Canadian Centre on Substance Use and Addiction

Substance Use Trends in Canada

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Stimulant Use and Related Harms in Canada: Drivers and Adaptive Responses

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About This Issue

This issue *of Substance Use Trends in Canada* is the second in a two-part series. Part 1, released in January, focused on trends and data related to stimulants and stimulant-related harms across Canada.

In Canada, the crude rate of apparent stimulant toxicity deaths more than doubled, rising from 7.6 per 100,000 people in 2018 to 17.1 per 100,000 in 2024. From January to June 2025, the rate was 8.9 per 100,000, according to the Public Health Agency of Canada's most recent update. The most commonly reported harms associated with stimulant use are cardiovascular events such as myocardial infarction, cardiac arrythmias, cardiomyopathy,

hypertension and coronary artery disease. Other adverse effects reported across all participating regions include stimulant-induced psychosis (e.g., hallucinations and delusions), anxiety, panic attacks, severe agitation and insomnia or sleep deprivation.

This issue (Part 2) examines key factors driving stimulant use across Canada. These factors include dynamics within the unregulated drug supply and the intentional use of stimulants for a range of reasons, such as their perceived safety compared to opioids. This issue also examines evolving patterns of polysubstance use involving stimulants and opioids, including the initiation of stimulant use alongside opioids rather than a complete shift from one substance to another. It further explores what these trends mean for different groups of people and outlines responses that have been implemented or are being considered to reduce harms.

Need to Know

- Across all participating regions, the most commonly reported drivers of stimulant use were dynamics within the unregulated drug supply. These drivers were mainly related to accessibility of stimulants, affordability (e.g., the low cost to produce and consume methamphetamine) and higher purity of methamphetamine at the retail level.
- Other commonly reported drivers included the preferred effects of stimulants, such as mood elevation. They also included **perceived** safety, for example the belief that it is "impossible" to overdose compared to opioids. However, evidence shows that stimulants are increasingly involved in fatal toxicity, most often in combination with opioids in polysubstance deaths.
- Patterns of polysubstance use involving stimulants and opioids are evolving. More people are initiating stimulant use alongside opioids, with less evidence of complete switching from opioid to stimulant use. Education about the risk of opioid overdose among people who use stimulants remains important, along with appropriate responses such as access to naloxone.
- The contents of the unregulated drug supply are unpredictable, including the purity of substances. The presence of adulterants in stimulants can contribute to both acute and chronic toxicity, such as when crack cocaine contains opioids or fentanyl, methamphetamine or benzodiazepines.
- All nodes (sites) reported that access to harm reduction and treatment services is important to reduce stimulant-related harms. Services varied across provinces but included evidence-based counselling for stimulant use disorder (e.g., contingency management and pharmacotherapies), overdose prevention sites, expanded outreach to people who use stimulants (including peer outreach and wound care), needle and syringe programs, inhalation supplies or kits (e.g. bowl pipes to reduce the risk of burns) and guidance on adequate sleep and hydration.
- Access to local drug supply information through drug checking helps identify unexpected substances in stimulant samples. This information supports people who use stimulants in making informed decisions to reduce harm, such as carrying naloxone or choosing to use less or not use.

- Stimulant-related harms are part of a broader crisis and cannot be separated from factors such as unstable housing, unmet mental health needs and co-use of other substances. Reducing harms associated with stimulant use therefore requires access to additional supports, including mental health and treatment services, safe places to sleep, and access to food and security.

Data Sources and Limitations

To gather information for this issue, we reached out to the Canadian Community Epidemiology Network on Drug Use (CCENDU). The network represents about 81 organizations across 11 provincial and territorial nodes and has over 150 members, including epidemiologists, physicians, forensic pharmacologists, policy analysts, program managers, scientific advisers, researchers, public health officers, police service members, government officials and people with lived and living experience of substance use. Each CCENDU node collects information, such as community reports, from local partners and networks on substance-related trends and response options.

We also consulted the National Drug Checking Working Group (NDCWG), which has more than 60 active members from 40 organizations, including about 20 community-based organizations. We also included reports from Public Safety, the RCMP, people with lived and living experience of substance use, and other sources.

We compiled information on drivers of stimulant use and adaptive responses to stimulant-related harms submitted by participating nodes and categorized them by key themes. While not every node that contributed has a dedicated provincial or territorial section below, all contributions are reflected throughout this issue. Where regional information is not presented, this **should not** be interpreted as an absence of stimulant use, harms or adaptive responses. Drivers and responses shared by nodes may also not be representative of all regions within a province or territory, as trends can vary within and across communities. Responses mentioned by all nodes are summarized in the Need to Know section, with additional relevant responses discussed in the What This Means in Practice section.

Drivers of Stimulant Use

Table 1. Potential drivers of stimulant use reported across sources*

Driver	Reported Insights
Unregulated drug supply dynamics	Methamphetamine is inexpensive to produce and can sell at a higher price than it costs to make (e.g., in tablet form), making it highly attractive to criminal networks. Increased involvement of organized crime groups in the production, importation and distribution of methamphetamine was also reported.[1,2]
	The long-lasting ability of methamphetamine to sustain alertness may contribute to increased demand.
	Methamphetamine is widely available, which further increases demand.[3] Increased methamphetamine use has been reported among people who previously used cocaine or crack, driven by greater availability and affordability.
	Cocaine and crack are reported to be more widely available than opioids in some remote communities.
	Cocaine is easily available for purchase online.
Drug composition (purity and adulteration)	Methamphetamine has not been subject to the same scale or diversity of active-drug adulterations as opioids, although adulteration is still present. Methamphetamine also tends to have higher purity at the retail level, often above 75% to 85%).[4]
	Cocaine is reported to involve fewer multi-drug mixtures. People who use cocaine were also reported to be less concerned about overdose risk compared to opioids or "down."
Regulatory and enforcement considerations	Markets adapt quickly, redirecting supply despite seizures and the dismantling of laboratories. Global increases in stimulant production and trafficking (e.g., greater cocaine availability in international markets) may also sustain availability and purity despite enforcement efforts.[5,6,7]
Intentional use of stimulants	Preferred effects of stimulants, such as increased energy or elevated mood, and perceptions of relative safety (e.g., the belief that it is "impossible" to overdose) contribute to stimulant use, particularly among vulnerable or underserved populations.
	People living with untreated or unstable mental health conditions may use stimulants to regulate mood, especially when formal supports are inaccessible. People who use substances and are neurodivergent also report using methamphetamine to improve cognitive function.
	Stimulants may be used for survival or protection in the context of housing insecurity, including to stay warm, remain awake or vigilant, suppress appetite, protect belongings and manage exhaustion.
	Stimulants are used to counter heavy sedation from opioids, a pattern intensified by high rates of benzodiazepine adulteration. They are also often used with alcohol to balance depressant effects and may be used to mask symptoms of opioid withdrawal.
	Stimulant use is increasingly normalized in some social groups. Among youth, stimulants may be valued for making socializing easier or more enjoyable.
	Some people use stimulants to party longer or to balance the effects of alcohol. Stimulants are also sometimes used to enhance libido (e.g., Party 'n' Play/chemsex).

Note

*Sources summarized in Table 1 are described in the Data Sources and Limitations section.

Figure 1: CCENDU nodes and NDCWG members that responded to the information request

Adaptive Responses

As mentioned in the Data Sources and Limitations section, not all participating nodes have a dedicated provincial or territorial section on adaptive responses below. However, contributions from all participating nodes are incorporated throughout this issue. The absence of a dedicated section **should not** be interpreted to mean that a region is not experiencing stimulant use or developing adaptive responses to reduce harms.

British Columbia

Treatment and Support Services

- Shorter, more frequent appointments with healthcare providers can help keep people who use stimulants engaged. Cognitive impairment and executive functioning challenges associated with chronic methamphetamine use may make simple action plans, clear instructions and calm repetition more effective. Additional support may also be needed to facilitate follow-up. Stimulant use disorders may be better

[1] Criminal Intelligence Service Canada. (2023). Public report on organized crime.
[2] Criminal Intelligence Service Canada. (2024). Summary — 2024 public report on organized crime.
[3] Royal Canadian Mounted Police. (2023). Methamphetamine in your industry.
[4] Public Safety Canada. (2022). Fourth law enforcement roundtable on drugs.
[5] Health Canada's Drug Analysis Service and Cannabis Laboratory.
[6] Statistics Canada. (2024). Drug metabolites in wastewater in select Canadian cities, by month, 2022 to 2023.
[7] United Nations Office on Drugs and Crime. (n.d.). Statistical annex.

managed when prescribed medications continue to be taken even during periods of heavy use.

- As recommended in the clinical practice guideline developed by the American Society of Addiction Medicine (ASMA) and the American Academy of Addiction Psychiatry (AAAP),[8] some opioid agonist therapy (OAT) clinics prescribe pharmacotherapies off label to treat stimulant use disorder, supported by low- to moderate-quality evidence with conditional recommendations. At the same time, some reports suggest that fewer people are accessing OAT, and that many OAT prescribers have stepped back from prescribing psychostimulant pharmacotherapies. There are also reports of significant barriers to accessing evidence-based counselling for stimulant use disorder (e.g., contingency management[9]).
- People who use cocaine or prescription stimulants often fall outside usual support networks. This may reflect stigma, perceptions that this use is not risky, or the fact that some people remain stable and function well in daily life. For others, however, impacts can accumulate quietly over time through stress, fatigue and dependence.
- Service providers emphasize the importance of calm, steady spaces where people can access supportive care without pressure or judgment (e.g., drop-in services, coordinated access models, trans-inclusive services such as Trans Connect, episodic outreach). High levels of stigma associated with stimulant use and stimulant use disorder can discourage disclosure and delay access to care, particularly among people who use stimulants recreationally or in workplace settings. Familiar staff and access to basic supports, such as warmth, food, rest and water, are important for maintaining engagement and reducing immediate harms over time.
- To ensure appropriate supports and supplies are available, service providers need to understand how stimulants are being consumed, as patterns of use influence health risks and service needs. Reported modes of consumption include smoking (most common), snorting (powder cocaine), injection, boofing (anal use), and parachuting[10] (wrapping powdered substance in a piece of paper and swallowing), which is more common among youth.

Polysubstance Use and Harms

- Contamination of stimulants with opioids can increase the risk of overdose (e.g., reuse of bubble pipes to smoke both fentanyl and methamphetamine). Stimulant use can also lead to complex adverse health effects (e.g., stimulant-induced psychosis or paranoia). Together, these situations can be difficult to manage. Emergency

[8] Batki, S., Ciccarone, D., Hadland, S., Hurley, B., Kabernagel, K., Levin, F., … Luongo, P. (2024). The ASAM/AAAP clinical practice guideline on the management of stimulant use disorder.
[9] Contingency management is a behavioural therapy in which people receive rewards for positive behvaiour change (see Contingency management: What it is and why psychiatrists should want to use it).
[10] Parachuting can affect how psychoactive substances are released in the body (e.g., sustained release or immediate release). As a result, service providers should be aware of unexpected pharmacokinetics when parachuting occurs (see Parachuting psychoactive substances: Pharmacokinetic clues for harm reduction).

response teams are not always equipped to provide appropriate care, and pathways to treatment are often fragmented and difficult to navigate.

- Reports describe people starting to use stimulants after long-term opioid use, as well as opioid use among people who previously used only stimulants. Initiation of stimulant use among people who already use opioids is more common than switching from opioid use to stimulant use. However, some exceptions have been reported, with stimulant use declining in favour of opioid use in certain contexts.
- Perceptions that stimulant use carries lower risk than opioid use can mean overdoses occur when no one is around or prepared to respond. Education about the risk of opioid overdose and access to naloxone therefore remain important for people who use stimulants.

> "Just yesterday, a client told me he has gone through 38 new phones in the past 18 months — 36 of which were stolen while he was asleep. He said he is now considering switching to stimulant use because of this extreme sedation."

Quebec

Treatment and Support Services

- Reports note that the ASCME trial (addition of high dose stimulant and engagement-focused contingency management for the management of methamphetamine use disorder) is currently underway in the province. This clinical trial is examining the efficacy of lisdexamfetamine (Vyvanse®) as a substitution therapy for methamphetamine.
- Differentiating between the two optical isomers of methamphetaine[11] — levomethamphetamine and dextromethamphetamine — is not possible using a spectrometer. Dextromethamphetamine (also known as enantiopure and the most common form reported in British Columbia) is stronger than levomethamphetamine. Differences in the ratio of these isomers may help explain variations in strength and effects between batches.
- Key messages related to reducing stimulant-related harms include:
  - Just because a drug may not be cut with another substance does not mean it is safe. It may be stronger than expected and require dosage adjustment.
  - Distribution of plastic mouthpieces to limit inhalation-related burns, along with distribution of additional sterile inhalation and injection equipment, is important.

[11] Optical isomers are molecules with the same molecular formula that cannot be superimposed on one another (see Stereoisomerism — optical isomerism).

New Brunswick

Treatment and Support Services

- Addiction medicine services clinics do not currently have a dedicated program specifically for stimulant use disorder, as they do for opioid use disorder or high-risk alcohol use.
  - There are plans to incorporate pharmacotherapies for stimulant use disorder within these clinics once national guidelines are finalized and approved. In the meantime, existing guidelines are being used.[12]
- People experiencing stimulant-related harms continue to have access to addiction and mental health services. These services include in-patient withdrawal management, individual counselling, group services, intensive day treatment in Moncton, concurrent disorder live-in treatment, psychiatric services and medication management, where appropriate.
- Reported barriers include challenges implementing contingency management due to cost pressures, even though it is recognized as best practice; clients being moved between withdrawal management and psychiatry services; and a shortage of addiction specialists in New Brunswick.
- Increased funding for harm reduction supplies and services, including drug checking, was identified as important to expand service capacity and improve availability across the province. It was also noted that people accessing these services benefit from connections to additional supports, such as social supports, access to primary care and recovery planning.

Northwest Territories

Polysubstance Use and Harms

- The main stimulant-related harm reported by the node was deaths associated with contamination of stimulants with opioids. As a result, harm reduction approaches focus on making naloxone kits available, along with appropriate training, and on fentanyl testing to reduce the risk of opioid toxicity.
- For harms related to stimulant use alone, information is provided through training sessions that focus on recognizing signs and symptoms of stimulant toxicity and knowing when to seek help (e.g., calling 9-1-1 or going to a health centre).

[12] British Columbia Centre on Substance Use. (2022). Stimulant use disorder: Practice update.

What This Means in Practice

Healthcare Service Providers

- Stimulant-related health impacts are relatively consistent across settings and often overlap with mental health challenges and polysubstance use. Many people experience prolonged periods with little to no sleep, which can contribute to a range of harms. Common effects include agitation, anxiety and episodes of psychosis, often worsened by lack of rest, nutrition and stability. Stimulant-induced psychosis or paranoia can be particularly difficult to manage.
- There are currently no medications approved by Health Canada specifically for the treatment of stimulant use disorder. Clinicians are encouraged to review the most recent clinical practice guideline for the management of stimulant use disorder.[13,14] The guideline highlights the following approaches:
  - Contingency management is identified as the most effective treatment approach for stimulant use disorder and is considered the current standard of care. It can be used on its own or in combination with other psychosocial interventions and behavioural therapies, such as the Community Reinforcement Approach and cognitive behavioural therapy.
  - Pharmacotherapies, including psychostimulant medications, may be prescribed off label to treat stimulant use disorder based on clinical judgment and individual circumstances.

People with Lived and Living Experience of Substance Use

- Sharing pipes can occur and may lead to people using substances they were not expecting. Sharing smoking equipment can also contribute to the transmission of blood-borne infections, particularly when pipes are damaged or cause burns or sores.
- In the current drug supply, it is no longer "just stimulants."
- The most important consideration when using stimulants from the unregulated drug supply is that they still pose a risk for toxicity, even when a stimulant is the only substance used. Stimulants may also be contaminated with opioids (e.g. fentanyl or carfentanil) or other substances. People using any stimulant are encouraged to consider the following:
  - Assume that a drug may contain fentanyl, benzodiazepines, other stimulants or additional cutting agents. Nothing is pure.
  - Use drug checking services, when available, to test substances.

[13] Batki, S., Ciccarone, D., Hadland, S., Hurley, B., Kabernagel, K., Levin, F., … Luongo, P. (2024). The ASAM/AAAP clinical practice guideline on the management of stimulant use disorder.
[14] Batki, S., Ciccarone, D., Hadland, S., Hurley, B., Kabernagel, K., Levin, F., … Luongo, P. (2024). ASAM Pocket Guidelines and Patient Guide: Stimulant Use Disorder.

- Take precautions based on the assumption that any stimulant or pipe used may be contaminated.
- Avoid new suppliers when possible, as sample characteristics may be unknown.
- Carry naloxone and know how to use it.
- Use with others present when possible, or call the National Overdose Response Service (NORS).
- Use smaller amounts and test a dose first.
- Be aware that calling for help is protected under the *Good Samaritan Drug Overdose Act*.[15]

Public Health and Public Safety Decision Makers

- Continued investment in the collection and monitoring of data on the unregulated drug supply (e.g., stimulant price, purity, composition) is needed to help guide public health and public safety responses.
- Sustained investment in data on access to treatment for stimulant use disorder and to harm reduction services (e.g., drug checking and naloxone) is needed to understand and reduce stimulant-related harms.
- Strengthening social supports to address stigma related to stimulant use, along with improving access to housing, can help reduce stimulant use linked to housing instability (e.g., staying awake to protect belongings).
- Continued investment in the development of performance measurement frameworks is needed to assess the impact of drug law enforcement on communities, including potential unintended consequences.
- Developing strategies and best practices to improve safety for people who use stimulants and opioids remains important, given increasing polysubstance use and associated harms. Continued education for service providers also plays a key role in managing these risks.
  - Reports of stimulant-induced psychosis are contributing to increased pressure on services across the continuum of care and highlight the need for clearer guidance on acute management and service coordination.

[15] Health Canada. (2024). About the Good Samaritan Drug Overdose Act.

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Additional Research and Publications

Table 2. Additional clinical trials and articles on treatment for stimulant use disorder

Clinical Trial or Article	Type of Stimulant	Treatment, Substitution Therapy, or both	Country
Clinical trial of high dose lisdexamfetamine and contingency management in MA users (ASCME trial overview)	Methamphetamine	Both	Canada
Computerized exercise to alter stimulant approach responses (CEASAR)	Cocaine or methamphetamine	Treatment	Canada
Deep transcranial magnetic stimulation for stimulants use disorder	Cocaine and other stimulants	Treatment	Canada
Acceptance commitment therapy (ACT) for methamphetamine use disorder in women and gender non-conforming individuals	Methamphetamine	Treatment	Canada
Bupropion for treatment of amphetamine-type stimulant use disorder: A systematic review and meta-analysis of placebo-controlled randomized clinical trials	Amphetamine-type stimulant use	Treatment	Canada
Filament health announces authorization of Phase 2 clinical trial for PEX010 in the treatment of methamphetamine use disorder	Methamphetamine	Treatment	Canada
Scale interventions for the treatment and care of stimulant use disorders	All	Both	International (World Health Organization)