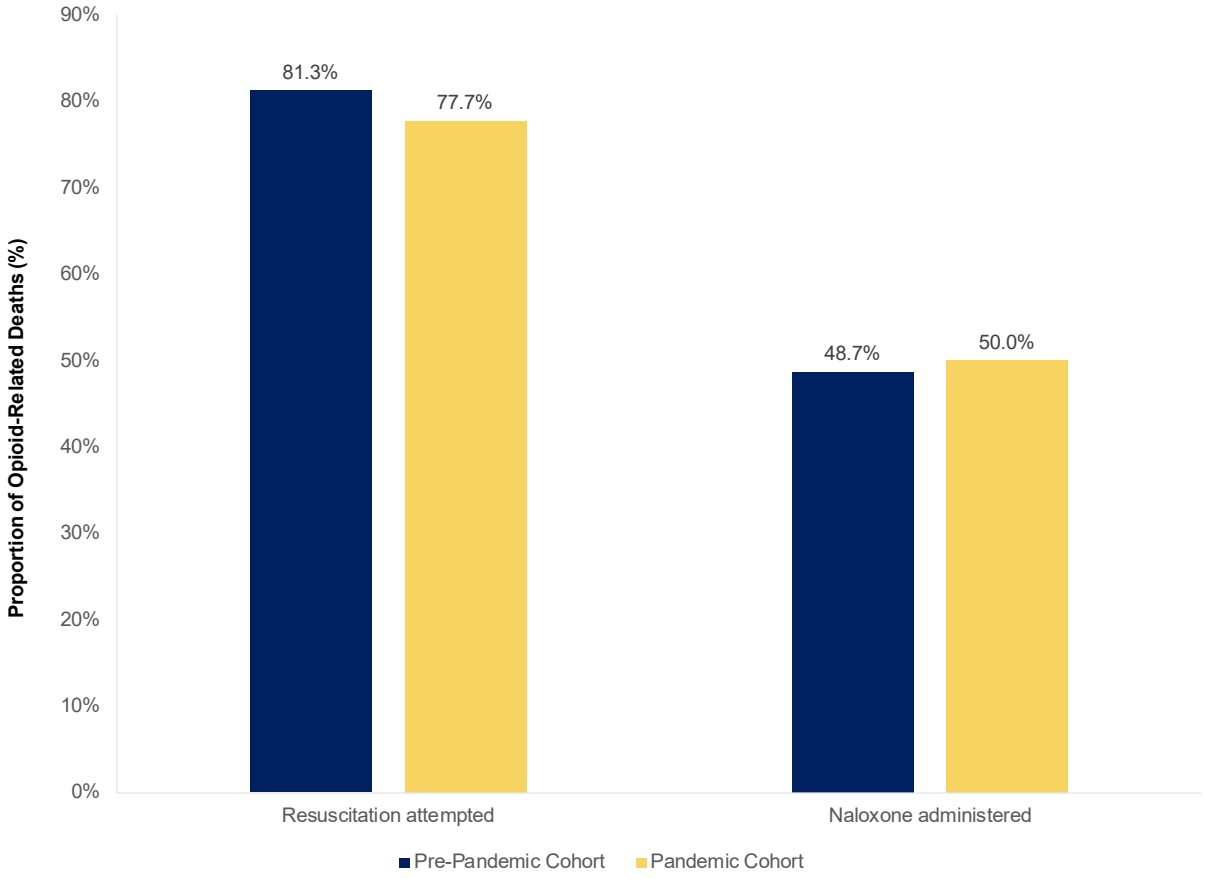
Individual present who could intervene



In three out of four deaths during the pandemic, **no one was present to intervene**.

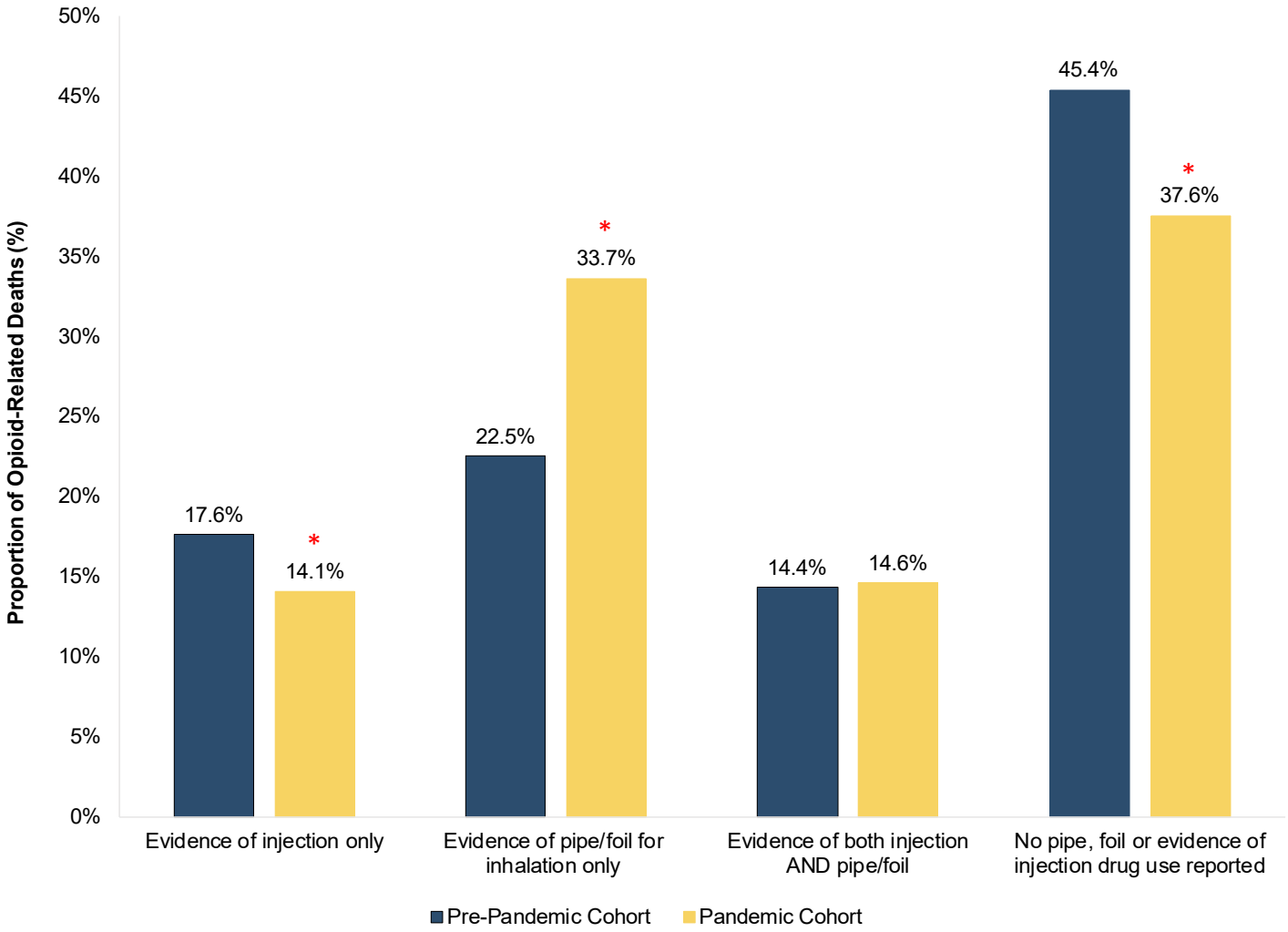
During the pandemic, among opioid-related deaths where this information was available, nearly three-quarters of deaths occurred when no one was present to intervene (N=1,123 of 1,395; 72.6%). This was similar to the period prior to the pandemic (N=609 of 833, 73.1% pre-pandemic; p=0.80). Information on whether an individual was present was not available for approximately one-third of opioid-related deaths both prior to (28.3%) and during (30.7%) the pandemic.

Patterns of resuscitation attempts and naloxone administration when someone was present at scene who could intervene



Among opioid-related deaths where the person was **not** alone at time of death, resuscitation attempts were made the vast majority of the time, with naloxone being administered approximately half of the time. These patterns of intervention did not change during the pandemic. Although we saw no change in the prevalence of naloxone administration during the pandemic, if used, naloxone was more commonly administered by a bystander (55.9% vs. 44.2% pre-pandemic; p=0.002), and less commonly administered in a hospital setting (25.1% vs. 39.3%; p<0.001) during the pandemic compared to the pre-pandemic period. There was no change in first responder involvement in naloxone administration during the pandemic.

Likely mode of drug use based on coroner's investigation

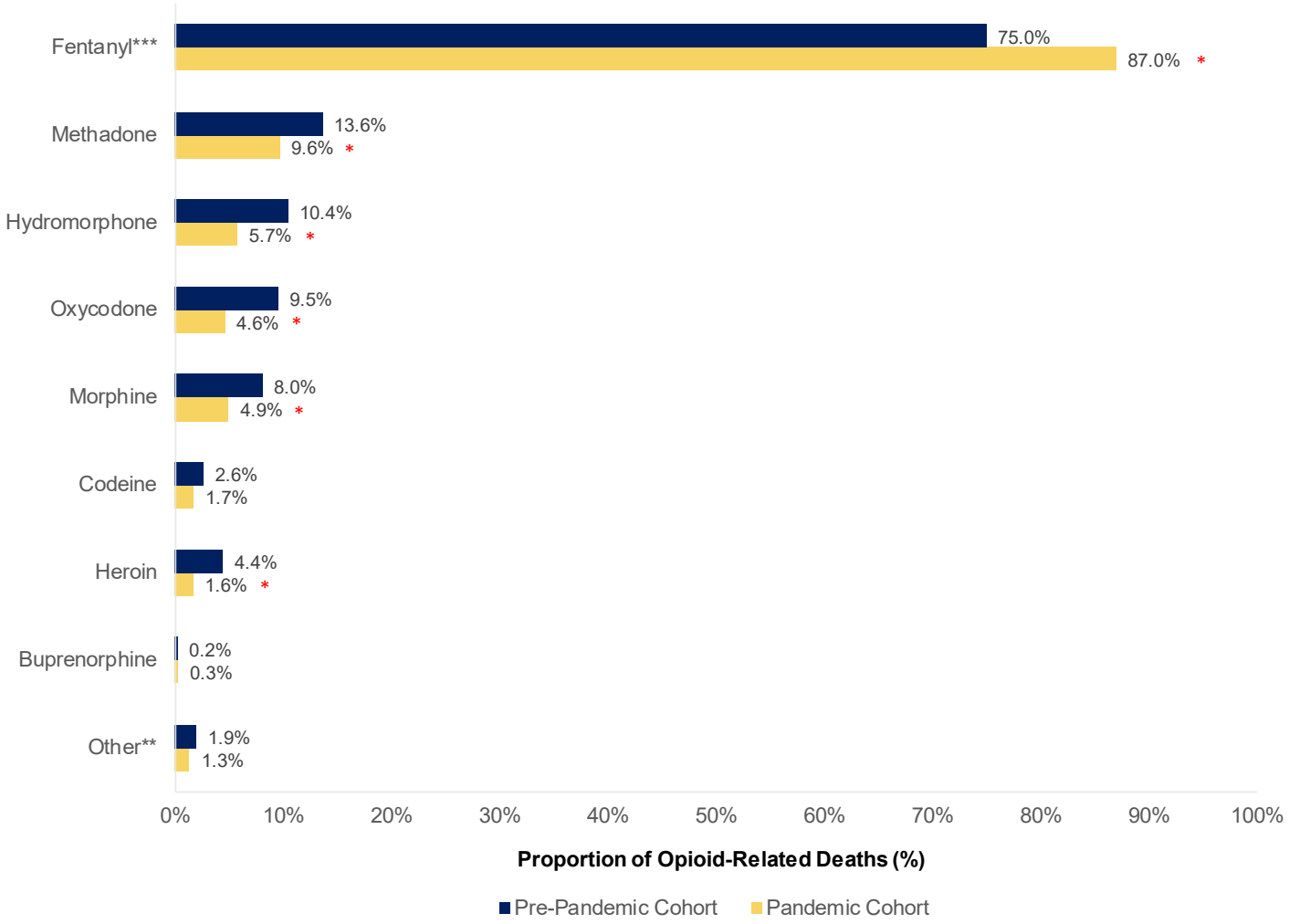


NOTE

1. * Indicates statistically significant difference in proportions between cohorts.
2. Drug paraphernalia found at the scene may provide proxy information for potential mode of drug use, but may also reflect previous modes of use or paraphernalia that was used by someone else. Other drug paraphernalia besides a syringe, pipe and foil may have been found at scene (e.g., pill crusher, cooker, grinder, spoon). When no pipe, foil or evidence of injection was present, mode may include oral, nasal, transdermal, other or unknown modes of drug use.

During the pandemic, there has been a significant shift away from opioid-related deaths with evidence of injection only (17.6% to 14.1%; p=0.01) and towards deaths with evidence of a pipe/foil for inhalation at the scene. In fact, just over one-third of deaths had indication of supplies for inhalation only during the pandemic (N=678, 33.7%; p<0.001), compared to 22.5% in the pre-pandemic cohort (N=262). Although this trend follows national patterns of drug use that suggest a rising prevalence of inhalation of opioids across Canada,[14] it could also be influenced by pandemic-related changes in access to public indoor spaces where people often inject drugs, leading to other modes of consumption that are quicker and require less preparation. Regardless of whether the pandemic is specifically driving this change, the rising prevalence of inhalation as a predominant mode of drug use suggests a need for tailored harm reduction services – including supervised inhalation and smoking services – across Ontario.

Opioids directly contributing to opioid-related deaths in Ontario



NOTE

1. * Indicates statistically significant difference in proportions between cohorts.
2. **'Other' includes tramadol, oxymorphone, and hydrocodone.
3. ***Fentanyl estimates include fentanyl analogues.
4. Some deaths may be attributed to multi-drug toxicity where more than one substance can contribute to an individual death. There were 72 suspected opioid-related deaths in the pandemic cohort not included in this figure.

The role of fentanyl as a direct contributor to opioid-related deaths continued to increase during the pandemic, rising to a prevalence of 87.0% (N=1,720) from 75.0% (N=871) in the pre-pandemic cohort ($p<0.01$). The proportional involvement of all other opioids as direct contributors to opioid-related deaths declined during the pandemic, with significant reductions observed for opioids used for opioid agonist therapy (i.e., methadone; $p<0.01$), as well as those used in safer opioid supply programs (i.e., hydromorphone; $p<0.01$) and those typically used to treat pain (i.e., hydromorphone, oxycodone, and morphine; $p<0.01$), and other non-pharmaceutical opioids (i.e., heroin; $p<0.01$) (see **Appendix** for absolute number of deaths). It is likely that these findings represent a changing unregulated drug supply, and may also suggest an increasing reliance on this supply due to disruptions in access to prescription opioids during early waves of the pandemic.[15] Importantly, there was no indication of increased involvement of fentanyl analogues (e.g., carfentanil) during this time period, with only 20 opioid-related deaths (1.0%) having any fentanyl analogue directly contributing to the death.

are increasingly contaminating the unregulated opioid drug supply, and are frequently observed in opioid-related deaths, even though they may not be determined as a major contributor to death by the investigating coroners.

During the pandemic, there was also a significant increase in stimulants contributing to opioid-related deaths, with their involvement rising from 50.0% (N=581) to 58.1% (N=1,149; p<0.01) of deaths between the pre-pandemic and pandemic cohorts. This increase was driven by cocaine and methamphetamine involvement. Cocaine directly contributed to nearly 42.8% of opioid-related deaths [N=847] during the pandemic, compared to 36.1% [N=419] in the pre-pandemic cohort (p=0.01). Methamphetamines contributed to 25.3% [N=501] of opioid-related deaths during the pandemic compared to 21.3% [N=247] in the pre-pandemic period (p<0.01).

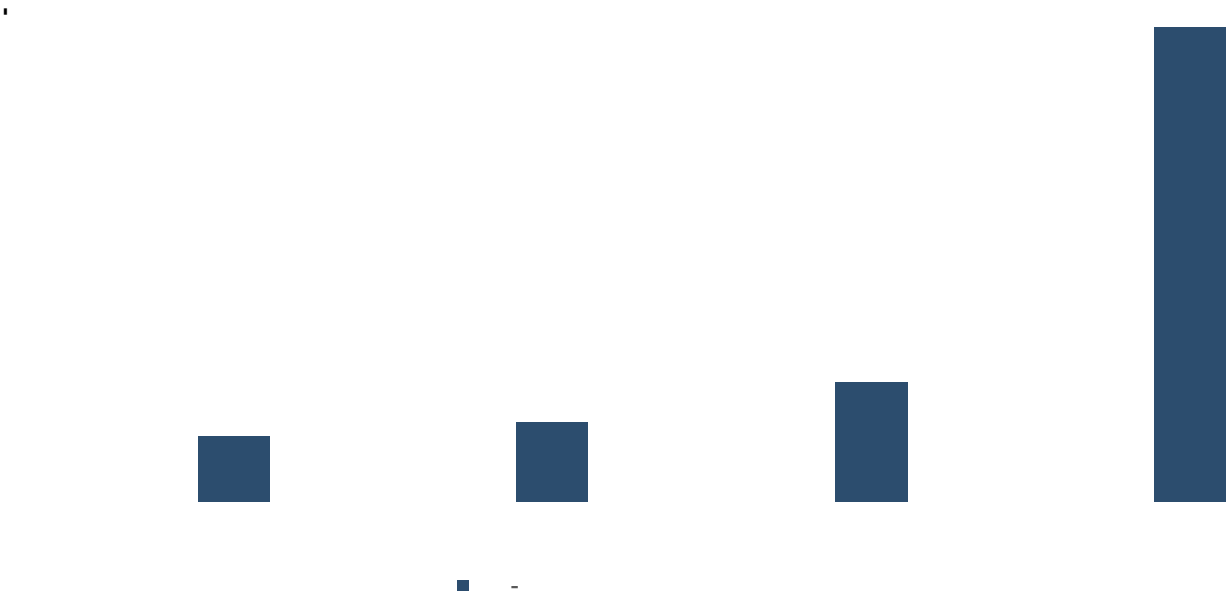
Finally, although there was no significant increase in the prevalence of alcohol directly contributing to opioid-related deaths, the number of these deaths with alcohol as a contributing factor nearly doubled from 150 to 273 during the pandemic.

Recent release from correctional facility

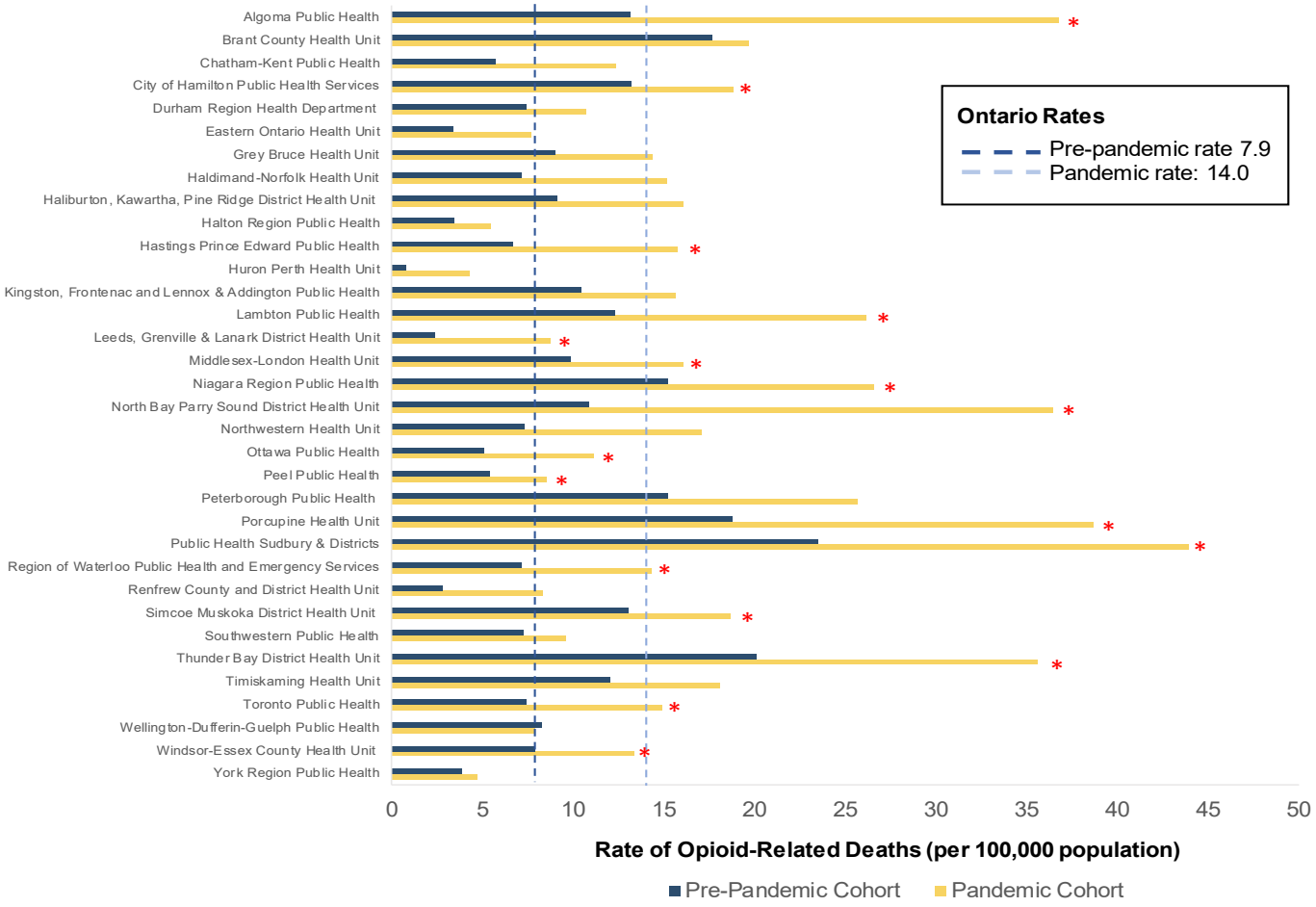
50%

Increase in the number of opioid-related deaths **among those recently released from a correctional facility** during the pandemic.

During the pandemic, a small percentage of opioid-related deaths occurred among people who were known to have been recently released from a correctional facility (prior four weeks; 3.4%; N=69), which was similar to the prevalence the year prior (4.0%, N=46; p=0.44). However, recent release from correctional facilities was unknown for 36.0% of opioid-related deaths in the pre-pandemic cohort and rose to 40.8% of these deaths in the pandemic cohort (p=0.01). Therefore, it is possible that there were differences that could not be captured in our data. Furthermore, as federal and provincial correctional institutions continue to implement measures to address institutional crowding during the pandemic (e.g., temporary or early release of people in custody at low risk to reoffend[12]), and given established evidence of high risk of overdose among people recently incarcerated,[13] the rising absolute number of opioid-related deaths observed in the pandemic period among those recently incarcerated (50% increase during the pandemic) requires monitoring, and suggests an ongoing need for support and access to treatment and harm reduction services within this population.



Change in opioid-related deaths by public health unit



NOTE

1. * Indicates statistically significant difference in proportions between cohorts.
2. These data include confirmed and suspected opioid-related deaths. The distribution of investigations still pending conclusion (i.e., suspected opioid-related deaths) may vary by region.

Rates of opioid-related deaths have risen throughout the province during the COVID-19 pandemic, with rates more than doubling in 15 of 34 Public Health Units (see **Appendix**). Increased rates that were statistically significant were observed during the pandemic in half (17 of 34) of local public health units. Algoma Public Health, Lambton Public Health, Niagara Region Public Health, North Bay Parry Sound District Health Unit, Porcupine Health Unit, Public Health Sudbury & Districts, and Thunder Bay District Health Unit had statistically significant rises in rates, and the highest population-adjusted rates of opioid-related deaths during the pandemic. Larger increases in more northern and rural parts of the province may 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. However, many of these regions also have small populations. Therefore, rates should be interpreted with caution, as they can be easily influenced by a relatively small change in the number of deaths.

The largest absolute increases in opioid deaths during the pandemic compared to the pre-pandemic time period occurred in: Toronto Public Health (229 additional deaths), Ottawa Public Health (63 additional deaths), Peel Public Health (49 additional deaths), the Region of Waterloo Public Health and Emergency Services (41 additional deaths), and Public Health Sudbury & Districts (41 additional deaths).

Limitations

Gaps in Knowledge

Summary of Findings and Discussion

In 2020, 2,426 people died of a confirmed or suspected opioid-related death in Ontario, representing a 60% increase compared to the year prior. Specifically, following the State of Emergency declaration in March 2020, there was a 79% increase in the number of opioid-related deaths across the province. The reasons for this increase are multi-faceted, and likely reflect the underlying volatility in the unregulated drug supply, as well as changing access to health care services and community-based programs and supports for people who use drugs, early release of people from prisons, increased isolation due to public health measures to limit COVID-19 transmission, and changing patterns of substance use that have been attributed to increased anxiety during the pandemic across Canada.[16-20] Although the prevalence of alcohol consumption and cannabis use (substances regulated across Canada) has also increased during the pandemic,[17,18] the implications of these changing patterns may be less acutely observed. Our findings suggest that the changing usage patterns of an increasingly unpredictable unregulated opioid drug supply has led to hundreds of additional deaths across Ontario during the pandemic.

One example of the changing drug supply is the large, 10-fold increase in the detection of non-prescription benzodiazepines in opioid-related deaths observed during the pandemic. A non-prescription benzodiazepine was identified in more than 1 in 4 opioid-related deaths that occurred during the pandemic, compared to approximately 1 in 20 in the pre-pandemic cohort, with etizolam being the drug most commonly detected. Three of the benzodiazepines (i.e., etizolam, flualprazolam, flubromazolam) commonly detected during post-mortem toxicology are not approved for use in Canada, which suggests that they are contaminating the unregulated opioid supply. This finding aligns with data from drug checking services in Toronto,[21] and is complicating the response to the overdose crisis across the province. For example, community-based programs have observed increased sedation among people who use drugs, as large amounts of potent, unregulated benzodiazepines are combined with fentanyl. This complicates the overdose response. Naloxone administration will reverse the effects of the opioids involved; however, it does not reverse the extreme sedation from benzodiazepines.[22] Furthermore, the long-term impacts of their increasing presence in the unregulated drug supply on the health of PWUD is unknown; as a drug class, long-term use of benzodiazepines has been associated with harm (e.g., depression, memory loss and overdose),[23,24] and abrupt cessation after regular use can be associated with symptoms of withdrawal, including seizures.[25]

Similarly, stimulants are increasingly contributing to opioid-related deaths during the pandemic – a trend that was driven by a rising prevalence of cocaine and methamphetamine involvement. These findings may reflect pandemic-related changes in the stimulant drug supply. For example, drug checking services in Toronto identified a rising prevalence of unexpected drugs in both cocaine (from 43% to 57%) and methamphetamine (from 6% to 28%) samples during the pandemic,[21] which suggests a more unpredictable, potentially dangerous drug supply over this time. Furthermore, greater polysubstance use during the pandemic, particularly among people experiencing homelessness who are negotiating environments with drastically reduced service access (particularly at night) due to pandemic restrictions, merit attention.[16] Service providers have reported that people experiencing homelessness may be increasingly using stimulants to stay awake outside or to counteract the sedating effects of opioids (which often are enhanced by benzodiazepine contamination) to maintain both personal safety and to protect belongings.[26]

The number of opioid-related deaths more than doubled among people experiencing homelessness, with 1 in 6 deaths during the pandemic having occurred within this population, reinforcing the importance of safe, affordable housing as a social determinant of health that requires attention at all levels of government. Due to the need for shelters with appropriate physical distancing measures, several hotels across Ontario have been repurposed

Conclusion

Contributors

Ontario Drug Policy Research Network

The Ontario Drug Policy Research Network (ODPRN) is a province-wide network of researchers who provide timely, high quality, drug policy relevant research to decision makers. The ODPRN's core principles are quality, relevance, and timeliness. The ODPRN conducts research to determine real-world drug utilization, safety, effectiveness, and costs of drugs in Ontario, and has developed partnerships that allow them to engage in cross-provincial comparisons of drug safety and utilization. For more information, visit **odprn.ca**.

Office of the Chief Coroner/Ontario Forensic Pathology Service

Together the Office of the Chief Coroner/Ontario Forensic Pathology Service (OCC/OFPS) provide death investigation services in Ontario serving the living through high quality investigations and inquests to ensure that no death will be overlooked, concealed or ignored. The findings are used to generate recommendations to help improve public safety and prevent further deaths. In Ontario, coroners are medical doctors with specialized training in the principles of death investigation. Coroners investigate approximately 17,000 deaths per year in accordance with section 10 of the Coroners Act. The OFPS provides forensic pathology services in accordance with the Coroners Act. It provides medicolegal autopsy services for public death investigations under the legal authority of a coroner. The OFPS performs approximately 7,500 autopsies per year. For more information, visit **mcscs.jus.gov.on.ca**.

Public Health Ontario

Public Health Ontario is a Crown corporation dedicated to protecting and promoting the health of all Ontarians and reducing inequities in health. Public Health Ontario links public health practitioners, frontline health workers and researchers to the best scientific intelligence and knowledge from around the world. Public Health Ontario provides expert scientific and technical support to government, local public health units and health care providers relating to the following:

- communicable and infectious diseases
- infection prevention and control
- environmental and occupational health
- emergency preparedness
- health promotion, chronic disease and injury prevention
- public health laboratory services

Public Health Ontario's work also includes surveillance, epidemiology, research, professional development and knowledge services. For more information, visit **publichealthontario.ca**.

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References

sectional study. J Addict Med. 2020 Dec 14 [Epub ahead of print]. Available from: https://doi.org/10.1097/adm.0000000000000798

19. Nguyen T, Buxton JA. Pathways between COVID-19 public health responses and increasing overdose risks: a rapid review and conceptual framework. Int J Drug Policy. 2021 Mar 20 [Epub ahead of print]. Available from: https://doi.org/10.1016/j.drugpo.2021.103236
20. Ali F, Russell C, Nafeh F, Rehm J, LeBlanc S, Elton-Marshall T. Changes in substance supply and use characteristics among people who use drugs (PWUD) during the COVID-19 global pandemic: a national qualitative assessment in Canada. Int J Drug Policy. 2021 Apr 10 [Epub ahead of print]. Available from: https://doi.org/10.1016/j.drugpo.2021.103237
21. Centre on Drug Policy Evaluation. Toronto's drug checking service [Internet]. Toronto, ON: Centre on Drug Policy Evaluation; 2020 [cited 2021 May 04]. Available from: https://drugchecking.cdpe.org/
22. Ontario Harm Reduction Network. The shifting unregulated drug supply in Ontario: implications and messaging regarding benzodiazepine-type substances in drugs sold as opioids or “down” [Internet]. Toronto, ON: Ontario Harm Reduction Network; 2020 [cited 2021 May 04]. Available from: http://www.ohrn.org/wp-content/uploads/2020/03/Benzodiazepines-in-the-unregulated-drug-supply-in-Ontario_OHRN_-March-2020.pdf
23. Weir DL, Samanani S, Gilani F, Jess E, Eurich DT. Benzodiazepine receptor agonist dispensations in Alberta: a population-based descriptive study. CMAJ Open. 2018;6(4):E678-84. Available from: https://doi.org/10.9778/cmajo.20180121
24. Murphy Y, Wilson E, Goldner EM, Fischer B. Benzodiazepine use, misuse, and harm at the population level in Canada: a comprehensive narrative review of data and developments since 1995. Clin Drug Investig. 2016;36(7):519-30. Available from: https://doi.org/10.1007/s40261-016-0397-8
25. Nielsen S, McAuley A. Etizolam: a rapid review on pharmacology, non-medical use and harms. Drug Alcohol Rev. 2020;39(4):330-6. Available from: https://doi.org/10.1111/dar.13052
26. McNeil R, Fleming T, Collins AB, Czechaczek S, Mayer S, Boyd J. Navigating post-eviction drug use amidst a changing drug supply: a spatially-oriented qualitative study of overlapping housing and overdose crises in Vancouver, Canada. Drug Alcohol Depend. 2021;222:108666. Available from: https://doi.org/10.1016/j.drugalcdep.2021.108666

Appendix

Data Capture and Completeness

	Pre-Pandemic Cohort	Pandemic Cohort	Variables included in analysis
Total Opioid-Related Deaths	**1,162**	**2,050**	
Opioid Investigative Aid (OIA)	1,162 (100%)	2,014 (98%)	
No OIA	0	36 (2%)	
Confirmed Opioid-Related Deaths	1,162 (100%)	1,978 (96%)	
OIA	1,162 (100%)	1,943 (98%)	All variables
No OIA	0	35 (2%)	Age, sex, manner of death, substance involvement, month, public health unit, geographic density
Suspected Opioid-Related Deaths	0	72 (4%)	
OIA	0	71 (99%)	Age, sex, month, public health unit, geographic density, likely mode of drug use, resuscitation attempts, location of incident
No OIA	0	1 (1%)	Age, sex, week, public health unit, geographic density

Drug involvement in opioid-related deaths

Drugs	Pre-Pandemic Cohort N=1,162	Pandemic Cohort N=1,978	P-Value
Opioids Direct Contributor			
Fentanyl (including analogues)	871 (75.0%)	1,720 (87.0%)	**<0.01**
Buprenorphine	2 (0.2%)	5 (0.3%)	0.64
Codeine	30 (2.6%)	33 (1.7%)	0.08
Heroin	51 (4.4%)	32 (1.6%)	**<0.01**
Hydromorphone	121 (10.4%)	113 (5.7%)	**<0.01**
Methadone	158 (13.6%)	190 (9.6%)	**<0.01**
Morphine	93 (8.0%)	97 (4.9%)	**<0.01**
Oxycodone	110 (9.5%)	90 (4.6%)	**<0.01**
Other*	22 (1.9%)	11 (0.6%)	0.20
Other Drugs			
Benzodiazepines (Detected)	347 (29.9%)	901 (45.6%)	**<0.01**
Etizolam	55 (4.7%)	502 (25.4%)	**<0.01**
Flualprazolam	5 (0.4%)	52 (2.6%)	**<0.01**
Flubromazolam	3 (0.3%)	32 (1.6%)	**<0.01**
Benzodiazepines (Direct Contributor)	92 (7.9%)	170 (8.6%)	0.45
Etizolam	18 (1.5%)	98 (5.0%)	**<0.01**
Flualprazolam	0 (0%)	11 (0.6%)	**0.01**
Flubromazolam	1 (0.1%)	12 (0.6%)	**0.03**
Stimulants (Direct Contributor)	581(50.0%)	1,149 (58.1%)	**<0.01**
Cocaine	419 (36.1%)	847 (42.8%)	**0.01**
Methamphetamine	247 (21.3%)	501 (25.3%)	**<0.01**
Other stimulants**	18 (1.5%)	40 (2.0%)	0.34
Alcohol (Direct Contributor)	150 (12.9%)	273 (13.8%)	0.48

NOTE

1. *Includes tramadol, oxymorphone, and hydrocodone.
2. **MDMA, MDA, amphetmine (in the absence of methamphetamine), methylphenidate, pseudoephedrine.
3. Some deaths may be attributed to multi-drug toxicity where more than one substance can contribute to an individual death. There were 72 suspected opioid-related deaths in the pandemic cohort not included in this figure.

Number and rate of opioid-related deaths* during the pandemic, by public health unit

Public Health Unit	Population	Pre-Pandemic Cohort (N; Rate per 100,000)	Pandemic Cohort (N; Rate per 100,000)	P-Value
Ontario (Total)	**14,634,260**	**1,162 (7.9)**	**2,050 (14.0)**	**<0.01**
Algoma Public Health	114,395	15 (13.1)	42 (36.7)	**<0.01**
Brant County Health Unit	152,733	27 (17.7)	30 (19.6)	0.79
Chatham-Kent Public Health	105,385	6 (5.7)	13 (12.3)	0.26
City of Hamilton Public Health Services	584,765	77 (13.2)	110 (18.8)	**0.02**
Durham Region Health Department	701,760	52 (7.4)	75 (10.7)	0.05
Eastern Ontario Health Unit	209,678	7 (3.3)	16 (7.6)	0.09
Grey Bruce Health Unit	166,974	15 (9.0)	24 (14.4)	0.20
Haldimand-Norfolk Health Unit	112,101	8 (7.1)	17 (15.2)	0.11
Haliburton, Kawartha, Pine Ridge District Health	186,520	17 (9.1)	30 (16.1)	0.08
Halton Region Public Health	607,042	21 (3.5)	33 (5.4)	0.13
Hastings Prince Edward Public Health	165,588	11 (6.6)	26 (15.7)	**0.02**
Huron Perth Health Unit	138,715	1 (0.7)	6 (4.3)	0.13
Kingston, Frontenac and Lennox & Addington Public Health	211,243	22 (10.4)	33 (15.6)	0.18
Lambton Public Health	130,153	16 (12.3)	34 (26.1)	**<0.01**
Leeds, Grenville & Lanark District Health Unit	171,109	4 (2.3)	15 (8.8)	**0.02**
Middlesex-London Health Unit	497,806	49 (9.8)	80 (16.1)	**<0.01**
Niagara Region Public Health	466,255	71 (15.2)	124 (26.6)	**<0.01**
North Bay Parry Sound District Health Unit	129,183	14 (10.8)	47 (36.4)	**<0.01**
Northwestern Health Unit	81,963	6 (7.3)	14 (17.1)	0.12
Ottawa Public Health	1,033,679	52 (5.0)	115 (11.1)	**<0.01**
Peel Public Health	1,569,190	85 (5.4)	134 (8.5)	**<0.01**
Peterborough Public Health	144,431	22 (15.2)	37 (25.6)	0.07
Porcupine Health Unit	85,295	16 (18.8)	33 (38.7)	**0.02**
Public Health Sudbury & Districts	200,347	47 (23.5)	88 (43.9)	**<0.01**
Region of Waterloo Public Health	571,973	41 (7.2)	82 (14.3)	**<0.01**
Renfrew County and District Health Unit	108,422	3 (2.8)	9 (8.3)	0.15
Simcoe Muskoka District Health Unit	583,736	76 (13.0)	109 (18.7)	**0.02**
Southwestern Public Health	207,698	15 (7.2)	20 (9.6)	0.50
Thunder Bay District Health Unit	154,473	31 (20.1)	55 (35.6)	**0.01**
Timiskaming Health Unit	33,235	4 (12.0)	6 (18.1)	0.75
Toronto Public Health	3,063,359	226 (7.4)	455 (14.9)	**0.00**
Wellington-Dufferin-Guelph Public Health	303,466	25 (8.2)	24 (7.9)	>0.99
Windsor-Essex County Health Unit	418,581	33 (7.9)	56 (13.4)	**0.02**
York Region Public Health	1,223,007	47 (3.8)	58 (4.7)	0.33

NOTE

* Includes confirmed and suspected opioid-related deaths, the distribution of which may vary by geographic region.