Knowledge Update

BC Centre for Disease Control
Provincial Health Services Authority

Topic	Health system contacts and disease diagnoses among people who died of unregulated drug poisoning in BC in 2023
Date	October 27, 2025
Data source	Overdose Surveillance Mart in PANDA
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Key messages

- Most (86%) adults aged 19-79 years who had an unregulated drug death in 2023 had contact with the health care system in the year before death. Use of primary care and pharmacy services were most common, followed by emergency department and hospital care. Less than half (44%) of decedents had a health care encounter related to substance use in the year before death.
- Approximately half of decedents had ever received health care for opioid use disorder, and more than one-third had received health care for stimulant use disorder.
- Most decedents with opioid use disorder were dispensed opioid agonist therapy in the year before death. Fewer than one in ten decedents received opioid prescribed alternatives in the year before death.
- Two-thirds of decedents had ever received health care for a mental health condition, with mood and anxiety disorders and depression being most common. One in six decedents had ever received care for schizophrenia or delusional disorders.
- People who died from drug toxicity in 2023 are connected to the health care system, but many encounters are unrelated to substance use.

Land Acknowledgement

We acknowledge the Title and Rights of BC First Nations who have cared for and nurtured the lands and waters for all time, including the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh Úxwumixw (Squamish Nation), and səl̓ílwətaʔ (Tsleil-Waututh Nation) on whose unceded, occupied, and ancestral territory BCCDC is located — and whose relationships with the land continue to this day. As a provincial organization, we also recognize and acknowledge the inherent Title and Rights of BC First Nations whose territories stretch to every inch of the lands colonially known as "British Columbia."

Rights Acknowledgement

We also recognize that BC is also home to many First Nations, Inuit, and Métis people from homelands elsewhere in Canada and have distinct rights, including rights to health which are upheld in international, national, and provincial law.

Thee Eat – Truth

BCCDC is working to address the consequences of colonial policies which have had lasting effects on all First Nations, Inuit, and Métis Peoples living in the province. Consistent with the Cost Salish teaching of *Thee Eat* (truth) gifted to PHSA by Coast Salish Knowledge Keeper Sulksun, we recognize that ongoing settler colonialism in BC undermines the inherent Title and Rights of BC First Nations and Indigenous Peoples who live in BC. The In Plain Sight report found widespread systemic racism against Indigenous people in health care; this stereotyping, discrimination and prejudice results in a range of negative impacts, harm, and even death. While the data shown in this report represent BC residents and people who died in BC – including Indigenous people – there is no stratification by Indigeneity and as such, the results are not reflective of the situation for First Nations, Métis, and Inuit Peoples and communities.

For information on the First Nations Health Authority's approach to harm reduction and the toxic drug crisis, please see their website FNHA Harm Reduction and the Toxic Drug Crisis. For information on public health surveillance indicators pertaining to Métis Peoples in BC, please see: Taanishi kiiya? Miiyayow Métis saantii pi miyooayaan didaan - BC Métis Public Health Surveillance Program–Baseline Report, 2021.

Introduction

This analysis uses linked administrative data to describe health system contacts and the prevalence of selected health conditions for adults in British Columbia who had an unregulated drug death in 2023, and the general population in British Columbia.

This analysis was a partnership between BC Centre for Disease Control and the BC Coroners Service.

Study Design and Methods

This analysis used data from PHSA PANDA's Overdose Surveillance Mart to describe the frequency of selected health service contacts and health diagnoses for people who had an unregulated drug death in 2023 compared to the general population in British Columbia. We used data from PharmaNet (PNet) for prescription dispensations, Medical Services Plan (MSP) for primary care visits, Discharge Abstract Database (DAD) for hospital (acute care) discharges, and National Ambulatory Care Reporting System (NACRS) for emergency department visits. Data availability and complete definitions are described in the Appendix.

Decedents were identified using data from the British Columbia Coroners Service. All confirmed or suspected unregulated drug deaths between January 1, 2023 and December 31, 2023 for people between the ages of 19 and 79 at the time of death are included.

The general population reflects people in the Client Roster who were between the ages of 19 and 79, had no history of opioid use disorder, and were alive on January 1, 2024.

Health service contacts of interest included: dispenses of opioid agonist treatment (OAT) or opioid prescribed alternatives to the toxic supply (prescribed alternatives, PA); primary care visits, acute care discharges, emergency department visits, or prescription dispensations for any reason; primary care visits related to substance use; acute care discharges for opioid or stimulant poisoning; and acute care discharges or primary care visits related to selected mental health conditions.

Diagnoses of interest included: substance use disorder (excluding alcohol and tobacco use disorders), opioid use disorder, stimulant use disorder, mood and anxiety disorders, depression, and schizophrenia and delusional disorders.

Cell counts between 0 and 4 are reported as <5, per Ministry of Health policy.

Findings

Health care contacts

In the year before death, 85.7% of decedents interacted with the health care system for any reason (n=2,179). Decedents who accessed health services had a median of 17 visits per year (interquartile range 35), with their most recent contact occurring a median of 16 days before death (IQR 56, Table 1). In the general population, 76.5% (n=2,524,091) of people interacted with the health system in 2023, with a median of 7 visits per person (IQR 11).

The most common types of health care contacts were:

- *Primary care visits* (83.9% of decedents vs. 75.7% general population). The median number of visits for decedents was higher, and more variable, than in the general population (15 vs. 7 visits, respectively). For decedents, their most recent primary care visit occurred a median of 19 days before death (IQR 64).

- *Prescription dispensations* (81.9% of decedents vs. 66.7% general population, Table 2). The median number of days with a pharmaceutical dispensation for decedents was four times higher, and the number of dispenses more variable, than for the general population. Decedents received pharmacy dispenses on 19 days in the year before death (IQR 60) compared to 5 days with pharmacy dispenses in the general population (IQR 8). Decedents who received OAT or opioid prescribed alternatives had the largest median number of dispenses (58, IQR 203), but the dispenses of other medications were also frequent (median 13, IQR 38). For decedents, their most recent prescription dispensation occurred a median of 17 days before death (IQR 64).

- *Emergency department visits* (59.5% of decedents vs. 16.1% general population). The median number of visits was higher for decedents (median 3, IQR 5) compared to the general population (median 1, IQR 1). For decedents, their most recent emergency department visit occurred a median of 52 days before death (IQR 133).

- *Hospital discharges* (32.7% of decedents vs. 4.5% general population). The median number of hospital discharges was similar for decedents (1, IQR 2) and the general population (1, IQR 0). For decedents, their most recent hospital discharge occurred a median of 89 days before death (IQR 179).

In the year before death, less than half (45.3%, n=1,151) of decedents had a health care visit related to substance use. Among the general population, less than one percent of people (0.5%, n=17,203) had a health care visit related to substance use in 2023. Decedents with substance-use related health encounters had a

median of 8 visits (IQR 33), with the most recent visit a median of nine days before death (IQR 33). Among decedents, primary care visits related to substance use were common, but hospital discharges related to opioid poisoning were infrequent (44.3% vs. 3.9%, respectively. Table 1).

- Among decedents with a primary care visit in the year before death, half (52.8%, 1,127/2,133) had a visit related to substance use. In the general population, less than one percent (0.7%, 16,959/2,497,372) of people with a primary care visit had a visit related to substance use. For decedents, their most recent primary care visit for substance use occurred a median of nine days before death (IQR 33).

- Among decedents who were hospitalized in the year before death, one in ten had a discharge related to opioid poisoning (12.0%, 100/832). In the general population, less than one percent of people discharged from hospital in 2023 had a visit for opioid poisoning (0.3%, 282/147,021).

- Substance use disorders were the leading reason for hospitalization among decedents (34.1%, 284/832 of decedents hospitalized) and the third most common reason among the general population (3.5%, 5,209/147,021 of people hospitalized) (Table 3).

Substance use disorder, opioid agonist treatment, and opioid prescribed alternatives

Two-thirds of decedents had engaged with the health system for a substance use disorder diagnosis in their lifetime (67.6%, n=1,718), and nearly two-fifths (39.2%, n=996) received medical care for SUD in the year before death (Table 4). Health contacts related to alcohol and tobacco use disorders were excluded.

Sixty percent of decedents received medical care for an opioid use disorder (OUD) and/or stimulant use disorder (StUD) in their lifetime (n=1,527), and more than one-third received health care for these reasons in the year before death (36.0%, n=916. Table 4).

- Almost half (47.7%, n=1,213) of decedents had been diagnosed with OUD in their lifetime, and 28.9% (n=735) received care for OUD in the year before death. The general population excluded people with OUD.

- More than one in three decedents (37.6%, n=955) had been diagnosed with StUD in their lifetime, and 15.8% (n=402) of decedents received care in the year before death. Less than one percent of the general population had a lifetime diagnosis of StUD (0.6%, n=20,309) and a small proportion received care for this diagnosis in 2023 (0.1%, n=3,413).

Among decedents with OUD, most (59.6%, 732/1,213) were dispensed opioid agonist treatment (OAT) in the year before death, and a smaller proportion were dispensed OAT in the month before death (30.0%, n=364. Table 5). Methadone (33.6%, n=407) and buprenorphine/naloxone (26.3%, n=319) were the most dispensed OAT medications in the year before death.

Very few (8.7%, 222/2,543) decedents received opioid prescribed alternatives to the toxic supply in the year before death, and nearly all received hydromorphone (8.4%, n=213). In the month before death, 3.7% (n=94) of decedents were dispensed PA opioids (Table 6). Less than 0.005% of the general population were dispensed PA opioids in 2023 (99/3,298,251).

Mental health conditions

Two-thirds (65.4%, 1,664/2.543) of decedents had a diagnosis of depression, mood and anxiety disorders, or schizophrenia and delusional disorders. Mood and anxiety disorders (64.5%) and depression (55.9%) were most common, followed by schizophrenia and delusional disorders (15.9%, Table 7). In contrast, less than one-third of the general population has any of these diagnoses (29.0%, 956,471/3,298,251). In the general population, mood and anxiety disorders and depression are the most common mental health diagnoses (28.9% and 22.4%, respectively), while schizophrenia and delusional disorders are rare (1.0%, 31,663/3,298,251).

One-third (34.3%) of decedents and one tenth of the general population (11.6%) received health care for a mental health condition in 2023 (Table 7). Considering only decedents with a mental health diagnosis, more than half (52.3%, 871/1,664) received care in the year before death, but the proportion varied by diagnosis. Less than half of decedents with a mood and anxiety disorder or depression received care in the year before death (47.8% and 40.9%, respectively), but almost two-thirds (62.4%, 253/405) of decedents with schizophrenia and delusional disorders received care. In the general population, two-fifths (40.1%, 383,109/956,471) of people with a mental health diagnosis received care in 2023. The proportion of people who received care varied by diagnosis, ranging from 34.4% of people with depression to 46.5% of people with schizophrenia and delusional disorders.

Mood disorders (including depression) and schizophrenia were common reasons for hospitalization among decedents and the general population. Mood disorders were the fourth most common reason for hospitalization for both decedents and the general population (6.9% and 2.9% of hospitalized people, respectively). Schizophrenia was the second most common reason for hospitalization for decedents and the fifth most common in the general population (19.0% and 2.8% of hospitalized people, respectively. Table 3).

Interpretation

Nearly all decedents had contact with the health care system in the year before death, but less than half had encounters related to substance use. For adults who died of unregulated drug toxicity in 2023, 85.7% had a primary care visit, emergency department visit, or hospital discharge in the year before death; 76.5% of people in the general population had any of these visits in 2023. Not only did a larger proportion of decedents access health services, but they also typically had more contacts with each health service. By service type, the largest differences between decedents and the general population were for acute care discharges (33% of decedents vs. 5% of general population) and emergency department visits (60% of decedents vs. 16% of general population). Emergency and inpatient care settings can continue to work to identify people at risk of substance-related harms and meet their needs – including but not limited to medication continuation, withdrawal management, and overdose prevention.

Many decedents had been diagnosed with opioid use disorder or stimulant use disorder; however, 40% did not have diagnosed substance use disorders. Among people who died in 2023, 48% had a history of OUD, 38% had a history of StUD, and 60% had a history of either OUD or StUD. For people who died from drug toxicity between 2015 and 2019, 20% had been diagnosed with OUD and 21% with StUD (Palis et al., 2024). The algorithm used to identify people with OUD in BC health records was modified in 2024 (unlike the previous estimates, this estimate includes people identified by current or past use of OAT) and likely accounts for some of the increased prevalence of OUD (Desai et al., 2024). It is also possible that people without OUD have decreased their use of unregulated substances, thereby reducing their risk of death from drug toxicity and concentrating risk among those who have more difficulty ceasing substance use. Recent data from Ontario also indicate an elevated prevalence of substance use disorders among decedents. In that province, more than one-quarter of people who died from substance-related toxicity between July 2021 and June 2022 had opioid or stimulant use disorder documented in hospital records in the five years before death (26.5% and 25.4%, respectively, Holton et al., 2024). Among people without a diagnosed substance use disorder, we cannot identify how many would meet criteria for a substance use disorder but had not been diagnosed vs. how many used substances without meeting criteria for a substance use disorder.

Most decedents with opioid use disorder received opioid agonist treatment in the year before death. Among decedents with OUD, 60% received OAT in the year before death, but only 30% received this treatment in the month before death. Barriers to continuing with OAT are well documented and include daily pharmacy appointments and regular primary care appointments (Pearce et al., 2020; Piske et al., 2020). The large number of pharmacy dispensations for decedents who received OAT or prescribed alternatives is consistent with daily prescription dispenses (British Columbia Centre on Substance Use et al., 2023). It is important for the health and social service sectors to find ways to support people who choose OAT to remain engaged with this treatment as one way to stay separated from the unregulated drug supply.

Very few decedents received prescribed alternative opioids in the year (8.7%) or month (3.7%) before death. Of decedents who received PA opioids, more than 90% received hydromorphone tablets. Preliminary research suggests that PA may reduce individual reliance on the unregulated drug supply, reduce the frequency of substance-related harms including overdose and death, enhance autonomy to manage withdrawal and cravings, increase engagement in health and substance use care, facilitate connection to services (e.g., income assistance, housing), and improve social well-being (Ledlie et al., 2024; Slaunwhite et al., 2024). However, these potential benefits must be weighed against the potential for unintended harms for other populations, including the risk of diversion of medication (Office of the Provincial Health Officer, 2023). People who use substances have identified multiple barriers to accessing PA, including challenges finding a provider, accessing the clinic/health center and/or pharmacy (sometimes multiple times per day), and receiving a prescription with an appropriate type and dose to meet their needs (Ledlie et al. 2024).

The most common mental health conditions among decedents and the general population are the same, but there are large differences in prevalence. More than half of decedents in 2023 had a mood and anxiety disorder (64.5%), including depression (55.9%). This is an increase from 55.8% and 48.3%, respectively, for people who died between 2015 and 2019 (Palis et al., 2024). Similar to our finding, nearly two-thirds (64.1%) of substance-related toxicity decedents in Ontario between 2018 and 2022 had an outpatient visit for depression, mood, or anxiety disorders in the five years before death; the proportion of decedents with these health visits significantly decreased from 66.1% in 2018 to 62.6% in 2022 (Hamzat et al., 2025). Many BC decedents with these diagnoses – 47% of those with mood and anxiety disorders and 41% of those with depression – received health care for these conditions in the year before death. The prevalence of mood and anxiety disorders (28.9%) and depression (22.4%) in the general population was much lower than among decedents, as was the proportion of people who received health care for these conditions in the previous year. Substance use disorders and mood and anxiety disorders have overlapping symptoms and, when co-occurring, can present clinical challenges. This finding suggests that symptoms of anxiety or depression were more of a concern for decedents than in the general population.

Schizophrenia and delusional disorders are 15 times more common among decedents compared to the general population. The prevalence of this diagnosis is 1% in the general population compared to 15.9% of decedents. Data from Ontario also identify an elevated prevalence of schizophrenia among people who died from drug toxicity: between 2018 and 2022, 14.2% of decedents had an outpatient visit for psychotic disorders in the five years before death, and the proportion of decedents with outpatient visits for psychotic disorders increased over this period (Hamzat et al.,2025). Most people in BC with a diagnosis of schizophrenia or delusional disorder engage in health care – nearly two-thirds of decedents and nearly half of the general population with these diagnoses recently accessed health care. Delusional disorders can be caused by

substances, particularly stimulants and cannabis, and supports for people managing use of these substances can help reduce the need for health care related to delusional disorders.

People who died from drug toxicity were frequent users of the health care system; however, none of the services we assessed were accessed uniquely by people who experienced drug toxicity death. While the proportion of decedents accessing specific health services or with specific diagnoses is greater than in the general population, most people using these services did not have an unregulated drug death. Health care providers should consider asking all patients, especially those with any mental health or substance use concern, about their use of unregulated substances.

People who use substances have experienced stigma, discrimination, and disrespectful care when accessing the health care system (Heath et al., 2016; Meyerson et al., 2021; Moallef et al., 2023). There is an ongoing need for the health system – including health care providers, pharmacists, and non-clinical staff – to be a safe, compassionate, trauma-informed, and culturally safe place for people who use substances. The In Plain Sight report describes how Indigenous Peoples in BC experience the health care system and offers 24 recommendations for the health system (Turpel-Lafond et al., 2020), and there are seven calls to action for health included in the Truth and Reconciliation Commission of Canada (2015).

Limitations

- Unregulated drug death data from BCCS includes both open and closed cases. Data are subject to change as investigations are completed.

- Visits to emergency departments are under-estimated in this analysis, and the reason for visit was not analyzed because of incomplete information. NACRS does not include all visits to emergency departments in BC. In 2022/23, 30 emergency departments in BC submitted Level 2 data to NACRS (approximately 70% of Emergency Departments in BC) (Canadian Institute for Health Information, 2023). Of these, approximately 60% of visits have a documented discharge diagnosis (Government of Canada, 2025).

- DAD data reflect the number of discharges from acute care, not the number of hospitalization episodes - inter-facility transfers are counted as separate discharge events.

- The Chronic Disease Registry did not include data for the time period of interest; we applied these definitions to the data available in PANDA. PANDA includes fewer years of data than are available to the Ministry of Health and our prevalence estimates may differ from those available in the CDR.

- We used health administrative data to estimate the prevalence of selected health conditions. People may have substance use or mental health concerns and not seek medical care for many reasons. The reason(s) for health care episodes as reflected by diagnosis codes may be inaccurately documented, which could also bias these results.

- Using administrative data, we cannot determine why people discontinued a prescription, including OAT and PA opioids. Prescription medications may be discontinued because of patient choice, patient circumstance, provider discretion, or any combination thereof.

Supporting Information

Document citation

Kinniburgh B, Palis H, Desai R, Liu L, Ge W, Zhao B, Hu K, Loewen OK, Nabi M, Au S, Fraser M, Sidhu T, Tu A, Crabtree A. Health system contacts and disease diagnoses among people who died of unregulated drug poisoning in BC in 2023. Knowledge Update. Vancouver, BC: BC Centre for Disease Control, 2025.

Data steward(s) disclaimer

Access to data provided by the Data Stewards is subject to approval but can be requested for research projects through the Data Stewards or their designated service providers. All inferences, opinions, and conclusions drawn in this publication are those of the author(s), and do not reflect the opinions or policies of the Data Steward(s).

Acknowledgements

We acknowledge the assistance of the Provincial Health Services Authority, BC Ministry of Health, and BC Coroners Service staff involved in data access, procurement, and management. We gratefully acknowledge the residents of British Columbia whose data are integrated in the Overdose Surveillance Mart. We acknowledge the investigative efforts of the BC Coroners Service, specifically the Coroners and Research Team. We also gratefully acknowledge the people who are represented in these data and their families.

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Tables and Figures

Table 1. Selected health service contacts, British Columbia, two populations, 2023

	Decedents N=2,543			General Population N=3,298,251	
	Any visit in year before death N (%)	Number of visits in year before death† Median (IQR§)	Days between last visit and death† Median (IQR§)	Any visit in 2023 N (%)	Number of visits in 2023† Median (IQR§)
Any health service contact‡	2,179 (85.7%)	17 (35)	16 (56)	2,524,091 (76.5%)	7 (11)
Primary care visit, any reason*	2,133 (83.9%)	15 (32)	19 (64)	2,497,372 (75.7%)	7 (10)
Primary care visit related to substance use*	1,127 (44.3%)	8 (33)	9 (33)	16,959 (0.5%)	1 (1)
Emergency department visit††	1,512 (59.5%)	3 (5)	52 (133)	529,826 (16.1%)	1 (1)
Acute care discharge, any reason§§	832 (32.7%)	1 (2)	89 (179)	147,021 (4.5%)	1 (0)
Acute care discharge for opioid-involved poisoning§§	144 (5.6%)	1 (0)	94 (160)	376 (0.0%)	1 (0)
Acute care discharge for stimulant poisoning§§	12 (0.5%)	1 (0)	96 (150)	125 (0.0%)	1 (0)

† Among those with any visit in the year (before death).
§ Interquartile range.
‡ Includes primary care visits billed to MSP, emergency department visits, and inpatient (acute care) discharges. Excludes emergency department or inpatient discharges resulting in death, and MSP billings on the date of death.
* In the case of multiple visits billed on the same day, these are counted as one visit.
††Thirty emergency departments submitted NACRS Level 2 data in 2022/23 (approximately 70% of Emergency Departments in BC).
§§ DAD data reflect the number of discharges, not the number of hospitalization episodes - inter-facility transfers are counted as separate discharge events.

Table 2. Pharmaceutical dispenses, British Columbia, two populations, 2023

	Decedents N=2,543			General Population N=3,298,251	
	Any dispense in year before death N (%)	Number of dispenses in year before death[†‡] Median (IQR[§])	Days between last dispense and death[†‡] Median (IQR[§])	Any dispense in 2023 N (%)	Number of dispenses in 2023[†] Median (IQR[§])
Any pharmacy dispensation	2,082 (81.9%)	19 (60)	17 (64)	2,199,839 (66.7%)	5 (8)
Dispense of OAT or opioid prescribed alternative	747 (29.4%)	58 (203)	28 (109)	99 (0.0%)	5 (22)
Dispense of other medications	2,047 (80.5%)	13 (38)	20 (75)	2,199,839 (66.7%)	5 (8)

[†] Among those with any pharmaceutical dispensation in the year (before death). Dispenses on the same day are counted as a single dispense.
[§] Interquartile range.
[‡] Excludes PharmaNet dispenses on date of death.

Table 3. Reason for hospitalization[†] among those with a hospital discharge[§]. British Columbia, two populations, 2023.

Decedents N=832		General Population N=147,021	
Reason for hospitalization	**N (%)**	**Reason for hospitalization**	**N (%)**
Substance use disorders	284 (34.1%)	Giving birth	38,578 (26.2%)
Schizophrenia, schizotypal and delusional disorders	158 (19.0%)	Osteoarthritis of the knee	5,856 (4.0%)
COPD and bronchitis	61 (7.3%)	Substance use disorders	5,209 (3.5%)
Mood (affective) disorders	57 (6.9%)	Mood (affective) disorders	4,239 (2.9%)
Pneumonia	53 (6.4%)	Schizophrenia, schizotypal and delusional disorders	4,177 (2.8%)
Other mental health disorders	28 (3.4%)	Acute myocardial infarction	3,539 (2.4%)
Epilepsy	20 (2.4%)	Coxarthrosis (arthrosis of hip)	3,425 (2.3%)
Heart failure	20 (2.4%)	Diseases of the appendix	3,123 (2.1%)
Symptoms and signs involving emotional state	13 (1.6%)	Other mental health disorders	2,478 (1.7%)
Convulsions, not elsewhere classified	12 (1.4%)	Gallstones	2,465 (1.7%)

† Defined according to the Canadian Institute for Health Information. Hospital stays in Canada, 2023–2024. Accessed August 22, 2025.

§ Individuals are counted in multiple categories if they had multiple hospitalization events for different diagnoses.

Table 4. Prevalence of, and recent healthcare for, selected substance use disorders. British Columbia, two populations, 2023.

	Decedents N=2,543		General Population N=3,298,251	
	Diagnosis in lifetime[†] N (%)	Recent healthcare[§] N (%)	Diagnosis in lifetime[†] N (%)	Recent healthcare[§] N (%)
Substance use disorder[‡]	1,718 (67.6%)	996 (39.2%)	69,648 (2.1%)	8,179 (0.2%)
Opioid use disorder	1,213 (47.7%)	735 (28.9%)	n/a	n/a
Stimulant use disorder	955 (37.6%)	402 (15.8%)	20,309 (0.6%)	3,413 (0.1%)
Opioid and/or stimulant use disorder	1,527 (60.0%)	916 (36.0%)	n/a	n/a

[†] Reflects all available data, including records on date of death. See Appendix for details.

[§] Care includes outpatient visits billed to MSP or inpatient (acute care) discharges. For decedents, excludes inpatient discharges resulting in death and MSP billings on the date of death.

[‡] Excludes alcohol and tobacco use disorders.

Table 5. Dispense of opioid agonist treatment (OAT), in the month and year prior to death. British Columbia, 2023.

	Decedents with Opioid Use Disorder N=1,213	
	Dispense in month before death N (%)	Dispense in year before death N (%)
Any OAT	364 (30.0%)	732 (59.6%)
Methadone	189 (15.6%)	407 (33.6%)
Buprenorphine	11 (0.9%)	57 (4.7%)
Buprenorphine/naloxone	106 (8.7%)	319 (26.3%)
Slow-release oral morphine	74 (6.1%)	176 (14.5%)
Injectable diacetylmorphine	<5	7 (0.6%)
Injectable hydromorphone	<5	5 (0.4%)
Hydromorphone tablets[†]	<5	21 (1.7%)

[†] Hydromorphone tablets provided in treatment context (TiOAT) are distinct from dispensations of hydromorphone as prescribed alternatives.

Table 6. Dispense of opioid prescribed alternatives to the toxic supply in the month and year prior to death. British Columbia, two populations, 2023.

	Decedents N=2,543		General Population N=3,298,251	
	Dispense in month before death N (%)	Dispense in year before death N (%)	Dispense in December 2023 N (%)	Dispense in 2023 N (%)
Any opioid prescribed alternative	94 (3.7%)	222 (8.7%)	28 (0%)	99 (0%)
Hydromorphone tablets†	86 (3.4%)	213 (8.4%)	17 (0%)	62 (0%)
Morphine	6 (0.2%)	21 (0.8%)	<5	<5
Fentanyl	<5	8 (0.3%)	<5	5 (0%)
Oxycodone	6 (0.2%)	14 (0.6%)	6 (0%)	12 (0%)
Other Opioids	<5	<5	<5	17 (0%)

† Hydromorphone tablets provided in treatment context (TiOAT) are distinct from dispensations of hydromorphone as prescribed alternatives.

Table 7. Prevalence of, and recent healthcare for, selected mental health conditions. British Columbia, two populations, 2023.

	Decedents N=2,543		General Population N=3,298,251	
	Diagnosis in lifetime† N (%)	Recent healthcare§ N (%)	Diagnosis in lifetime† N (%)	Recent healthcare§ N (%)
Selected mental health conditions	1,664 (65.4%)	871 (34.3%)	956,471 (29.0%)	383,109 (11.6%)
Mood & anxiety disorders	1,640 (64.5%)	784 (30.8%)	953,451 (28.9%)	375,926 (11.4%)
Depression	1,421 (55.9%)	581 (22.8%)	737,672 (22.4%)	253,976 (7.7%)
Schizophrenia & delusional disorders	405 (15.9%)	253 (9.9%)	31,663 (1.0%)	14,721 (0.4%)

† Reflects all available data, including records on date of death. See Appendix for details.

§ Care includes outpatient visits billed to MSP or inpatient (acute care) discharges. Excludes inpatient discharges resulting in death and MSP billings on the date of death.

Appendix

Data sources

PANDA does not include all available years from health administrative datasets. In this analysis, 'lifetime' or 'at any time' reflects only the following date ranges:

- Discharge Abstract Database: April 1, 2001 to December 31, 2023
- Medical Services Plan: April 1, 2008 to December 31, 2023
- PharmaNet: April 1, 2008 to December 31, 2023
- National Ambulatory Care Reporting System: April 1, 2011 to December 31, 2023

Definitions

Inclusion criteria:

Unregulated drug deaths: people between the ages of 19 and 79 who died from unregulated drugs in British Columbia between January 1 and December 31, 2023. Data extracted December 19, 2024 and current to October 2024.

General population: people in the Client Roster between the ages of 19 and 79 who were alive as of January 1, 2024 and who had no history of opioid use disorder (see definition 18, below). Data extracted December 19, 2024.

Indicators:

The following records were excluded from counts of service utilization: hospital admissions during which the person died, post-mortem hospital admissions, emergency department visits during which the person died, MSP records on date of death, and PharmaNet dispenses on date of death.

1. **Any health service visit** – person has any record meeting definition 2, 4, or 5 in the specified time period.
2. **Primary care visit, any reason** – person has any record in MSP data in the specified time period. Multiple records on one day are counted as a single record.
3. **Primary care visit related to substance use** - person has any record in MSP meeting either of the following criteria in the specified time period: (ICD-9 code starts with 292.0, 292.1, 292.2, 292.8, 292.9, 304, 305.2, 305.3, 305.4, 305.5, 305.6, 305.7, 305.8, 305.9) OR (ICD-9 code is 292, 304, or 305). Multiple records on one day are counted as a single record.
4. **Emergency department visit, any reason** - person has an unplanned emergency department record in NACRS in the specified time period.
5. **Acute care discharge, any reason** – person has an eligible discharge from acute care in the specified time period. Inter-facility transfers are counted as separate discharges.
6. **Acute care discharge for opioid-involved poisoning** – acute care discharges (definition 5) with a significant diagnosis code for opioid poisoning (ICD-10-CA code is T40.0, T40.1, T40.20, T40.21, T40.22, T40.43, T40.28, T40.3, T40.40, T40.41, T40.48, T40.6). The hospitalization may also have a significant diagnosis code for stimulant poisoning.

7. **Acute care discharge for stimulant poisoning** – acute care discharges (definition 5) with a significant diagnosis code for stimulant poisoning (ICD-10-CA code is T40.5, T43.60, T43.68, T43.69) without a significant diagnosis code for opioid poisoning.
8. **Any prescription dispensation** – person has any pharmaceutical dispensation recorded in PharmaNet in the specified time period.
9. **Dispense of opioid agonist treatment (OAT)** - based on an OAT Flag developed by Pharmaceutical Analytics at the Ministry of Health, dispenses of OAT are identified using a combination of data elements including drug identification number, product information number, prescriber type, pharmacy, date, and directions for use in PharmaNet. See BCCDC's data notes for additional information.
10. **Dispense of opioid prescribed alternatives to the toxic supply** – based on the Ministry of Health definition, dispensation of opioid prescribed alternatives is identified in one of two ways. Clients can be identified using the Risk Mitigation Guidance algorithm that uses a combination of data elements including drug identification number, product information number, directions for use, previous dispenses, and dispensation date. Clients are also identified if eligible dispenses include a Safer Alternative intervention code. See BCCDC's data notes for additional information.
11. **Dispensation of OAT or PA** – person has a pharmaceutical dispensation recorded in PharmaNet for any medication meeting definition 9 or 10 in the specified time period.
12. **Dispensation of all other prescriptions –** person has a pharmaceutical dispensation recorded in PharmaNet for any medication that does not meet definition 9 or 10 in the specified time period.
13. **Any visit (or dispensation) in year / 1 month (prior to death)**
    - For decedents, a person had any visit if the visit date was within 1 month or 1 year prior to the death date. For the General Population, we report whether the person had a visit in December 2023 (as 1 month) or anytime between January 1 and December 31, 2023 (as 1 year).
    - This same logic is applied for all pharmaceutical dispensation indicators (definitions 8-12).
14. **Number of visits in year (prior to death)**
    - For decedents who had at least one visit in the year prior to death (see definition 1), we calculated the total number of visits between the date of death and one year prior (date of death-365 days), then calculated the median number of visits and interquartile range for people who had one or more visits. Multiple primary care visits billed on the same day are counted as one visit.
    - For people in the General Population who had at least one visit in 2023 (see definition 1), we calculated the total number of visits between January 1 and December 31, 2023, then calculated the median number of visits and interquartile range for people who had one or more visits. Multiple primary care visits billed on the same day are counted as one visit.
15. **Number of pharmaceutical dispensations in year (prior to death)**
    - For decedents who had at least one pharmaceutical dispensation in the year prior to death (see definition 8), we calculated the total number of days between the date of death and one year prior (date of death-365 days) where at least one prescription was dispensed, then calculated the median number of dispenses and the interquartile range for people who had one or more dispensations. All dispenses on the same date are counted together as one pharmaceutical dispensation.
    - For people in the General Population who had at least one pharmaceutical dispensation in 2023 (see definition 8), we calculated the total number of days between January 1 and December 31, 2023 where at least one prescription was dispensed, then calculated the median number of

dispenses and the interquartile range for people who had one or more dispensations. All dispenses on the same date are counted together as one pharmaceutical dispensation.
    - This indicator can also be thought of as the number of days where any pharmaceutical was dispensed.

16. **Days between last visit (or dispensation) and death** – Among decedents who had at least one visit, the last visit prior to the person's death date was used to calculate the number of days between the visit date and death date for each person. We then calculated the median number of days between the last visit and death and interquartile range among people who had a visit. Not reported for general population.
    - This same logic is applied to when identifying recent pharmaceutical dispensations (definitions 8-12).
17. **Substance use disorder (SUD)** – a person meets at least one of the following criteria for substance use disorders other than alcohol or tobacco use disorder:
    - 2 MSP records within a 1-year period for SUD (ICD-9 code starts with 292.0, 292.1, 292.2, 292.8, 292.9, 304, 305.2, 305.3, 305.4, 305.5, 305.6, 305.7, 305.8, 305.9 OR ICD-9 code is 292, 304, 305) OR
    - 1 DAD record at any time for SUD (ICD-10-CA code begins with F11, F12, F13, F14, F15, F16, F17, F18, F19).
18. **Opioid use disorder (OUD)** – person between the ages of 12 and 79 meets at least one of the following criteria:
    - 2 MSP records within a 3-year period for OUD (ICD-9 code starts with 304.0, 304.7, 305.5 OR fee item code is 15039, 39, 13013, 13014), OR
    - 1 DAD record at any time for OUD (ICD-10-CA code begins with F11), OR
    - 1 NACRS record at any time for OUD (CED-DxS code begins with F11), OR
    - 1 OAT dispensation at any time (definition 9).
    - For decedents, records that overlap the date of death are included.
19. **Stimulant use disorder (StUD)** – person between the ages of 12 and 79 meets at least one of the following criteria:
    - 2 MSP records within a 3-year period for StUD (ICD-9 code starts with 304.2, 304.4, 305.6, 305.7) OR
    - 1 DAD record at any time for StUD (ICD-10-CA code begins with F14, F15), OR
    - 1 NACRS record at any time for StUD (CED-DxS code begins with F14, F15).
    - For decedents, records that overlap the date of death are included.
20. **Opioid use disorder and/or stimulant use disorder** – person meets the criteria specified in definition 18 and/or 19.
21. **Any mental health condition** – person meets the criteria specified in definitions 22, 23, or 24. For decedents, records that overlap the date of death are included.
22. **Mood & anxiety disorders** – a person meets at least one of the following criteria:
    - 1 or more DAD record(s) for a mood or anxiety disorder (ICD-10-CA code begins with F30, F31, F32, F33, F34, F38, F39, F40, F41, F42, F43, F44, F45, F48, F68), OR
    - 2 or more MSP records for a mood or anxiety disorder within one year (ICD-9 code begins with 296, 300, 311 or MSP Dx Code is 50B).
23. **Depression** – a person meets at least one of the following criteria:
    - 1 or more DAD record(s) for depression (ICD-10-CA code begins with F32, F33), OR

- 2 or more MSP records for depression within one year (ICD-9 code begins with 296, 311, or MSP DX Code is 50B).

24. **Schizophrenia & delusional disorders** – a person meets at least one of the following criteria:
    - 1 or more DAD record(s) for schizophrenia/delusional disorders (ICD-10-CA code begins with F20, F21, F23, F25), OR
    - 2 or more MSP records for schizophrenia/delusional disorders at least 30 days apart within two years (ICD-9 code begins with 295).
25. **Care in the previous year (year before death)** – for people who met the criteria for the listed condition (definitions 17-24), the last record with diagnostic codes for that condition was found for each person. A decedent is considered to have received recent care if the date for that last record was within the year prior to death. A person in the general population is considered to have recent care if the date for the last record was in 2023.
26. **Diagnosis in lifetime** – People meeting the criteria for the listed condition (definitions 17-24) at any point using data holdings available in the Overdose Mart:
    - Discharge Abstract Database: April 1, 2001 to December 31, 2023
    - Medical Services Plan: April 1, 2008 to December 31, 2023
    - PharmaNet: April 1, 2008 to December 31, 2023
    - NACRS: April 1, 2011 to December 31, 2023.
27. **Median** – The median represents the mid-point of a distribution – half of all values will be above this number and half will be below. The median is less influenced by outliers than the mean (average).
28. **Interquartile range** – This measure of statistical dispersion reflects the difference between the 75^{th} and 25^{th} percentiles of a data distribution. The value of the interquartile range increases with the amount of variability in the data.