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# Community Urinalysis and Self-Report Project: Overall Cross-Canada Trends in Substance Use, 2021–2023

#### **Key Findings**

- Stimulants were the substances reported to be used by the greatest percentage of
  participants in each region (as measured by both self-reported past-three-day use
  and detection in urine). Reported use by region was over 70 per cent for crystal
  meth/methamphetamine in British Columbia, Edmonton and Regina; 55 per cent for
  speed in Quebec; and about 40 per cent for crack in Ontario and Nova Scotia.
- There were stark regional differences in fentanyl use. Fentanyl was one of the substances used by most participants in British Columbia, Edmonton, Regina, Peel and Ottawa (reported use: 40 per cent to 59.4 per cent; detected use: 44 per cent to 86.5 per cent). In contrast, both reported and detected use of fentanyl use were under 10 per cent in Quebec and Nova Scotia.
- Benzodiazepines were frequently detected but seldom reported to have been used, suggesting high rates of unintended exposure.
- Participants reported smoking both stimulants and opioids more often than injecting them.

# **Acknowledgements**

We sincerely thank the organizations and individuals involved in collecting, interpreting and sharing the data that informed this work. We extend our deepest appreciation to the harm reduction organizations and participants who devoted their time and efforts to this project amid the devastating drug poisoning crisis.

# **Background and Methods**

The Community Urinalysis and Self-Report Project (CUSP) is a low-barrier sentinel surveillance system developed to better understand use of drugs from the unregulated supply. This knowledge informs local and cross-Canada initiatives to reduce harms to people who use these drugs. CUSP is implemented through a standardized project toolkit across



Canada, including at provincial levels in British Columbia and Quebec, as well as locally by partner sites. Canadian Centre on Substance Use and Addiction (CCSA) co-ordinates the project.

Between January 2021 and April 2023, 2,634 service clients were recruited from partner sites that offer harm reduction and other services located in seven regions across Canada. Expected drug use (self-report survey on past-three-day use) was compared with actual drug exposure (urine samples analyzed with urine toxicology). More details on the methods are available in Community Urinalysis and Self-Report Project: Methods Report for 2021–2023 Data (CCSA, 2024a).

This report focuses on the overall trends in substance use found across participating sites and is one in a series that summarize the findings from this initiative. Other reports are substance specific and contain more details on simulants, opioids and benzodiazepines (CCSA, 2024b; 2024c; 2024d). These reports are intended for those involved in substance use health research, monitoring, service delivery and policy making. CCSA has created additional products for the general public, including people who use drugs and those who directly work with them.

# **Findings**

## **Reported and Detected Use**

Stimulants were the substances used by the greatest percentage of participants in each region, though the type of stimulant varied (refer to Figure 1). Reported use of stimulants ranged between 40 per cent and 80 per cent of survey respondents, indicating a preference for stimulants. Additionally, stimulants represented between 50 per cent and 80 per cent of the detected drugs in urine samples. For more details about types of stimulants used and variation across regions, refer to the stimulants report (CCSA, 2024b).

Fentanyl was the opioid most commonly reported and detected west of Quebec, including in British Columbia, Edmonton, Regina, Ottawa and Peel (reported by 40 per cent to 59.4 per cent of those surveyed and detected 44 per cent to 86.5 per cent in urine samples). In contrast, both measures of fentanyl use were under 10 per cent in Quebec and Nova Scotia. For more details about fentanyl and opioid use, including regional patterns in unexpected use of fentanyl, refer to the opioid report (CCSA, 2024d).

In five of the seven regions, benzodiazepines were among the top three substances detected in urine, but in no region were they among the top three substances reported used, suggesting that exposure to benzodiazepines is mostly unintended. For more information about benzodiazepines, including their co-detection with fentanyl west of Quebec, please refer to the benzodiazepine report (CCSA, 2024c).



Figure 1. Percentage of participants who reported the use of substance (past three days) or had substance detected in their urine (top three substances, including ties for third)



**Note.** Detection of cocaine and crack are combined because they are not distinguishable by urine toxicology. Methamphetamine use may lead to the presence of both methamphetamine and amphetamine in urine; in Quebec, detection represents methamphetamine only (excluding amphetamines). Speed was included as an



option in Quebec and Nova Scotia only. It is not associated with a specific toxicological profile, but it may contain methamphetamine or other amphetamines and contribute to their detection. Detection of fentanyl includes fentanyl analogues (e.g., carfentanil). Detection of heroin and morphine use were combined because the direct metabolite of heroin (6-monoacetylmorphine) clears rapidly from urine, after which it is difficult to discern heroin from morphine use. Reported use of heroin and morphine were combined to facilitate comparison. Cannabis and alcohol were excluded.

An accessible version of this figure is available in Appendix Table 1.

#### **Route of Administration**

The substances used most frequently in each region were more often smoked than injected excluding Quebec, for which data were unavailable. This pattern was true for crystal meth and methamphetamine, crack, and opioids like fentanyl and heroin. Exceptions to this trend included methadone and hydromorphone, which were most often swallowed or injected due to their formulation. Figure 2 shows the results for all regions combined, excluding Quebec.

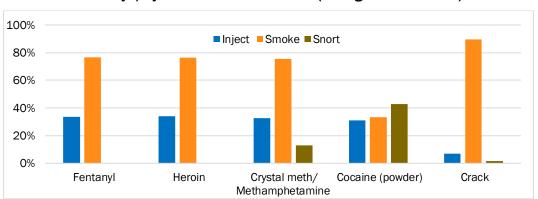


Figure 2. Percentage of participants who reported the use of substances (past three days) by route of administration (all regions combined)

**Note.** Percentages add to more than 100 as participants could indicate more than one route of administration. Results exclude Quebec as data were unavailable. Data for snorting fentanyl and heroin are not shown due to small sample sizes.

An accessible version of this figure is available in Appendix Table 2.

### **Polysubstance Use**

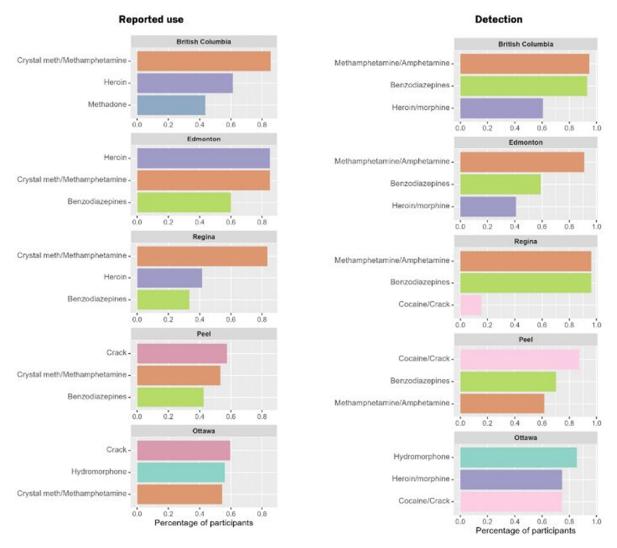
For this study, polysubstance use refers to two or more substances that were reported as being used in the past three days or were detected in the urine samples. This likely includes different types of polysubstance use, including simultaneous (i.e., present in the same substance consumed at one time), sequential (i.e., used one after the other in the same episode) and co-use over the three-day period.

Co-use of stimulants and opioids, both reported and detected, was the most common substance use combination. From 50 per cent to 80 per cent of those who reported using fentanyl also reported using a stimulant. Crystal meth was the most commonly co-used stimulant in western regions and crack was most commonly co-used in eastern regions.



Additionally, benzodiazepines were frequently detected but seldom reported to have been used among those who use fentanyl, suggesting high rates of unintended exposure. Figure 3 shows results for five of the regions that participated in the CUSP study.

Figure 3. Among participants who reported the use of fentanyl (past three days) or had fentanyl detected in their urine, percentage with co-use with other substances



**Note.** Detection of cocaine and crack are combined because they are not distinguishable by urine toxicology. Methamphetamine use may lead to the presence of both methamphetamine and amphetamine in urine. Detection of heroin and morphine use were combined because the direct metabolite of heroin (6-monoacetylmorphine) clears rapidly from urine, after which it is difficult to discern heroin from morphine use. Hydromorphone detection may result from codeine, morphine or hydromorphone use. Data were unavailable for Quebec and are not presented for Nova Scotia due to small sample sizes (less than three per cent of participants reported using or had fentanyl detected in their urine).

An accessible version of this figure is available in Appendix Table 3.



Benzodiazepines were also among the substances most often co-detected with methamphetamine/amphetamine in the west and cocaine/crack in the east. From 40 per cent to 70 per cent of those who reported using a stimulant also reported using fentanyl. More information about polysubstance use among those who reported using stimulants can be found in the stimulant specific report (CCSA, 2024b).

#### **Conclusions**

#### **Substance Use Patterns and Preferences**

The data showed high rates of intentional fentanyl use in regions west of Quebec. Because of its potency, fentanyl can lead to drug poisoning in low doses. Fentanyl concentrations are often variable when obtained from the unregulated supply, further raising the risk of unintentional drug poisoning (Kennedy et al., 2024). Responses to mitigating risks for people who use fentanyl could therefore include decreasing barriers and increasing access to opioid harm reduction services and treatment in areas with high fentanyl use.

The data also showed high rates of stimulant use across all sites. Stimulants are being increasingly implicated in drug poisoning deaths (Van Besien et al., 2024), but there are limited treatment and harm reduction options available for stimulant use. Therefore, response options could include decreasing barriers and increasing access to stimulant harm reduction services and treatment as well as more research.

Finally, the data on reported use shows intentional co-use of stimulants, opioids and benzodiazepines. Co-use of fentanyl and non-medical benzodiazepines poses multiple risks to people who use drugs, including poisonings that are complicated to reverse, safety risks during periods of heavy or prolonged sedation or unconsciousness, and medical needs related to benzodiazepine tolerance and withdrawal (Canadian Community Epidemiology Network on Drug Use [CCENDU], 2021, BC Centre for Disease Control, 2023). In addition, because many people use both stimulants and opioids, they are at risk of poisoning and other harms from a rapidly evolving range of substances that co-occur with fentanyl, such as non-medical benzodiazepines, nitazenes and xylazine (CCENDU, 2020; 2021; 2022a; 2022b; 2023). Therefore, responses could include new and expanded guidelines for prescribers and direct service providers on how to care for people who use both opioids and benzodiazepines, and education on up-to-date naloxone administration protocols (Russell et al., 2023; Xavier et al., 2023). Access to low-barrier harm reduction services, treatment services and other community supports can also prevent death and provide connections to other services and supports (Kerman et al, 2020, Rammohan et al, 2024).

#### **Unintended Drug Exposure and Polysubstance Use**

The findings demonstrate differences between what substances individuals reported using and what was detected in their urine samples in all participating regions, although to varying degrees. The discrepancy between reported versus detected use suggests that people are



unintentionally or unknowingly being exposed to substances other than the ones they intended to use, leaving them unprepared for the effects and at greater risk of drug poisonings and other health effects without the necessary precautions (e.g., carrying naloxone). This situation adds to the already-existing risks of the substances they intended to use (e.g., unknown concentrations as above) as it can increase or complicate those existing risks. For this reason, timely information on the contents of the drug supply (e.g. as provided by drug checking services) is needed. healthcare providers also need to know this, so they can appropriately respond to the health needs in their communities and inform prevention.

#### **Route of Administration**

The data presented also reveals inhalation is the predominant mode of drug use in all regions. While inhalation is generally associated with fewer health risks than injection, poisoning-related harms have shifted and occur more often for those who smoke drugs (British Columbia Coroners Service, 2022; Gomes et al., 2022). In 2023, inhalation was the mode of use in 65 per cent of drug toxicity deaths in British Columbia (British Columbia Public Safety and Solicitor General, 2024). This shift in preferred route of administration requires a shift in services that can address its risks.

## **Broader Implications**

More broadly, there is an immense need for programs and policies that address other factors known to affect the health and well-being of people who use drugs and their communities.

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# **Appendix**

Table 1. Percentage of participants who reported the use of substance (past three days) or had substance detected in their urine Table 1a: Stimulants

Substance	B.C. reported	B.C. detected	Edmonton reported	Edmonton detected	Regina reported	Regina detected	Peel reported	Peel detected	Ottawa reported	Ottawa detected	Quebec reported	Quebec detected	N.S. reported	N.S. detected
Cocaine/ crack†	33.1	47.4	34.0	18.0	14.0	14.0	57.0	66.0*	57.3	70.8*	n/a	68.4*	49.0	53.5*
Cocaine	18.3	_	22.0	_	12.0	_	39.0*	_	22.9	_	31.2*	_	29.0	_
Crack	25.5	_	30.0	_	12.0	_	46.0*	_	55.2*	_	45.6*	_	42.3*	_
Crystal meth/ methamphetamine (methamphetamine/ amphetamine)‡	72.9*	81.4*	72.0*	74.0*	74.0*	74.0*	39.0*	47.0*	43.8	55.2	n/a	71.7*	5.8	9.1
Crystal meth	_	_	_	_	_	_	_	_	_	_	17.0	_	_	_
Methamphetamine	_	_	_	_	_	_	_	_	_	_	17.6	_	_	-
Speed	_	_	_	_	_	_	_	_	_	_	55.0*	_	4.1	-
MDMA (ecstasy)	5.5	1.0	8.0	0.0	0.0	0.0	7.0	2.0	2.1	1.0	n/a	n/a	1.7	0.8
Other synthetic stimulants	6.4	15.2	14.0	0.0	0.0	4.0	10.0	0.0	35.4	38.5	n/a	n/a	15.4	11.6



Table 1b: Opioids

Substance	B.C. reported	B.C. detected	Edmonton reported	Edmonton detected	Regina reported	Regina detected	Peel reported	Peel detected	Ottawa reported	Ottawa detected	Quebec reported	Quebec detected	N.S. reported	N.S. detected
Buprenorphine/ naloxone	4.8	1.7	16.0	4.0	2.0	0.0	6.0	6.0	5.2	6.3	n/a	n/a	33.6*	32.0
Fentanyl§	54.0*	61.7*	40.0*	44.0*	48.0*	52.0*	47.0*	47.0	59.4*	86.5*	n/a	8.5	2.1	1.2
Heroin/ morphinell	46.4	42.1	36.0	24.0	20.0	6.0	15.0	21.0	49.0	69.8	n/a	n/a	11.6	13.3
Heroin	40.2*	_	38.0*	_	20.0*	_	9.0	_	16.7	_	n/a	_	0.4	-
Morphine	18.6	_	18.0	_	8.0	_	11.0	_	44.8	_	n/a	_	11.2	-
Hydromorphone	27.4	30.0	16.0	8.0	4.0	4.0	3.0	13.0	51.0*	83.3*	21.2	16.1	19.9	23.2
Methadone	30.2	24.3	14.0	12.0	6.0	8.0	24.0	22.0	32.3	58.3	n/a	11.7	42.3*	43.2*
Oxycodone	6.4	0.5	18.0	4.0	0.0	0.0	5.0	2.0	4.2	0.0	n/a	n/a	2.9	1.7

Table 1c: Other Depressants

Substance	B.C. reported		Edmonton reported				Peel reported				•	•	N.S. reported	N.S. detected
Benzodiazepines	22.4	61.7*	36.0	40.0*	18.0	54.0*	24.0	40.0*	12.5	32.3	19.6	19.7*	27.4	43.2*

Notes. n/a = not available; — = not included in the survey or cannot be distinguished by urine toxicology

§ Detection of fentanyl includes fentanyl analogues (e.g., carfentanil).

<sup>\*</sup> Substances reported used or detected by the highest percentage of participants (top three, including ties)

<sup>†</sup> Detection of cocaine and crack are combined because they are not distinguishable by urine toxicology. Survey responses to "cocaine (powder)" and "crack/freebase" were combined to facilitate comparison.

<sup>‡</sup> Methamphetamine use may lead to the presence of both methamphetamine and amphetamine in urine. Speed was included as an option in Quebec and Nova Scotia only. It is not associated with a specific toxicological profile, but it may contain methamphetamine or other amphetamines and contribute to their detection.



Il Detection of heroin and morphine use were combined because the direct metabolite of heroin (6-monoacetylmorphine) clears rapidly from urine, after which it is difficult to discern heroin from morphine use. Reported use of heroin and morphine were combined to facilitate comparison

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Table 2. Percentage of participants who reported the use of substance (past three days), by route of administration, all regions

Table 2a: Simulants

Substance	Inject	Smoke	Snort
Cocaine (powder)	31.1	33.3	42.7
Crack	7.0	89.7	1.5
Crystal meth/methamphetamine	32.5	75.3	13.1

Table 2b: Opioid

Substance	Inject	Smoke	Snort
Fentanyl	33.4	76.6	n/a
Heroin	33.9	76.3	n/a

**Notes.** n/a = not available.

Percentages add to more than 100 as participants could indicate more than one route of administration. Results exclude Quebec as data were unavailable. Data for snorting fentanyl and heroin are not shown due to small sample sizes.

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Table 3. Among participants who reported the use of fentanyl (past three days) or had fentanyl detected in their urine, percentage with couse with other substances (top three most common co-use combinations)

Table 3a. Simulants

Substance	B.C. reported	B.C. detected	Edmonton reported	Edmonton detected	Regina reported	Regina detected	Peel reported	Peel detected	Ottawa reported	Ottawa detected
Cocaine/crack†	_	57.1	_	22.7	_	15.4*	_	87.2*	_	74.7*
Cocaine	20.7	_	40.0	_	12.5	_	36.2	_	26.3	_
Crack	29.1	_	50.0	_	16.7	_	57.4*	_	59.6*	_
Crystal meth/ methamphetamine (Methamphetamine/ amphetamine)‡	85.5*	94.6*	85.0*	90.9*	83.3*	96.2*	53.2*	61.7*	54.4*	60.2
MDMA (ecstasy)	7.0	1.2	20.0	0.0	0.0	0.0	6.4	2.1	3.5	1.2
Other synthetic stimulants	9.3	15.8	35.0	0.0	0.0	3.8	10.6	0.0	43.9	41.0

## Table 3b. Opioids

Substance	B.C. reported	B. C. detected	Edmonton reported	Edmonton detected	Regina reported	Regina detected	Peel reported	Peel detected	Ottawa reported	Ottawa detected
Buprenorphine/ naloxone	7.5	6.6	30.0	9.1	4.2	0.0	8.5	6.4	3.5	4.8
Heroin/morphine§	_	60.6*	_	40.9*	_	7.7	_	40.4	_	74.7*
Heroin	61.2*	_	85.0*	_	41.7*	_	17.0	_	26.3	_
Morphine	25.6	_	40.0	_	8.3	_	21.3	_	50.9	_
Hydromorphonell	40.1	39.8	35.0	13.6	4.2	0.0	6.4	25.5	56.1*	85.5*
Methadone	43.6*	33.6	30.0	22.7	4.2	7.7	38.3	38.3	42.1	63.9
Oxycodone	10.1	0.4	40.0	4.5	0.0	0.0	6.4	2.1	3.5	0.0



#### Table 3c. Other depressants

Substance	B.C. reported	B. C. detected	Edmonton reported	Edmonton detected	Regina reported	Regina detected	Peel reported	Peel detected	Ottawa reported	Ottawa detected
Benzodiazepines	33.9	93.1*	60.0*	59.1*	33.3*	96.2*	42.6*	70.2*	17.5	36.1

Notes. Data were unavailable for Quebec and are not presented for Nova Scotia due to small sample sizes (less than three per cent of participants reported fentanyl use or had fentanyl detected in their urine). n/a= not available;... = not included in the survey or cannot be distinguished by urine toxicology.

- \* The combinations reported used by the highest percentage of participants (top three)
- † Detection of cocaine and crack are combined because they are not distinguishable by urine toxicology.
- ‡ Methamphetamine use may lead to the presence of both methamphetamine and amphetamine in urine.
- § Detection of heroin and morphine use were combined because the direct metabolite of heroin (6-monoacetylmorphine) clears rapidly from urine, after which it is difficult to discern heroin from morphine use. Reported use of heroin and morphine were combined to facilitate comparison.
- If Hydromorphone detection may result from codeine, morphine or hydromorphone use.

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#### About CCSA

CCSA was created by Parliament to provide national leadership to address substance use in Canada. A trusted counsel, we provide national guidance to decision makers by harnessing the power of research, curating knowledge and bringing together diverse perspectives.

CCSA activities and products are made possible through a financial contribution from Health Canada. The views of CCSA do not necessarily represent the views of Health Canada.

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