

YOUTH UNREGULATED DRUG TOXICITY DEATHS IN BRITISH COLUMBIA

January 1, 2017 – December 31, 2022

Introduction

In British Columbia, unintentional youth unregulated drug toxicity deaths have increased since 2016. One of the main drivers of this increase was the introduction of the toxic synthetic opioid, fentanyl, into the unregulated drug market.

The BC Coroners Service (BCCS) is mandated to investigate all deaths of children under the age of 19 that occur in B.C. A coroner's investigation identifies the decedent and determines the cause and manner of death, along with when, where and by what means the death occurred. The [Coroners Act](#) also mandates the review of all deaths of children under 19 years of age.

This report reviews all accidental and undetermined youth unregulated drug toxicity deaths that occurred in B.C. between January 1, 2017, and December 31, 2022. During that time, there were 142 suspected youth unregulated drug toxicity deaths. This review was completed through analysis of BCCS investigative records, toxicology reports, and post-mortem examinations, as well as through available medical and social service case records secured by BCCS under [section 11\(1\) of the Coroners Act](#).

When investigating suspected unregulated drug toxicity deaths, the coroner typically attends the scene of death to gather information about the circumstances and conduct an examination of the scene and the decedent. Subsequently, medical history is gathered, including any history of substance use, and toxicology testing is always completed.

Inclusion Criteria

The unregulated drug toxicity category includes the following:

- Controlled drugs: fentanyl, heroin, cocaine, MDMA, methamphetamine, etc.
- Medications not prescribed to the decedent but obtained/purchased from unknown means or where the origin of drug is unknown.
- Combinations of the above with prescribed medications.
- Includes accidental or undetermined deaths.
- Deaths were excluded if the death was suspected to be due to intentional self-harm or due solely to one's own prescribed medications.

Data Limitations & Confidentiality

The BCCS operates in a live database environment. The preliminary data presented within this review is based on open and closed BCCS case files as of May 26, 2023. It includes analysis of BCCS investigative notes, toxicology results, medical records and other documents collected. It also includes analysis of the investigative protocol data, an additional set of questions used by coroners to provide more insight into

deaths due to unregulated substances. Some of the deaths were in the early stage of investigation; therefore, the information was incomplete.

This review presents data subsets with small numbers which should be interpreted with caution as when the 'n' is low, conclusions are less certain than with larger groups. Provisions under the *Coroners Act* and the *Freedom of Information and Protection of Privacy Act* allow for the BCCS to disclose information to meet its legislative mandate and support the findings and recommendations generated by the review process. For the purposes of this report, information is presented in aggregate. Details that could identify individuals have been omitted to respect the privacy of the youth who died and their families. The BCCS is sensitive to the privacy of individuals and families that it serves and proceeds with caution when reporting findings.

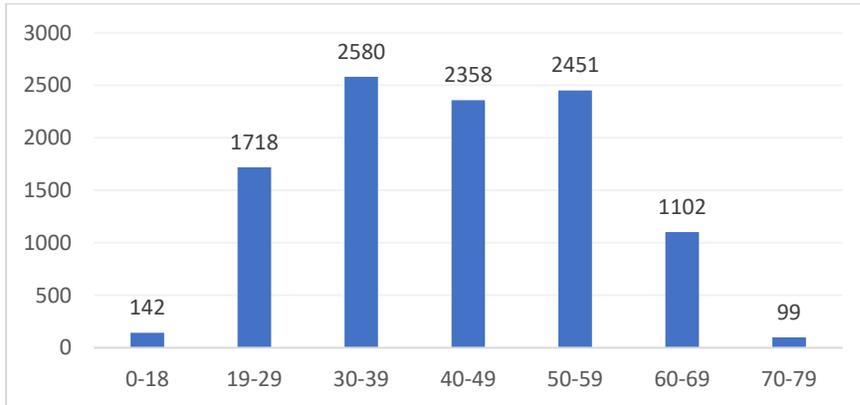
Summary

- From January 1, 2017, to December 31, 2022, there were 142 unregulated drug toxicity deaths in B.C. of persons younger than 19 years of age.
- The number of deaths equates to about 24 deaths a year.
- Unregulated drug toxicity was the leading cause of unnatural death among youth during this period.
- Males accounted for 54% of deaths, and 62% were individuals between 17-18 years of age.
- By health authority, the largest number of deaths occurred in Fraser Health, followed by Island Health and Interior Health.
- The townships experiencing the highest number of unregulated drug toxicity deaths are Greater Victoria, Vancouver, and Surrey.
- More than 70% of the deaths occurred within private residences.
- More than half of the deaths occurred among youth using alone.
- 73% of decedents were in receipt of current or previous services offered through the Ministry of Children and Family Development.
- 67% of decedents had a mental health diagnosis or anecdotal evidence of a mental health disorder.
- Fentanyl or its analogues were detected in 78% of all deaths, either alone or in combination with other substances.
- Hydromorphone was detected in 12 (8%) deaths.
 - In 8 (67%) of those deaths, hydromorphone was found in low concentrations.
 - In all 12 deaths, at least one other substance was found that contributed to the death.

Youth Unregulated Drug Toxicity Deaths

From 2017 to 2022, a total of 10,453 unregulated drug toxicity deaths were reported to the BC Coroners Service. Of those, 142 deaths (1.4%) involved youth under the age of 19 years.

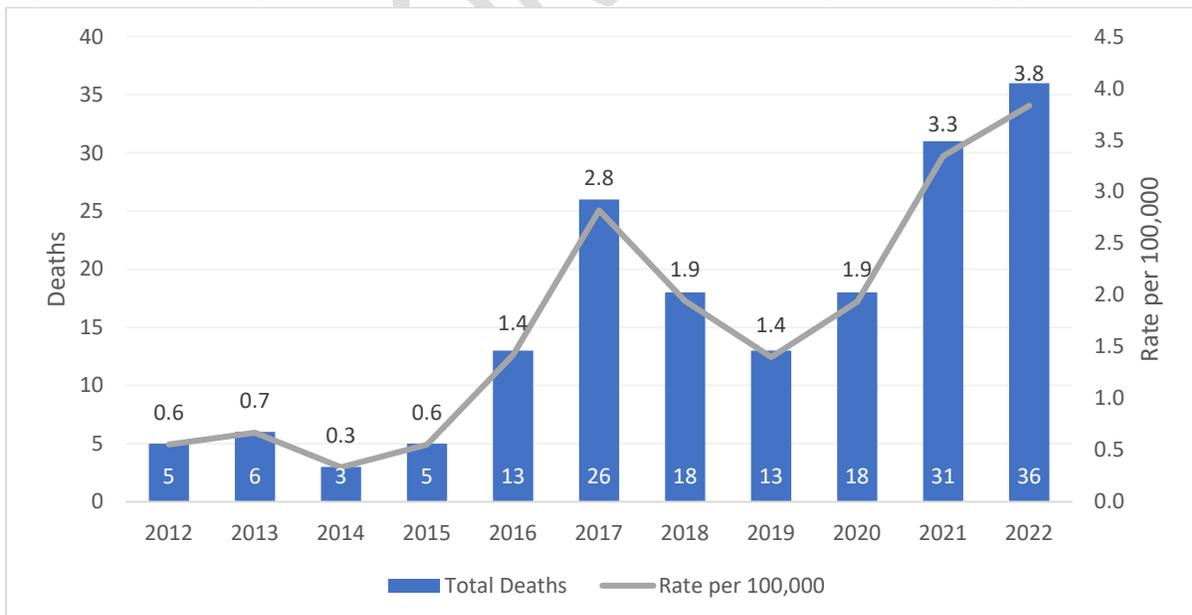
Figure 1: Unregulated drug toxicity deaths by age from 2017-2022



*3 of unknown age at time of publication but are not considered <19 years

The 142 youth unregulated drug toxicity deaths in 2017-2022 averages to about 24 deaths per year. The average is more than triple the average number of deaths in the previous 5-years between 2012-2016 (6.4 deaths per year). The rate of death has increased from 0.6 per 100,000 in 2012 to 3.8 per 100,000 in 2022.

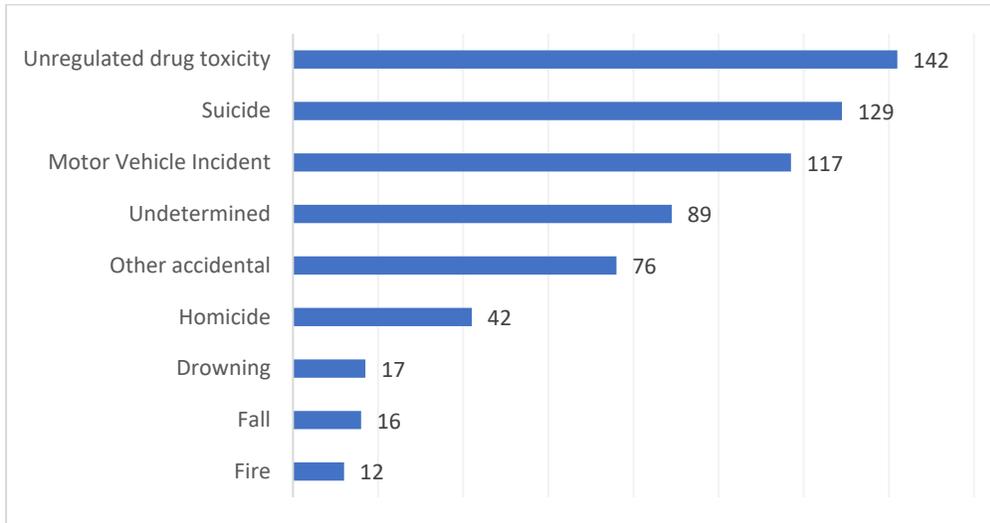
Figure 2: Youth unregulated drug toxicity deaths and rates of death per 100,000 by year 2012-2022



Unnatural Causes of Death

Unregulated drug toxicity was the leading cause of unnatural deaths among youth from 2017-2022. Suicide and motor vehicle incidents were the second and third leading causes of unnatural deaths, respectively.

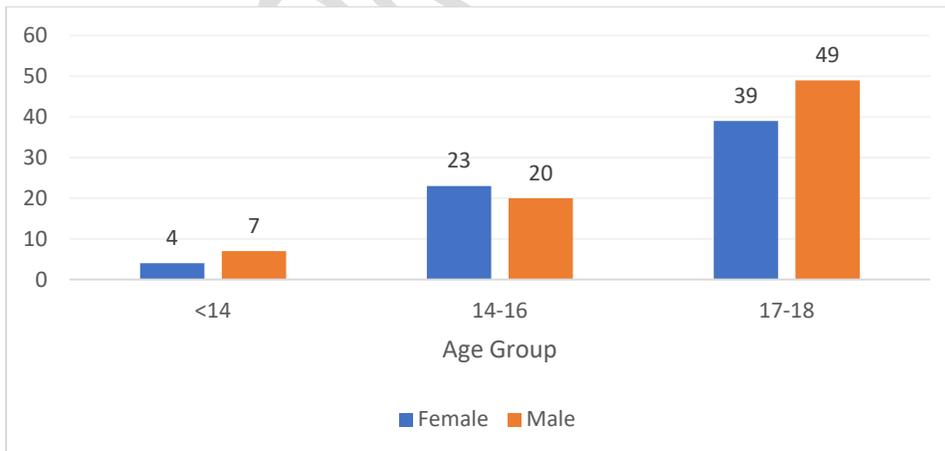
Figure 3: Unnatural Causes of Death among Youth, 2017-2022



Age & Biological Sex

Youth between 17-18 years of age accounted for 62% (88) of deaths and males accounted for 54% (76) of deaths. On balance, the split number of male (76) and female (66) decedents was much closer than in adults, where males account for approximately 80% of unregulated drug toxicity deaths.

Figure 4: Number of Unregulated Drug Toxicity Deaths by Age and Sex, 2017-2022





Health Authority of Injury

Fraser Health accounted for 36% (51) of deaths, followed by Island Health with 25% (36) of deaths and Interior Health with 20% (28).

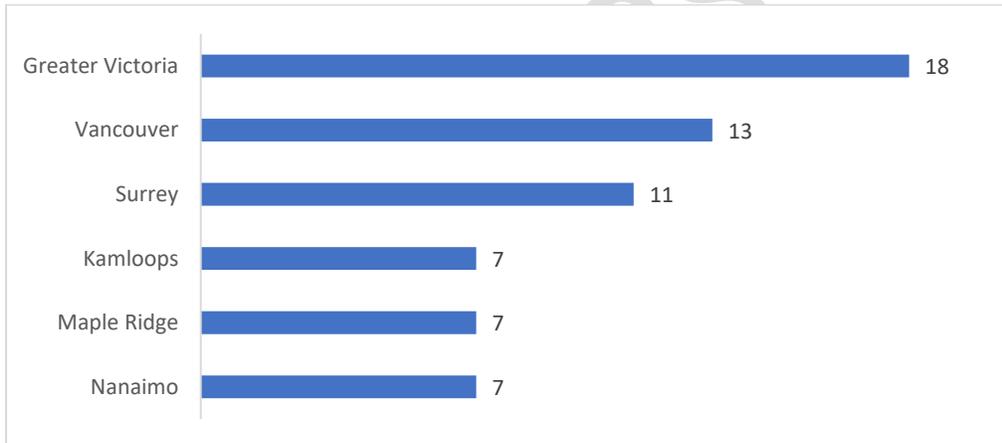
Table 5: Youth Unregulated Drug Toxicity Deaths by Health Authority of Injury, 2017-2022

Health Authority	2017	2018	2019	2020	2021	2022	Total
Interior	8	3	1	3	8	5	28
Fraser	10	9	7	8	7	10	51
Vancouver Coastal	5	2	3	2	4	4	20
Island	3	4	2	4	10	13	36
Northern	0	0	0	1	2	4	7
Total	26	18	13	18	31	36	142

Township of Injury

The townships experiencing the highest number of unregulated drug toxicity deaths among youth are Greater Victoria, Vancouver, and Surrey.

Figure 6: Youth Unregulated Drug Toxicity Deaths by Township of Injury, 2017-2022



Injury Location

In most youth deaths (74%; 105 deaths), the injury location (place where substances were last used) was at a private residence. In 11% (15) of deaths, the injury location was at other types of residences, including substance treatment or recovery houses, group homes, rooming houses, single room occupancies (SROs), hotels/motels, or shelters, and 11% (15) were outdoors.

Table 7: Youth Unregulated Drug Toxicity Deaths by Location of Injury, 2017-2022

Location Type	Number/Percentage of deaths
Private Residence (includes homes, garages, trailer homes, etc.)	105 (74%)
Other Residences (includes substance treatment or recovery houses, group homes, rooming houses, hotels/motels, shelters, single room occupancy (SRO), etc.)	15 (11%)
Outside (includes parking lots, parks, sidewalks, school grounds)	15 (11%)
Other Locations (includes public places, occupational settings, medical facilities, or unknown locations)	7 (5%)

Using Alone

Among the youth who died from unregulated drug toxicity, evidence indicated that 74 (52%) were using alone. In 38 (27%) deaths, there was evidence that the decedent was using with others, and for 30 (21%) it was still too early in the investigations or unknown if they were using alone or with others.

DRUGS DETECTED/TYPE OF DRUG

Toxicological analysis found that:

- Fentanyl or its analogues were detected in 112 (79%) deaths.
- Methamphetamine/amphetamine was detected in 46 (32%) deaths and cocaine was detected in 32 (23%) deaths. Overall, stimulants were detected in 78 (55%) deaths.
- Other opioids, including heroin, morphine, hydromorphone, codeine, methadone, etc., were detected in 40 (28%) deaths.
- Benzodiazepines were detected in 41 (29)% deaths.

Figure 8: Substances Detected in Youth Unregulated Drug Toxicity Deaths by Drug Type, 2017-2022

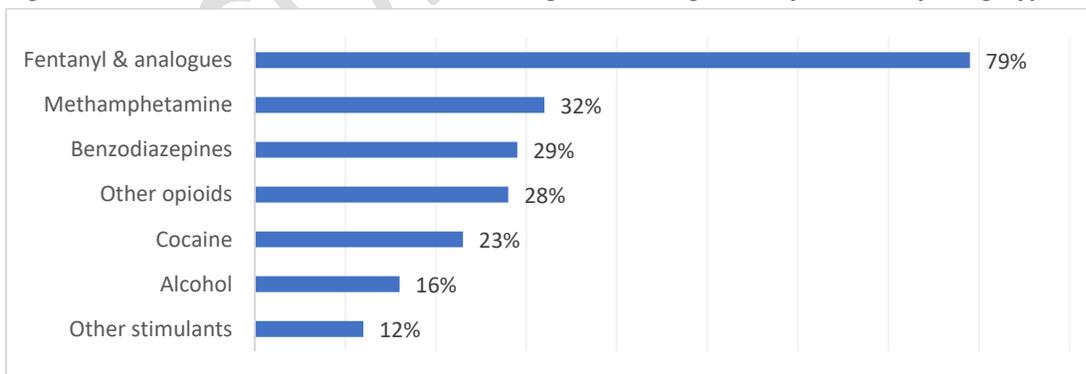
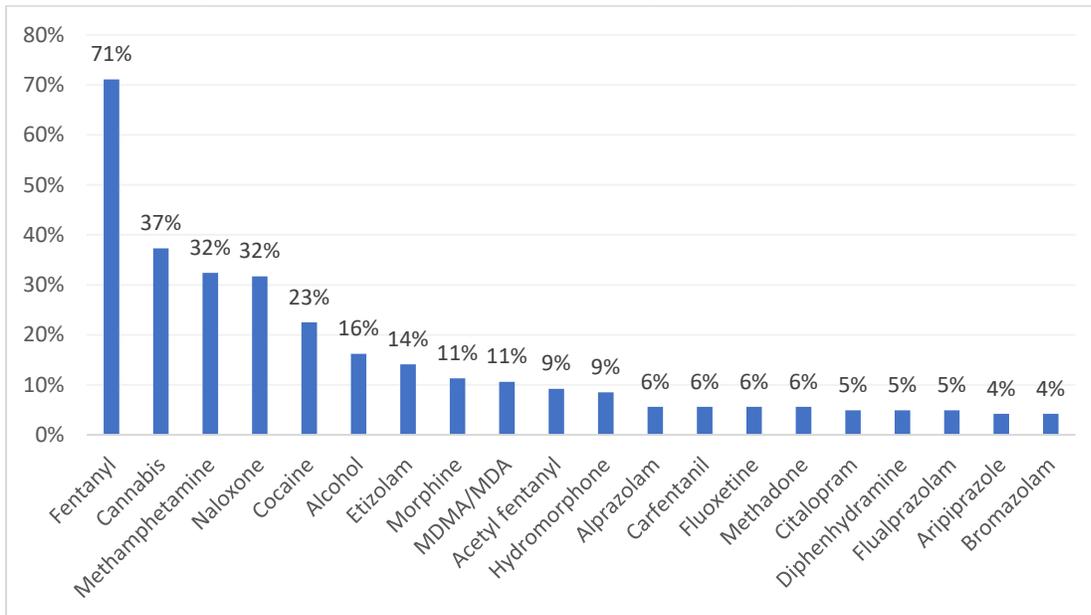


Figure 9: The Top Substances Detected in Youth Unregulated Drug Toxicity Deaths, 2017-2022



Hydromorphone

Of the 142 unregulated youth drug toxicity deaths reported to the BCCS between 2017 and 2022:

- There were zero deaths in which toxicological analysis detected only hydromorphone.
- Hydromorphone presence was detected in 12 youth deaths (8%).
- Of the 12 deaths, 1 was in 2020; 3 were in 2021; and 8 were in 2022.
 - In 8 of the 12 youth deaths (67%), the concentration of hydromorphone detected was low and unlikely to have contributed significantly to the death.
 - In 9 of the 12 youth deaths (75%), fentanyl and/or fentanyl analogues and/or stimulants were also detected, including:
 - 4 deaths in which fentanyl or fentanyl analogue was present; and
 - 6 deaths in which at least one stimulant was present.
 - In the 3 hydromorphone-related youth deaths in which fentanyl and/or fentanyl analogues and/or stimulants were not detected, all had either alcohol, benzodiazepines or another opioid present.
 - In all 12 deaths, at least one other substance that contributed to the death was detected.

The following should be considered when interpreting the results:

- Hydromorphone can arise from administration of the drug itself or as a metabolite of morphine, codeine, or hydrocodone.



YOUTH PROFILE

Ministry of Children and Family Development (MCFD)

Of youth who died from unregulated drug toxicity, 103 (73%) were in receipt of Ministry of Children and Family Development (MCFD) services at some point in time. These services include one or more of child and family services, guardianship services, youth services, youth justice, Child and Youth Special Needs (CYSN) and Child and Youth Mental Health (CYMH).

Mental Health

Youth with mental health disorders or who were identified as experiencing mental health issues were disproportionately represented in unregulated drug toxicity deaths.

- 95 (67%) youth who died from unregulated drug toxicity poisoning had a mental health diagnosis or anecdotal evidence of a mental health disorder.
- Mental health conditions include behavioural disorders, anxiety disorders, neuro-cognitive disorders, substance use disorders, mood disorders, personality disorders, psychotic disorders, and other disorders.

BC CORONERS SERVICE