

# **Concurrent Use and Transition to Methamphetamine among persons at risk of OverDose**

**(CUT Meth OD) study**

**Final report February 24, 2024**

## Acknowledgements

We thank the research team, peer research assistants, participants, BC Centre for Disease Control (BCCDC) staff and students for their assistance and support throughout the study.

We respectfully acknowledge that BCCDC is located on the unceded traditional territories of the Coast Salish Peoples, including the territories of x<sup>w</sup>məθk<sup>w</sup>əyəm (Musqueam), Skwxwú7mesh (Squamish), and Səlilílwətaʔt (Tsleil-Waututh) Nations, and that this research was conducted across the unceded traditional territories of more than 200 First Nations in what is colonially called British Columbia.

## Ethics approval

The *Harm Reduction Client Survey* was approved by the University of British Columbia Office of Behavioural Research Ethics (UBC BREB) #H07-00570. The *Current use and transition to methamphetamine among persons at risk of overdose* study was approved by UBC BREB #H20-01475

## Funding

The *Harm Reduction Client Survey* (quantitative component) was funded by Health Canada's Substance Use and Addictions Program (#1819-HQ-000054) and the *Current use and transition to methamphetamine among persons at risk of overdose* study was funded by the Canadian Institute of Health Research (#170288). The funders had no input into study design, data collection, analysis, interpretation or knowledge translation.

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## Concurrent Use and Transition to Methamphetamine among persons at risk of OverDose (CUT Meth OD) study

### Rationale:

Availability and use of methamphetamine (MA) has increased in Canada, and particularly in BC.<sup>1-4</sup> MA use has been associated with health concerns and high risk behaviours. Many people who use MA report using it with other drugs such as opioids.<sup>4-6</sup> Concurrent use may increase the risk of overdose, overdose death and other negative long-term health outcomes.<sup>7</sup> However, there is limited literature identifying prevalence and reasons for increasing MA use on its own or with other substances.

### Aims and objective:

This study, funded by CIHR in 2020 aimed to understand:

- 1) social and systemic factors associated with increased MA use across BC
- 2) reasons for and how MA is used with other substances;
- 3) perceptions of the benefits and harms of MA use.

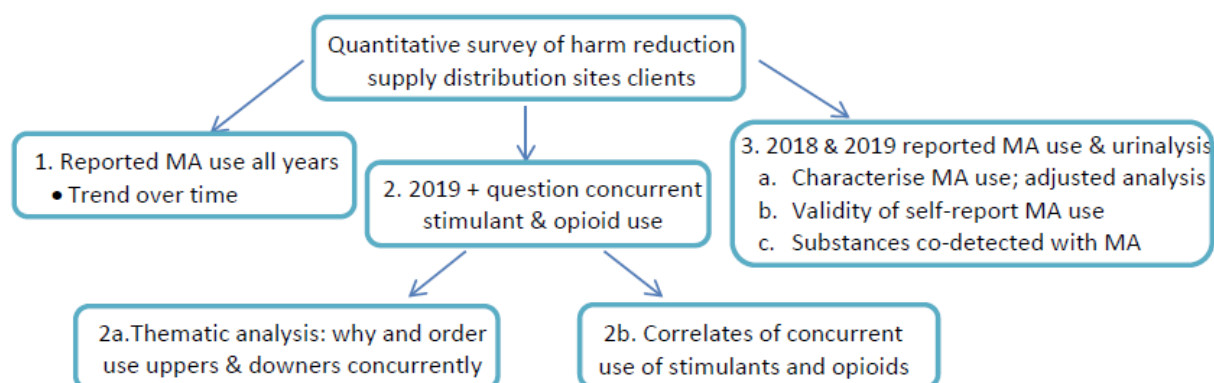
The study findings will help fill the knowledge gap to better understand factors associated with MA use and to develop recommendations for effective harm reduction interventions.

### METHODS:

A mixed methods approach was used to obtain quantitative and qualitative data.

#### Quantitative data

Data were obtained from the BC Harm Reduction Client Survey, a survey regularly implemented among clients of harm reduction supply distribution sites since 2012.<sup>2</sup> Questions were added to the 2019 survey about concurrent use of stimulants and opioids. A descriptive and regression analysis was performed to assess the prevalence, mode, order and reasons for concurrent use of MA with opioids. Participants in 2018 and 2019 provided urine samples for urinalysis to identify substances co-detected with MA.



Total number of survey participants: 2018 (n=486), 2019 (n=621) and 2021 (n=537)

**Figure 1.** Quantitative components of CUT Meth OD study

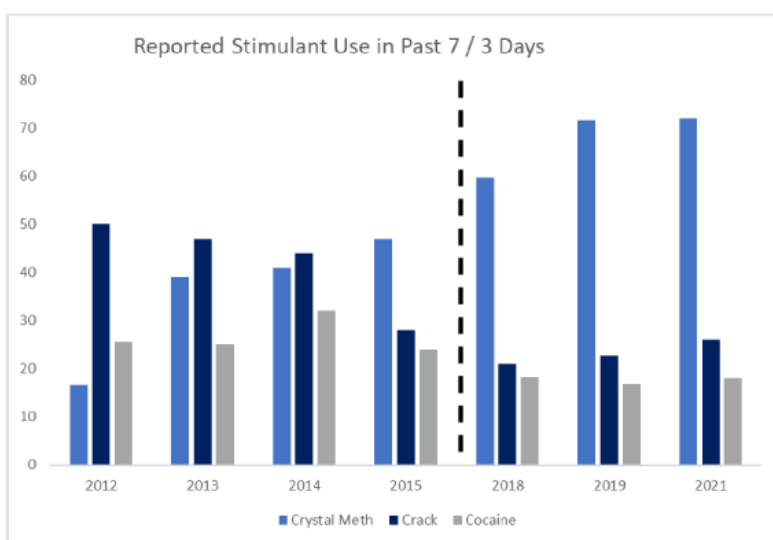
### Qualitative data

Participants who had used MA along with other substances in the past month were interviewed. Peer research assistants (PRAs) recruited from the Professionals for Ethical Engagement of Peers (PEEP), a consultation and advisory group from across BC, were involved at all stages of the study. Trained PRAs assisted in inviting participants and facilitated in-depth qualitative semi structured interviews using a guide developed in collaboration with community partners and PEEP advisors. Interviews were supplemented with a timeline follow-back tool to determine the context of the participants' substance use patterns. Research team members including PRAs coded the data to identify emerging themes.

## RESULTS - Quantitative

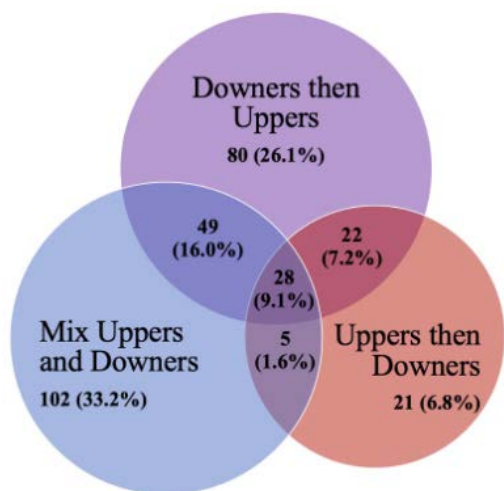
### 1. Trend over time:

Reported past 7 day MA use was 17% in 2012 and rose to 41% in 2014; it increased further to 60% in past 3 days in 2018 and 72% in both 2019 and 2021 – see figure 2.



**Figure 2.** Reported recent stimulant use (2012-15 past 7 days; 2018-21 past 3 days)

### 2a. Order and reasons for concurrent use of uppers and downers<sup>8</sup>



Of 307 participants who reported using uppers and downers concurrently in the past 3 days, 58% reported using downers then uppers, 25% used uppers then downers and 60% mixed uppers and downers together see Figure 3. About a third (34%) used in two or more different orders.

Thematic analysis of participant responses as to why they used uppers and downers concurrently identified four major themes 1) self-medication, 2) availability and preference, 3) drug effects/properties and 4) financial and life situations . See Table 1.

**Figure 3.** Order of use of uppers and downers

**Table 1.** Distribution of responses for those who reported using uppers and downers concurrently in past 3 days

Themes and subthemes	Percentage of comments reflective of theme or subtheme for each response option		
	Downers then uppers (n = 96)	Uppers then downers (n = 44)	Mix uppers and downers (n = 129)
<b>Self-medication</b>	<b>34.4</b>	<b>27.3</b>	<b>17.1</b>
Management of mood disorders and self-medication	25.0	27.3	14.7
Physical dependence	5.2	-	-
Avoiding overdose	4.2	-	2.3
<b>Availability and preference</b>	<b>25.0</b>	<b>31.8</b>	<b>10.9</b>
Habit or preference	17.7	15.9	7.8
Availability	7.3	15.9	3.1
<b>Drug effects/properties</b>	<b>32.3</b>	<b>36.4</b>	<b>62.0</b>
Desire for a specific type of high	20.8	15.9	51.9
Balance and leveling out	11.5	20.9	6.2
Mixture properties	-	-	3.9
<b>Financial and life situation</b>	<b>8.3</b>	<b>4.5</b>	<b>10.1</b>
Cost-effectiveness	4.2	4.5	7.8
Environmental factors	4.2	-	2.3

Findings were presented as a poster at College on Problems of Drug Dependence virtual annual scientific meeting, June 2021 and Canadian Centre for Substance Use and Addiction, Issues of Substance Virtual Conference Nov 2021.<sup>9,10</sup>

## 2b. Correlates of concurrent use of uppers and downers<sup>11</sup>

Among people who used stimulants and/or opioids in the last three days, over half (53%) reported using drugs concurrently - one after the other, or together. In adjusted analysis, those who used drugs concurrently tend to be younger, had no paid work, used drugs daily (aOR=3.78, 95% CI 2.28–6.40) and were more likely to experience an opioid overdose in the previous 6 months (OR=2.74, 95%CI 1.71–4.51). They were also more likely to engage with harm reduction and treatment services including: had a naloxone kit aOR=1.94, 95% CI 1.15–3.31, used at an observed consumption site (aOR=2.51, 95% CI 1.57–4.07) and were prescribed opioid agonist therapy (aOR=2.92, 95% CI 1.81–4.77). Thus opioid agonist therapy may not address the needs of the diverse population of people who use drugs. Improving access to age-appropriate services and expanding the availability of both legal and regulated stimulants and opioids may further reduce harms of concurrent use.

Findings were presented as a poster at College on Problems of Drug Dependence Annual virtual meeting Virtual, June 2021 and as an oral presentation at Canadian Centre for Substance Use and Addiction, Issues of Substance Virtual Conference Nov 2021.<sup>10,12</sup>

### 3. Methamphetamine use and urinalysis from 2018 and 2019 surveys<sup>13,14</sup>

3a) Crystal meth was the most frequently reported substance used (excluding tobacco) in the past three days in 2018 and 2019 (60% and 72%, respectively). Smoking was the main route of administration for crystal meth, crack, heroin, and fentanyl. Multivariate analysis determined significantly higher odds of crystal meth use among those who used opioids (adjusted odds ratio (aOR) = 3.13), cannabis (aOR = 2.10), and alcohol (1.41), and among those who were not regularly housed (aOR = 2.08) and were not employed (aOR = 1.75). Age  $\geq 50$  was inversely associated with crystal meth use.

3b) More than 80% of participants in both 2018 and 2019 who had amphetamine/methamphetamine detected reported using crystal methamphetamine, and over 90% of participants with reported use had amphetamine/methamphetamine detected in their urine. Sensitivity of self-reported crystal meth use was 86%, specificity was 86%, positive predictive value was 96%, and negative predictive value was 65%.

Findings 3a and 3b were presented at BCCDC Research week October 2020.<sup>15</sup>

3c) A variety of substances were co-detected among participants that had methamphetamine detected in their urine through urine toxicology screening. It is difficult to discern between diacetylmorphine and morphine use as diacetylmorphine (heroin) metabolizes to morphine via short-lived acetylmorphine, and morphine metabolizes to hydromorphone; therefore we report as diacetylmorphine/morphine.

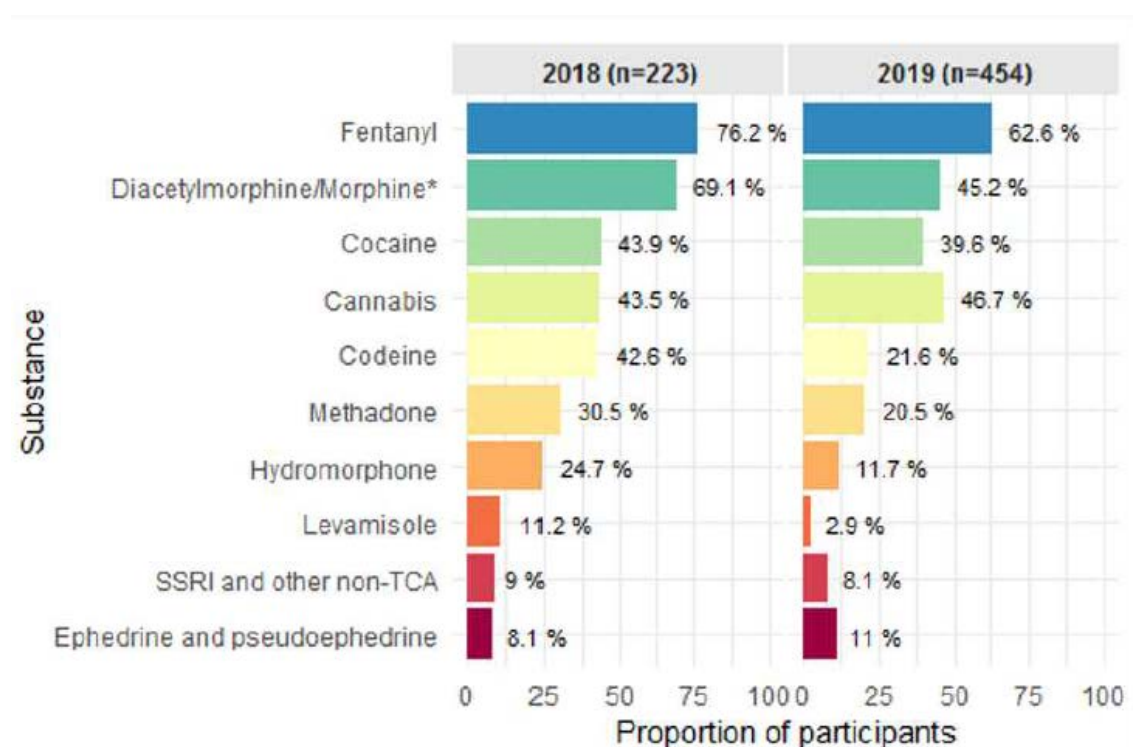
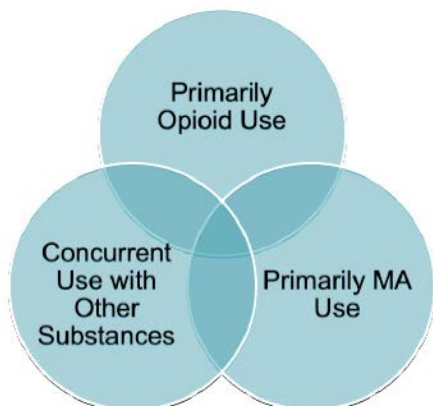


Figure 4. Substances detected among participants with methamphetamine detected in 2018 and 2019

## RESULTS – Qualitative

### Patterns of concurrent MA use with other substances

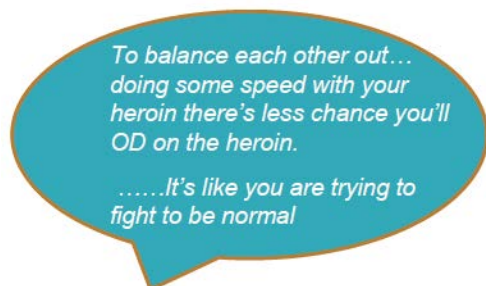
We identified three patterns of MA use among 42 participants (26 men, 15 women and 1 gender non-conforming) who used MA with other substances in the last month



1. Primary opioid use: MA is used (on the side) to moderate opioid use
2. Primary MA use: MA is used concurrently with alcohol and cannabis
3. MA used concurrently with other substances (i.e. GHB, MDMA, cocaine, ketamine etc.) for recreational purposes and/or to enhance sexual activity

Figure 5. Patterns of MA use with other substances

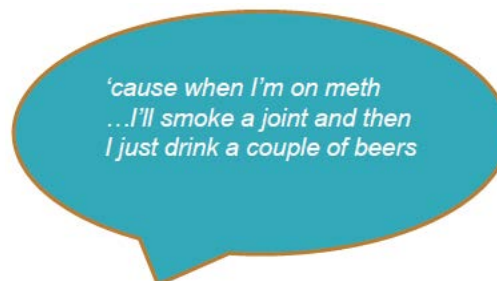
#### 1. Primary opioid use: MA is used to moderate opioid use



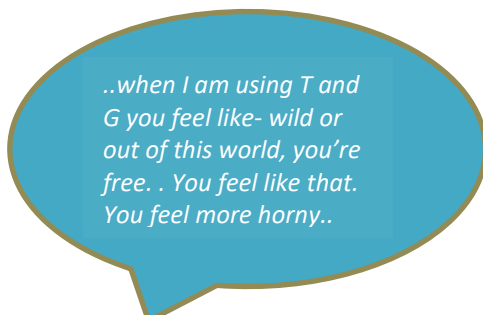
- Participants often used MA every time they used opioids, to make opioids (especially fentanyl) last longer. This allowed them to save money, to feel 'normal' and to maintain daily activities
- Participants often believed MA use would reduce the risk of an opioid overdose

#### 2. Primary MA use: MA is used concurrently with alcohol and cannabis

- Participants often transition to MA from crack because it's cheaper and effects last longer
- Use MA daily to maintain the high and decrease withdrawal symptoms
- Alcohol, cannabis and crack most often used concurrently. Alcohol & cannabis to 'mellow' the MA high or use MA for stimulation while drinking



#### 3. MA used concurrently with other substances



T= Tina (MA); G = GHB

- Participants describe using MA concurrently with GHB, MDMA, ketamine, alcohol or poppers recreationally and/or to enhance sexual activity
- Men who have sex with men (MSM) in particular engage in 'ParTy-n-Play' (PnP) sometimes called 'chemsex'
- To reduce inhibitions; lessen mental health challenges, feelings of loneliness and social anxiety
- As a 'social lubricant', it fosters a sense of belonging within the LGBTQ2S+ community, increases pleasure, and enhances sexual/social activities

### ParTy-n-Play culture

Of six MSM participants (5 identified as gay, 1 bisexual) aged 19-50, half identified as Indigenous. None accessed harm reduction services; but noted accessible/acceptable services were needed as stigma and discrimination often prevent people from seeking help. An infographic including tips for safer sex and drug use, supports and resources was developed.<sup>16</sup> Challenges and opportunities identified were:

#### Challenges regarding MA use

- Mental health concerns e.g. PTSD, depression, anxiety, ADHD
- Poorer performance in the work place
- Experiencing withdrawal symptoms
- Fear of stigma
- Poor sleep quality
- Tension in relationships

#### Opportunities regarding MA use

- Increased awareness of PnP and the impacts of substance use
- Online environment for peer-to-peer support
- Health promotion initiatives and activities -
  - integrate harm reduction & sexual health services
- Safe inhalation services
- Counselling
- Expand mental health supports

ParTy-n-Play findings were presented as a poster at Canadian Centre for Substance Use and Addiction, Issues of Substance virtual conference Nov 2021<sup>17</sup>

### Misperceptions of concurrent use<sup>18</sup>

A common reason given for using MA with opioids was that they balanced each other out and that MA was thought to protect against opioid overdose. An infographic was developed to provide facts and recommendations to inform people that using MA together with opioids increases the risk of overdose and other harms. Information included that MA *'does not stimulate the breathing centre so will not reverse the effects of an opioid overdose'*; also that using opioids with MA *'increases the risk of over-amping'* because a person *'may not notice the early signs'*.

### Re-visioning risk to survival and wellness<sup>19</sup>

Initial thematic analysis of interviews with 22 participants who used MA and opioids identified patterns and behaviours related to risk: risks of using (overdose/stigma); risks of not using (withdrawal, loss of benefits of use) and risks of engaging with services (stigma, feeling unsafe and being dismissed). Peer research assistants' feedback articulated that focusing on risk perpetuates stigma and reinforces barriers to engaging with services. Therefore data were reanalysed to explore how people use drugs to be safer i.e. for survival and wellness. This identified two new themes:

- 1) Personal safety behaviours (self-regulation, self-care)
- 2) Interpersonal safety behaviours (using with peers, peer led or public health led services)

This highlighted the importance of collaborating with people with lived/living experience of substance use during all stages of research to ensure results are presented in a relevant, meaningful, and non-stigmatizing way and can suggest interventions/services that are acceptable.

Re-visioning findings were presented as a poster at Canadian Centre for Substance Use and Addiction, Issues of Substance virtual conference Nov 2021 and an oral presentation at Lisbon Addictions conference November 2022.<sup>20,21</sup>



## Exploring consequences of the COVID-19 pandemic on overdose risk in British Columbia from the perspectives of people who use substances<sup>22</sup>

Semi structured interviews from CUT Meth OD and the Good Samaritan Drug Overdose Act evaluation studies were analysed to explore the impact of COVID-19 on access to and availability of substances, harm reduction services and supplies, the ability to ‘buddy up’ and overdose responses.

We identified five overarching themes:

1. Physical distancing measures created social and physical isolation leading to increased substance use and using alone more often without bystanders able to respond in the event of an emergency
2. Inconsistent drug availability and quality due to supply chain issues with drug price spiking early and increasing toxicity and impurities in unregulated substances
3. Stigma towards people who use substances was compounded by COVID-19
4. Access to some harm reduction services and supply distribution sites were restricted early in the pandemic
5. Additional burden was placed on peer workers on the frontlines of the illicit drug toxicity crisis

The pandemic highlighted ongoing gaps in services for people who use substances. Policies put in place for public health emergencies may disproportionately impact people who use substances and emphasize the importance of services that are adaptable to meet the diverse needs and preferences of people who use substances, including low-barrier approaches that can be scaled-up in times of increased demand.

## SUMMARY

This study used quantitative and qualitative methods to explore MA use and concurrent use with other substances. In 2019 and 2021, 72% of people using harm reduction supply distribution sites reported recent MA use, up from 41% in 2014; smoking was the predominant mode of MA use. MA use was higher in those who used opioids, cannabis and alcohol, those who were not regularly housed, had no paid work and who were younger. In 2019 the most common substance found in urine with MA was fentanyl (>60%); diacetylmorphine/morphine and cocaine were found in 40-45% of urine samples.

Of persons who reported using uppers and downers concurrently, 60% used uppers and downers together, 58% used downers then uppers, 25% used uppers then downers. Reasons for concurrent use included self-medication, drug effects, and availability/preference. Those who used MA concurrently with other substances tended to be younger, had no paid work, used drugs daily and were more likely to overdose. People used MA concurrently with opioids for two main reasons –personal safety behaviours (e.g. self-regulation and self-care) and interpersonal safety (using with others, peer or public health led services). Some individuals held misperceptions that stimulants reduced the risk of an opioid overdose.

Three patterns of concurrent MA use with other substances were identified: 1) Primary opioid use with MA use on the side; 2) Primary MA use with cannabis and alcohol; 3) MA use concurrently with other substances (e.g. GHB, MDMA, cocaine) for recreational purposes and/or to enhance sexual activity. MSM who used MA with other substances for party and play did not access harm reduction services.

In conclusion, we identified high prevalence of MA use, and diverse reasons for using MA with other substances. Individuals may use MA with other substances intending to be safer, but have potentially harmful misperceptions. Community based peer researchers were engaged throughout the research process during which they were empowered and developed research skills. Their input provided important context to findings so that recommendations were relevant and acceptable.

Evidence based harm reduction messaging along with a range of diverse, non-stigmatizing age and gender appropriate services are needed.

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