



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

Key Findings

- Stimulants were used by the greatest percentage of clients in each region, though the types of stimulants used varied. In western regions (i.e., British Columbia, Edmonton and Regina), over 70 per cent of participants reported the use of crystal meth/methamphetamine. In Nova Scotia, reported use was highest for crack (42.3 per cent). In Ontario, reported use was highest for crack (46 per cent to 55.2 per cent) while speed (55 per cent) was highest in Quebec.
- Participants reported smoking stimulants more often than injecting them.
- Unexpected use of methamphetamine/amphetamine and cocaine/crack tended to be higher in regions where these stimulants were reported to be used less frequently.
- Co-use of stimulants and opioids was common. In particular, co-use with fentanyl was high in western regions (47.2 per cent to 69.1 per cent of those who reporting crystal meth or methamphetamine use) and Ontario (about 60 per cent of those who reported crack use). In these regions, co-detection with benzodiazepines was also common. In Nova Scotia, over 50 per cent of those who reported use of crack also used methadone.

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 toxic, 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, including



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

Between January 2021 and April 2023, 2,634 participants were recruited from partner sites that are harm reduction service organizations located in seven regions across Canada. Expected drug use (self-report survey on past three-day use) was compared with actual drug exposure (urine sample 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 trends in the use of stimulants and is one in a series of three that summarizes the substance specific findings. Other reports focus on opioids (CCSA, 2024c), benzodiazepines (CCSA, 2024d) and more general findings and implications outlined in the overall trends report (CCSA, 2024b). These reports are intended for those involved in harm reduction research, surveillance, service delivery and policy making.

Findings

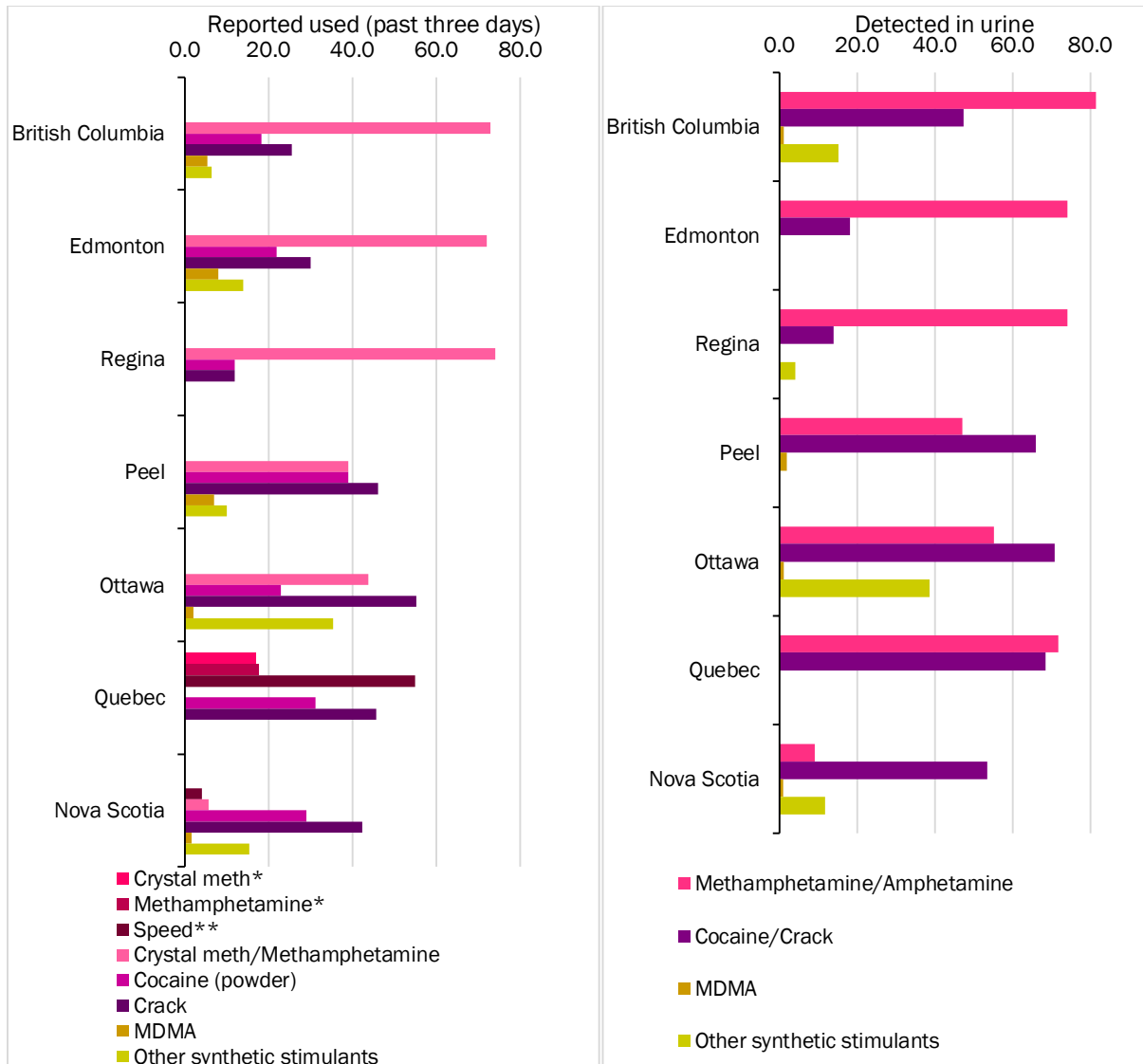
Reported Use and Detection of Stimulants

Of the substances assessed (i.e., opioids, stimulants, benzodiazepines), stimulants were generally the substances used by the greatest percentage of participants in each region, though the type of stimulant varied.

In western regions (i.e., British Columbia, Edmonton and Regina), reported use of crystal meth/methamphetamine and detection of methamphetamine/amphetamine occurred in over 70 per cent of participants (refer to Figure 1). In Nova Scotia, cocaine and crack were the stimulants reported used (29 per cent and 42.3 per cent, respectively) and detected (53.5 per cent) most often. In Ontario, reported use was highest for crack (46 per cent to 55.2 per cent) while speed while highest in Quebec (55 per cent).



Figure 1. Percentage of participants who reported the use of stimulants (past three days) or had stimulants detected in their urine



Notes. Crystal meth and methamphetamine were separate options in Quebec. 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 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 (excludes amphetamines). Results for Quebec reflects the stimulants most frequently used; data on use of MDMA (ecstasy) and other synthetic stimulants were not available.

For an accessible version of this figure, refer to [Appendix Table 1](#).

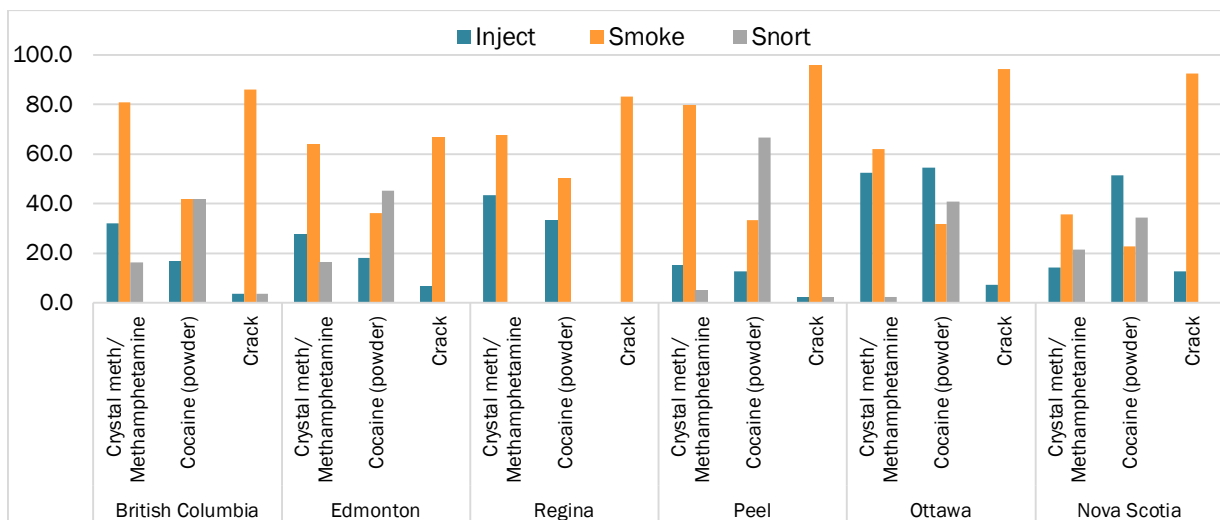


Trends in Use of Methamphetamine, Cocaine and Crack

Route of Administration

More participants reported using crystal meth/methamphetamine by smoking than injection in all regions (refer to Figure 2). However, the difference between these routes of administration was not consistent. For instance, over three times as many participants from Ottawa reported injecting crystal meth/methamphetamine as compared with Peel (52.4 per cent in Ottawa compared to 15.4 per cent in Peel).

Figure 2. Percentage of participants who reported the use of stimulants (past three days), by route of administration



Note. Percentages add to more than 100 as participants could indicate more than one route of administration. In Regina, the option of “Snort” was combined with “Other” and is not shown. Results exclude Quebec as data were unavailable.

For an accessible version of this figure, refer to [Appendix Table 2](#).

Cocaine was most often snorted and smoked in all regions but Ottawa and Nova Scotia, where injection was the most common. Crack was most often smoked in all regions.

Accordance Between Reported and Detected Use

We assessed accordance between reported and detected substance use for two measures:

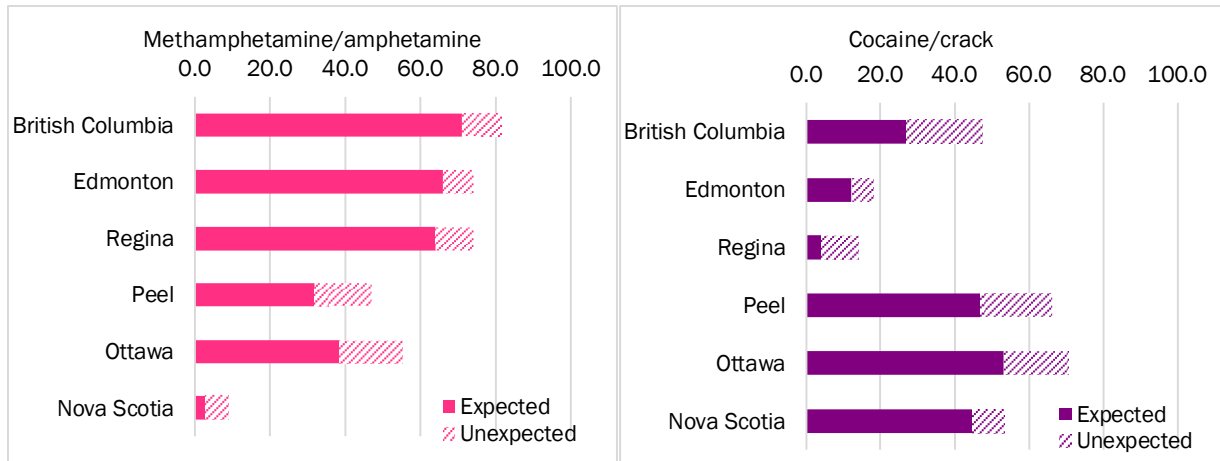
- Among those who had the substance detected in their urine, was it expected (i.e., reported used) or unexpected (i.e., not reported)?
- Among those who reported using the substance, was it detected in their urine (i.e., correctly identified or a “bunk” substance)?

In western regions (i.e., British Columbia, Edmonton and Regina), over 85 per cent of participants who had methamphetamine/amphetamine detected in their urine also reported



the use of crystal meth/methamphetamine (i.e., expected use) (refer to Figure 3). Most cocaine/crack use was expected in Nova Scotia (83.7 per cent). Conversely, unexpected use of these stimulants tended to be higher in the regions where detection was less frequent.

Figure 3. Percentage of participants who had stimulants detected in their urine, by expectation



Note. Expectation was determined based on the reported use matching what was detected. Unexpected was a mismatch. Unexpected use of methamphetamine/amphetamine may be overestimated due to the use of certain synthetic stimulants. Data from Quebec were unavailable.

For an accessible version of this figure, refer to [Appendix Table 3](#).

We also assessed whether the stimulants participants reported using in the past three days were detected in their urine. Patterns were similar to those for unexpected versus expected use (data not shown):

- In British Columbia., Edmonton, Regina, Ottawa and Peel, 88.1 per cent to 97.4 per cent of participants who reported the use of crystal meth/methamphetamine had methamphetamine/amphetamine detected in their urine.
- In Ontario and Nova Scotia, 82.5 per cent to 92.7 per cent of those reporting the use of crack or cocaine had cocaine/crack detected in their urine.

Polysubstance Use

For this study, polysubstance use refers to two substances that were reported as being used in the past three days or both 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.

We examined the percentage of participants with co-use of other substances among the following groups:



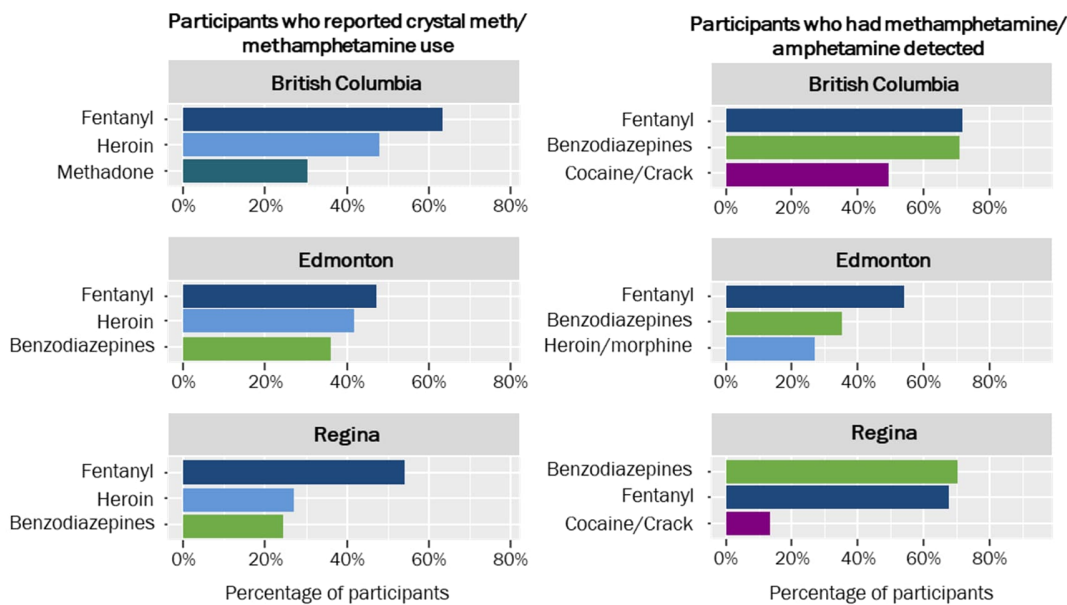
- In British Columbia, Edmonton, Regina, Ottawa and Peel, those who reported the use of crystal meth/methamphetamine or had methamphetamine/amphetamine detected in their urine (refer to Figure 4).
- In Ontario and Nova Scotia, those who reported the use of crack or had cocaine/crack detected in the urine (refer to Figure 5).

In western regions, between 47.2 per cent and 69.1 per cent of participants who reported the use of crystal meth/methamphetamine also reported the use of fentanyl (refer to Figure 4). A similar pattern was observed for co-detection of methamphetamine/amphetamine and fentanyl.

In Ontario, about 60 per cent of those who reported the use of crack also reported using fentanyl (refer to Figure 5). In Nova Scotia, over 50 per cent of those who reported the use of crack also used methadone. Reported co-use of crack with other types of stimulants, such as crystal meth or cocaine, was also common in these regions.

Benzodiazepines were among the substances most often co-detected with methamphetamine/ amphetamine in British Columbia, Edmonton and Regina, and with cocaine/crack in Ottawa, Peel and Nova Scotia.

Figure 4. Among participants who reported the use of crystal meth or methamphetamine (past three days) or had methamphetamine/amphetamine detected in their urine, percentage with co-use with other substances

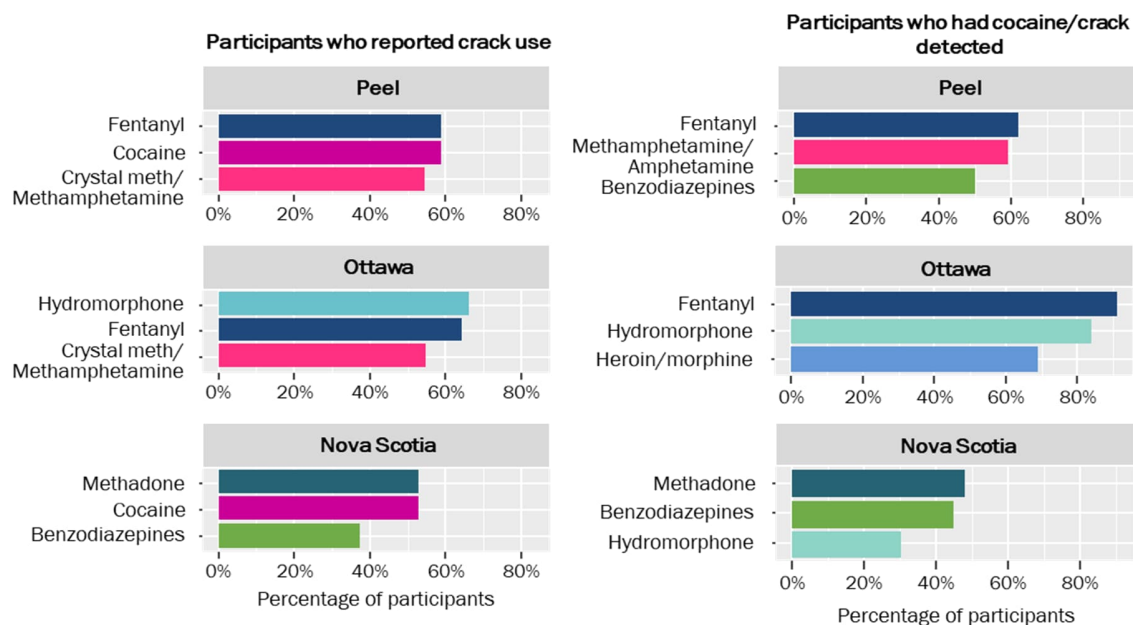


Note. Data were unavailable for Quebec. Detection of heroin and morphine use were combined because the direct metabolite of heroin (6-monoacetylmorphine) clears rapidly from urine, after which it is difficult to discern heroin from morphine use.

For an accessible version of this figure, refer to [Appendix Table 4](#).



Figure 5. Among participants who reported the use of crack (past three days) or had cocaine/crack detected in their urine, percentage with co-use with other substances



Note. Data were unavailable for Quebec. 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.

For an accessible version of this figure, refer to [Appendix Table 5](#).

Summary

This report presents the key trends in the use of stimulants from participants recruited from harm reduction organizations in British Columbia, Edmonton, Regina, Peel, Ottawa, Quebec and Nova Scotia between 2021 and 2023. While the types of stimulants used in each region varied, stimulant use was highly common across all regions. In general, use of stimulants was expected (i.e., both reported used and detected in urine). Unexpected use of cocaine/crack (i.e., detected in urine but not reported used) was surprising since these substances are not typically adulterants or contaminants. Drug checking and drug seizure data show that cocaine or crack can co-occur with methamphetamine or fentanyl but do so infrequently (Canadian Community Epidemiology Network on Drug Use, 2022). It is unclear from these data sources which of the substances the person had intended to use. Further research and triangulation with other data sources is needed to explore the potential reasons for the unexpected use of cocaine/crack.

Participants often smoked stimulants and often used them in combination with opioids, such as fentanyl. These results are consistent with other evidence demonstrating that Canada’s drug toxicity crisis remains a polysubstance crisis. At least one in two apparent



opioid toxicity deaths have also involved a stimulant since 2018, when these data became available (Federal, provincial, and territorial Special Advisory Committee on the Epidemic of Opioid Overdoses, 2023).

People who use substances have distinct needs and preferences that evolve with factors such as cost and availability (Xavier et al., 2023). Future research may explore diverse motivations for use of stimulants and co-use with other substances to help inform tailored actions in different regions (Boileau-Falardeau et al., 2022).

For implications and recommendations associated with these findings, please refer to the overall findings report for CUSP results from 2021 to 2023. (CCSA, 2024b)

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Appendix

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

Stimulant	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	Nova Scotia reported	Nova Scotia 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

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

* 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.

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

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

Stimulants	B.C. inject	B.C. smoke	B.C. snort	Edmonton inject	Edmonton smoke	Edmonton snort	Regina inject	Regina smoke	Regina snort	Peel inject	Peel smoke	Peel snort	Ottawa inject	Ottawa smoke	Ottawa snort	Nova Scotia inject	Nova Scotia smoke	Nova Scotia snort
Cocaine (powder)	16.9	41.6	41.6	18.2	36.4	45.5	33.3	50.0	n/a	12.8	33.3	66.7	54.5	31.8	40.9	51.4	22.9	34.3
Crack	3.7	86.0	3.7	6.7	66.7	0.0	0.0	83.3	n/a	2.2	95.7	2.2	7.5	94.3	0.0	12.7	92.2	0.0
Crystal meth/ methamphetamine	32.0	80.7	16.3	27.8	63.9	16.7	43.2	67.6	n/a	15.4	79.5	5.1	52.4	61.9	2.4	14.3	35.7	21.4

Note. Percentages add to more than 100 as participants could indicate more than one route of administration. In Regina, the option of “Snort” was combined with “Other” and is not shown. Data were unavailable for Quebec.

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Table 3. Percentage of participants who had stimulants detected in their urine, by expectation

Stimulants	B. C. expected	B.C. unexpected	Edmonton expected	Edmonton unexpected	Regina expected	Regina unexpected	Peel expected	Peel unexpected	Ottawa expected	Ottawa unexpected	Nova Scotia expected	Nova Scotia unexpected
Cocaine/crack	57.3	42.7	66.7	33.3	28.6	71.4	71.2	28.8	75.0	25.0	83.7	16.3
Methamphetamine/ amphetamine	87.1	12.9	89.2	10.8	86.5	13.5	68.1	31.9	69.8	30.2	31.8	68.2

Note. Expectation was determined based on the reported use matching what was detected. Unexpected was a mismatch. Data from Quebec were unavailable.

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Table 4. Among participants who reported the use of crystal meth/ or methamphetamine (past three days) or had methamphetamine/amphetamine detected in their urine, percentage with co-use with other substances (top three most common co-use combinations)

Table 4a. Stimulants

Stimulants	B.C. reported	B.C. detected	Edmonton reported	Edmonton detected	Regina reported	Regina detected
Cocaine/crack	—	49.4*	—	16.2	—	13.5*
Cocaine	17.6	—	19.4	—	13.5	—
Crack	27.1	—	30.6	—	13.5	—
MDMA (ecstasy)	5.9	0.9	8.3	0.0	0.0	0.0
Other synthetic stimulants	7.5	17.8	16.7	0.0	0.0	5.4

Table 4b. Opioids

Opioid	B.C. reported	B.C. detected	Edmonton reported	Edmonton detected	Regina reported	Regina detected
Buprenorphine/naloxone	4.6	5.0	16.7	2.7	2.7	0.0
Fentanyl	63.4*	71.6*	47.2*	54.1*	54.1*	67.6*
Heroin/morphine	—	45.6	—	27.0*	—	8.1
Heroin	48.0*	—	41.7*	—	27.0*	—
Morphine	18.3	—	19.4	—	8.1	—
Hydromorphone	28.4	30.4	19.4	10.8	2.7	2.7
Methadone	26.5*	25.1	16.7	13.5	2.7	5.4
Oxycodone	6.2	0.3	16.7	2.7	0.0	0.0

Table 4c. Other depressants

Other Depressant	B.C. reported	B.C. detected	Edmonton reported	Edmonton detected	Regina reported	Regina detected
Benzodiazepines	25.5	70.8*	36.1*	35.1*	24.3*	70.3*

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

* The combinations reported used by the highest percentage of participants (top three).

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Table 5. Among participants who reported the use of crack (past three days) or had cocaine/crack detected in their urine, percentage with co-use with other substances (top three most common co-use combinations)

Table 5a. Stimulants

Stimulant	Peel reported	Peel detected	Ottawa reported	Ottawa detected	Nova Scotia reported	Nova Scotia detected
Cocaine	58.7*	—	37.7	—	52.9*	—
Crystal meth/methamphetamine (Methamphetamine/amphetamine)	54.3*	59.1*	54.7*	58.8	10.8	9.3
MDMA (ecstasy)	13.0	3.0	3.8	1.5	2.9	1.6
Other synthetic stimulants	10.9	0.0	34.0	41.2	24.5	17.1

Table 5b. Opioids

Opioid	Peel reported	Peel detected	Ottawa reported	Ottawa detected	Nova Scotia reported	Nova Scotia detected
Buprenorphine/naloxone	8.7	3.0	0.0	5.9	18.6	26.4
Fentanyl	58.7*	62.1*	64.2*	91.2	3.9	1.6
Heroin/morphine	—	30.3	—	69.1*	—	18.6
Heroin	17.4	—	20.8	—	1.0	—
Morphine	17.4	—	50.9	—	20.6	—
Hydromorphone	6.5	18.2	66.0*	83.8*	27.5	30.2*
Methadone	26.1	28.8	37.7	57.4	52.9*	48.1
Oxycodone	8.7	3.0	7.5	0.0	3.9	2.3

Table 5c. Other depressants

Other Depressant	Peel reported	Peel detected	Ottawa reported	Ottawa detected	Nova Scotia reported	Nova Scotia detected
Benzodiazepines	32.6	50.0*	9.4	38.2	37.3*	45.0*

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

* The combinations reported used by the highest percentage of participants (top three)

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About CCSA

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ISBN 978-1-77871-184-8

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