



## Findings and Analysis for Overdose Prevention Society

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**JJ Bean**  
COFFEE ROASTERS

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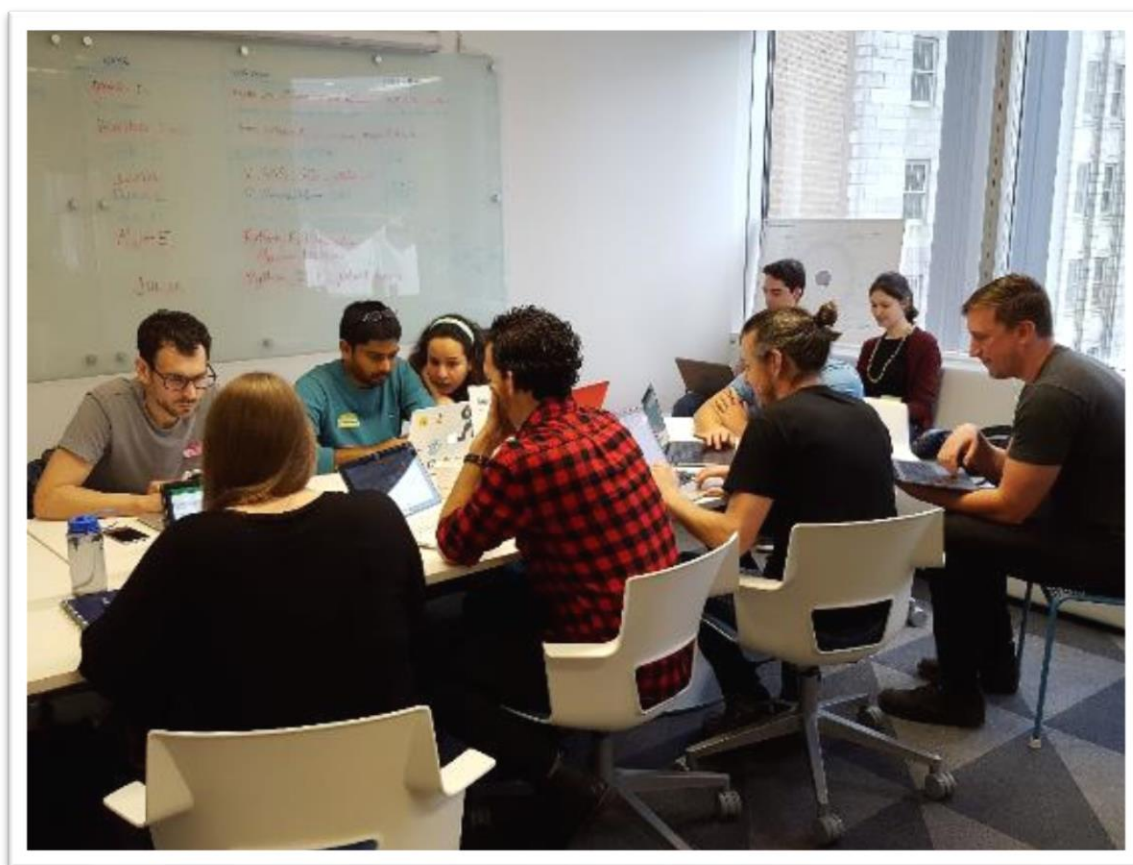
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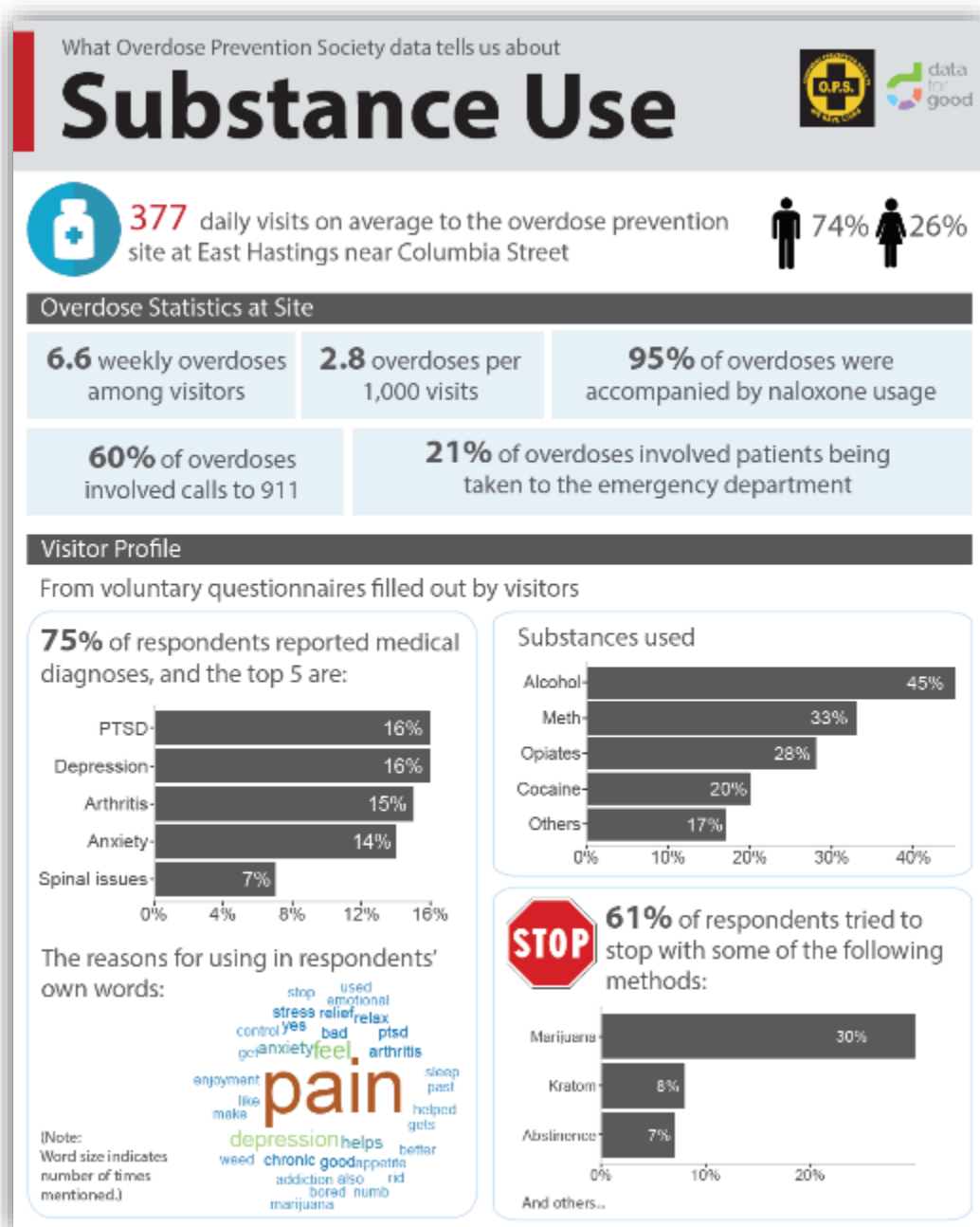
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Data for Good volunteers at datathon for Overdose Prevention Society, January 2018



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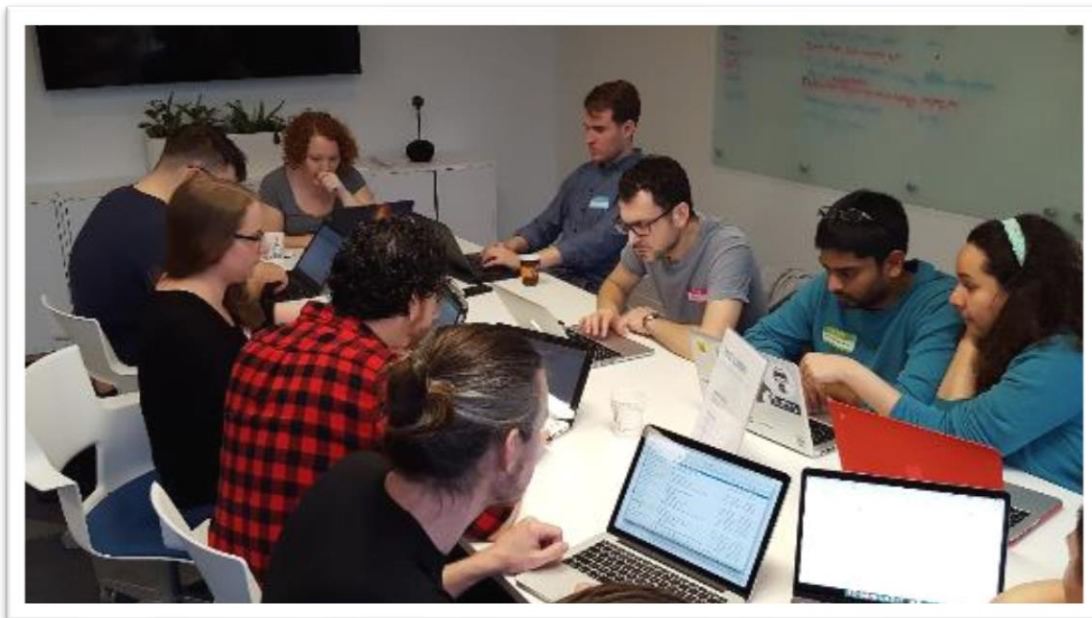
That there has yet to be a single fatal overdose after over 100,000 visits provides strong evidence that low-barrier harm reduction is extremely effective in saving lives and supports calls to expand such services where there is a need.



An unprecedented overdose crisis is killing thousands of people across Canada, and nowhere is the death toll more pronounced and shockingly tragic than in British Columbia, where 1,449 people have died from illicit drug overdoses in 2017<sup>1</sup>. Fuelling the loss of life is a toxic drug supply tainted by fentanyl and carfentanil and inadequate drug policies continuing to focus on prohibition and criminalization. This policy approach has been shown to push substance use further underground, thereby increasing the harms to society.

Within this environment, people who use substances and their advocates have taken a leading role upholding the health and safety of those at risk by setting up overdose prevention sites offering low-barrier harm reduction services. One such site was located along East Hastings Street near Columbia Street in Vancouver's Downtown Eastside<sup>2</sup>. Founded and run by the [Overdose Prevention Society](#) (OPS), the site and its model of service delivery have proven extremely effective in saving lives for a community in dire need.

In the beginning of 2018, Data for Good Vancouver partnered with OPS to analyze data contained in two anonymized data sets, one relating to self-reported substance use (data from the [Downtown Eastside Market](#)); the other, visit volumes and health outcomes at the site. On January 13, 2018, volunteers from Data for Good Vancouver took part in a “datathon” where the raw data was analyzed. The findings, insights, and recommendations from that analysis are summarized in the following report.



Data for Good volunteers at datathon for Overdose Prevention Society, January 2018

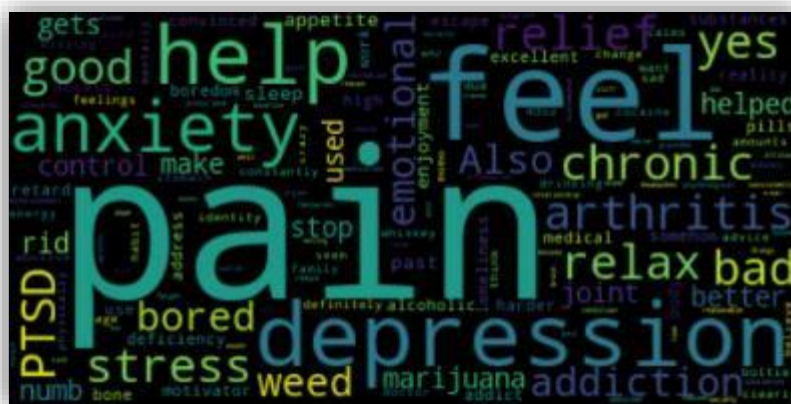
<sup>1</sup> <https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/death-investigation/statistical/illicit-drug.pdf>

<sup>2</sup> This site was known as “the Trailer” and has since relocated to an adjacent property.

## Note

For these reasons, definitive conclusions and linear trends, except where data collection methods remained consistent, are not drawn. The findings contained in this report should be considered a starting point and guide for further investigation from which more definitive conclusions may be reached.

It indicates the frequency of words in answer to the question, “*Why do you believe you use the substances listed above?*” It is a measure of word frequency relative to total words used as opposed to total number of respondents.



When analyzing word frequency against the number of respondents (88):

- **36%** of respondents identified **physical pain** as a reason for substance use; and
- **44%** of respondents identified **physical and/or psychological pain** as a reason for substance use.

The results, indicating that some form of pain underlies substance use for a large percentage of people surveyed, runs counter prevailing narratives that individuals who use substances do so for pleasure, boredom, or as a result of poor life choices. Based on the analyzed data, these narratives are not supported.

<sup>3</sup> <http://amueller.github.io/>

## Medical Diagnoses

Out of a total of 88 respondents, 75% reported one or more medical diagnoses and 40% reported having a mental illness. Responses included a wide range of medical conditions (Table 1). The most prevalent diagnoses were depression, PTSD, arthritis, and anxiety.

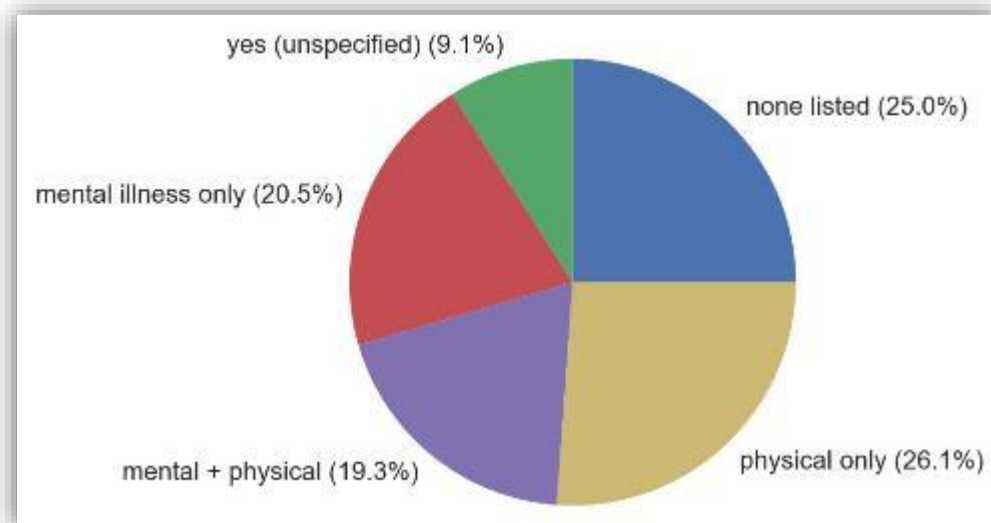


Figure 1: Percentage of respondents reporting medical diagnoses (out of 88 respondents)

Category	Medical Conditions
Mental Illness	Anxiety, Bipolar Disorder, Depression, Panic Attacks, Attention Deficit Hyperactivity Disorder (ADHD), Post Traumatic Stress Disorder (PTSD), Schizophrenia, Schizoaffective Disorder
Autoimmune	HIV, Lupus
Cancer	Cancer (specific type not reported), Mesothelioma
Joints / Spine / Chronic Pain	Arthritis, Osteoarthritis, Spinal Injury, Spinal Degeneration, Scoliosis, Hip Dysplasia, Other Joint Problems, Other Chronic Pain
Liver / Kidneys / Gastrointestinal	Hepatitis C, Liver Disease, Renal Disease, Gastrointestinal Disorder
Neurological	Fibromyalgia, Grand Mal Seizures, Multiple Sclerosis, Parkinson's Disease
Respiratory / Cardiovascular	Asthma, Chronic Obstructive Pulmonary Disease (COPD), Mesothelioma, High Blood Pressure, Congestive Heart Failure
Other	Allergies, Vision Issues, Eczema, Herniatic Tissue, Memory Loss, Sleep Disorders

Table 1: Medical diagnoses reported by respondents

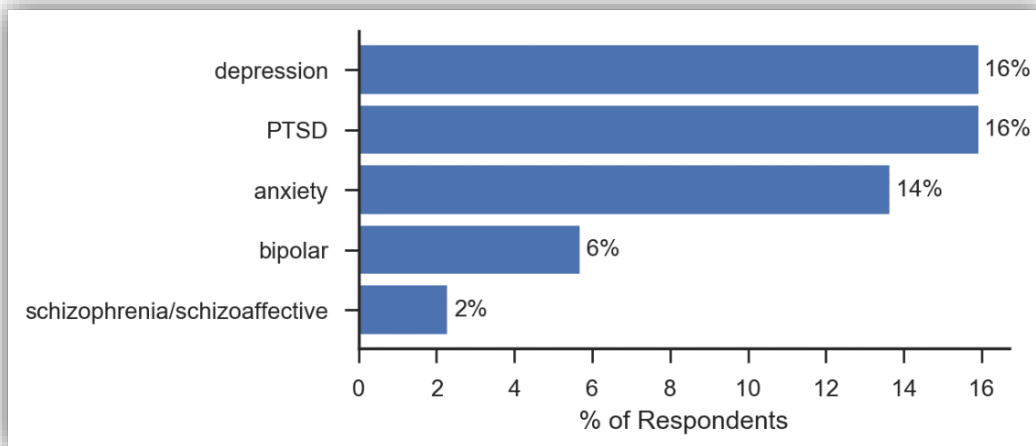


Figure 2: Reported mental illness diagnoses. Only categories with at least two respondents are shown.

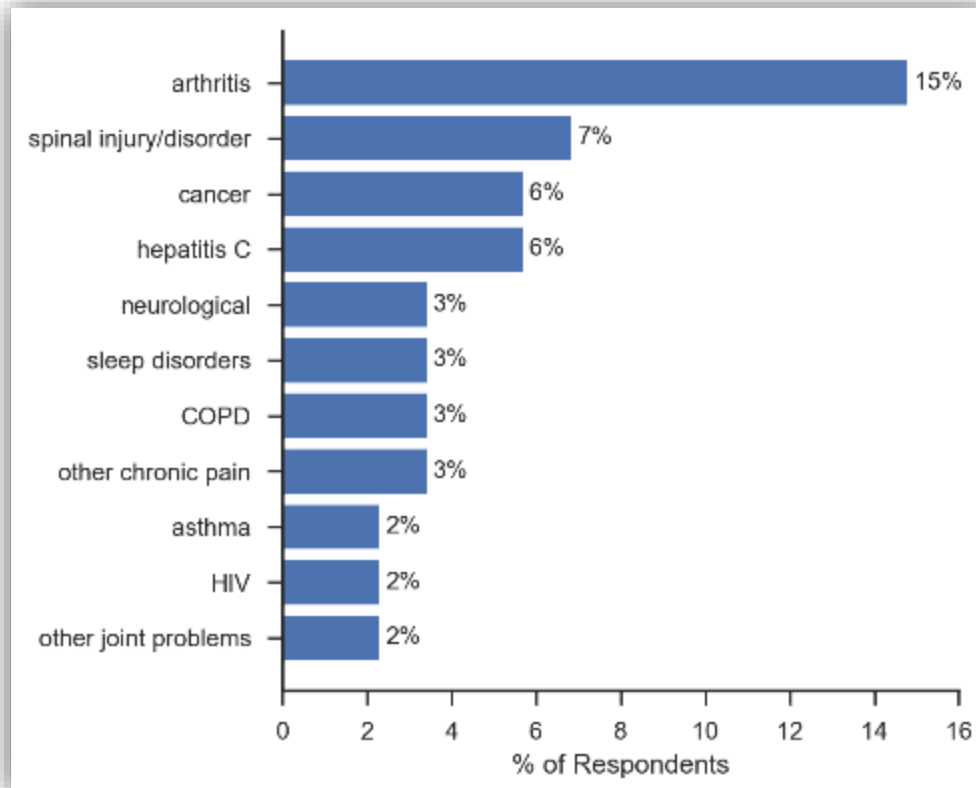


Figure 3: Reported physical illness diagnoses. Only categories with at least two respondents are shown.



### Note

Our “marijuana” category includes substances reported as marijuana, cannabis, THC, and any other name or form of marijuana, excluding CBD (non-psychoactive component of marijuana).

*Recommendation: To simplify analysis of future questionnaire data, we recommend explicitly including “marijuana/cannabis” as a multiple-choice option.*

## Substances Used

Survey respondents were asked which substances they currently use as a multiple-choice selection among the following categories: alcohol, opiates, (meth)amphetamine, cocaine, and “other”. Although marijuana was not listed among the given categories, 32% of respondents used the “other” category to report usage of marijuana. In these cases, we categorized the response as marijuana and removed it from the “other” category.

An additional 50% of respondents did not mention marijuana in their responses but reported purchasing it at the Downtown Eastside Market, adjacent to the overdose prevention site, in bud, edible, or capsule form. In total, 82% of respondents reported usage and/or purchase of marijuana.

After marijuana, the most prevalent substance used/consumed among respondents was alcohol (45% of respondents) followed by methamphetamines (33% of respondents).

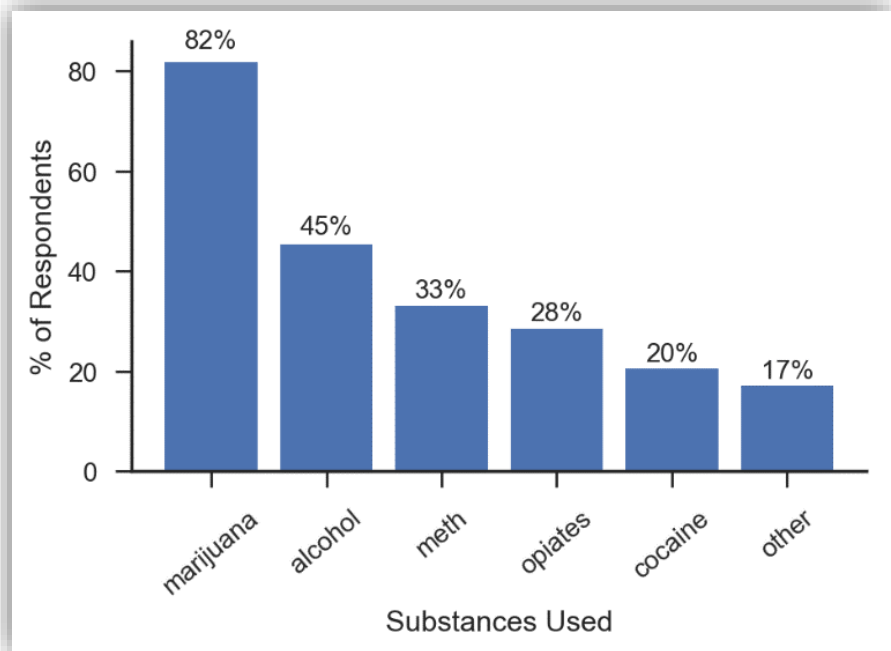


Figure 4: Reported substance usage. “Other” category includes benzodiazepines, methadone, Tylenol 3, tobacco, and unspecified substances reported as “mood stabilizers,” “psychedelics,” and “other”.

## Products Purchased

84% of respondents reported purchasing one or more products at the Downtown Eastside Market. 57% of respondents purchased a single product, while 27% of respondents purchased two or more. The most common product purchased by respondents was “bud/grass” (51% of respondents), followed by “edibles” (26% of respondents).

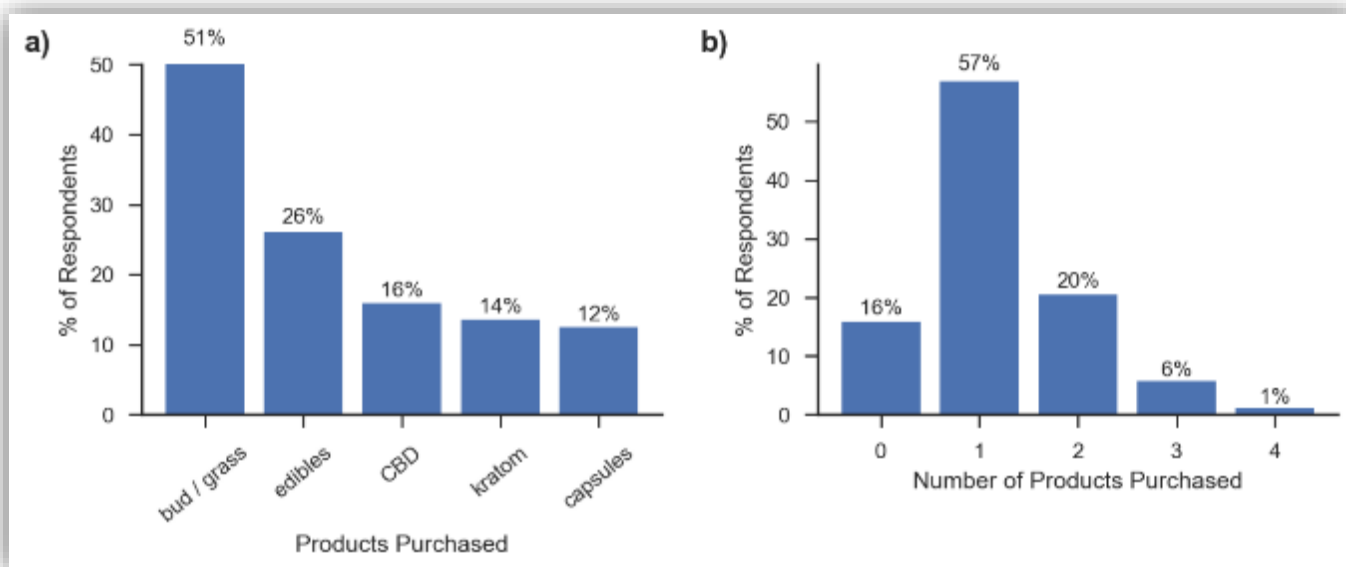


Figure 5: a) Reported purchases of each product, and b) number of products purchased by respondents

## Marijuana as an Alternative

74% of respondents reported a favourable opinion of marijuana as an alternative to their current substance use. Out of the 46 responses that further specified one or more reasons for their opinion, the most common were:

- helps with pain/stress/mental illness (39%);
- replacement for other substances (13%);
- healthier than other substances (7%);
- has helped them reduce/quit other substances (7%); and
- less expensive than other substances (4%).

(Do you feel like marijuana could be an alternative to your current substance use?)

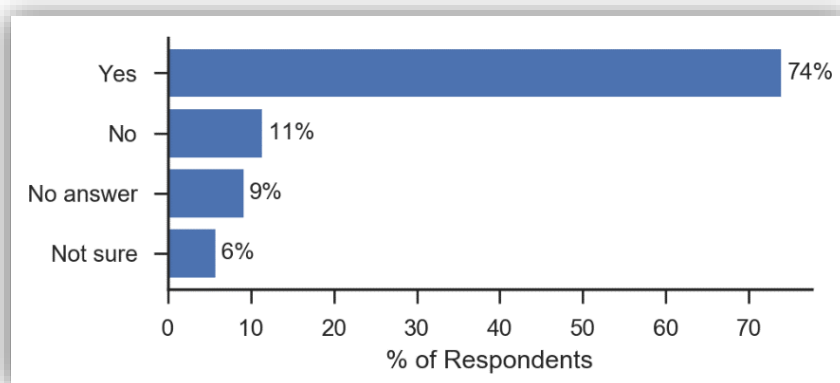


Figure 6: Respondents' opinions of marijuana as an alternative to their current substance use (percentage out of 88 respondents)

## Kratom Knowledge

A total of 32% of respondents reported some knowledge of kratom. Of this group:

- 43% knew that it was an opiate substitute or helped with withdrawal;
- 21% reported that they had used it and found it helpful;
- 21% read about it or learned of it through a friend;
- 11% knew that it comes from a plant; and
- 7% knew that it helps with pain.

## Stop Methods

Methods of ending substance use were captured by the question, “If you are trying to stop, which method are you using?” This question was open ended, allowing for multiple methods to be recorded per person. For analysis, if a respondent did not include an answer or indicated that they were not trying to stop using, their response/non-response was categorized as “none”. Responses in which the individual had indicated that they were trying to stop but did not state the specific method were classified as “not specified”. Responses where it was unclear whether the individual was trying to stop were categorized as “n/a”.

Of the 88 respondents, 54 (61%) reported that they were trying to stop substance use with various methods. As many responses could be recorded on the survey, a total of 69 responses were captured for these 54 individuals. 30% of respondents reported using marijuana as a cessation method. 8% reported kratom usage as at least one method by which they were trying to stop, 7% stated that they were abstaining from using the substance, and 6% reported using peer support/support groups. Other responses (Figure 7) included counselling, various forms of treatment (suboxone, methadone, tapering, rehab), and physical activity.

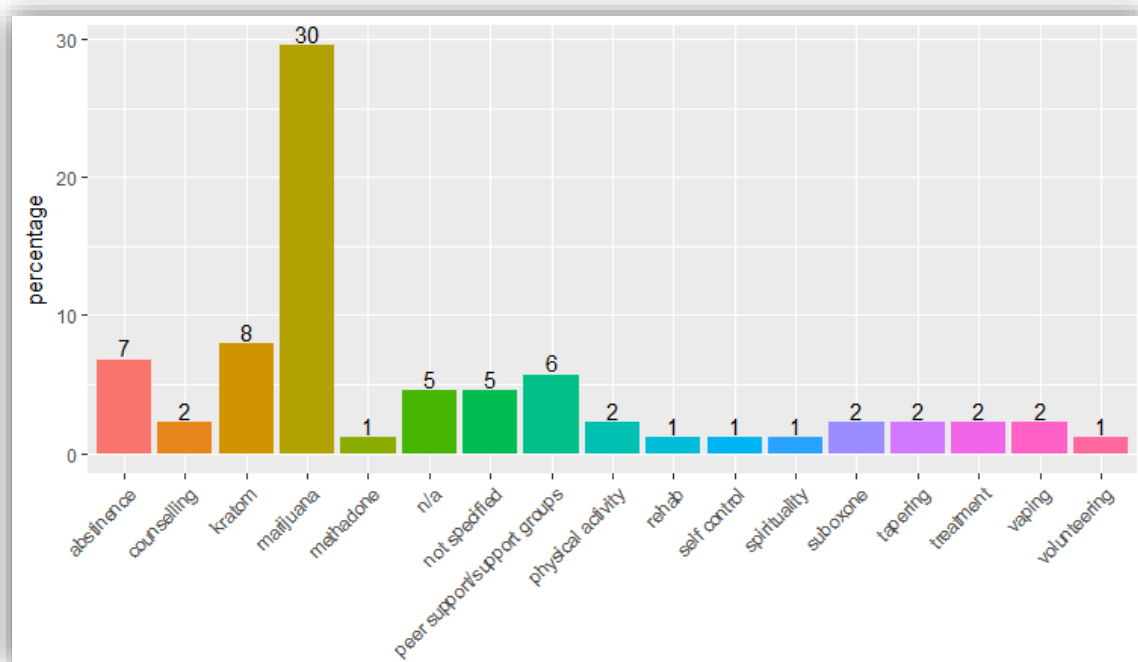


Figure 7: Stop methods reported by individuals attempting to end substance use

## Medical Diagnoses and Substances Used/Purchased

We categorized responses by reported substance usage to explore how the frequencies of medical conditions and product purchases in each group compared with the overall averages of all respondents. The highest rates of reported mental illness were among people who used methamphetamines and opiates. In particular, people who used methamphetamines reported higher rates of PTSD, depression, and bipolar disorder, compared with the overall average (Figure 8). Individuals who used opiates reported higher rates of anxiety (24%) compared with the overall average (14%).

	People Using Opiates (n=25)	People Using Meth (n=29)	All Respondents (n=88)
Mental Illness (any)	48%	59%	40%
Physical Illness (any)	44%	55%	45%
Anxiety	24%	14%	14%
Arthritis	12%	14%	15%
Bipolar Disorder	4%	14%	6%
Depression	16%	21%	16%
PTSD	8%	28%	16%

Figure 8: Prevalence of selected medical conditions among people who consume methamphetamines and opiates compared with overall averages

Next, we categorized responses by reported products purchased to explore how the frequencies of medical conditions and substance usage in each group compared with the overall averages of all respondents. The highest prevalence of mental illness was among respondents who purchased kratom and CBD. Kratom purchasers reported higher rates of arthritis, PTSD, depression, anxiety, alcohol consumption, and methamphetamine usage compared with the overall averages (Figure 9).

	Kratom Customers (n=12)	CBD Customers (n=14)	All Respondents (n=88)
Mental Illness (any)	67%	64%	40%
Physical Illness (any)	50%	50%	45%
Anxiety	25%	14%	14%
Arthritis	42%	14%	15%
Bipolar Disorder	8%	14%	6%
Depression	25%	14%	16%
PTSD	33%	21%	16%
Alcohol Usage	75%	50%	45%
Meth Usage	58%	36%	33%

Figure 9: Selected medical conditions and substance usage among kratom and CBD customers compared with overall averages

## Visitor Statistics at Overdose Prevention Site

	Average	Range (min. – max. value)
Number of daily visits	377	43 – 721
Proportion of male visits	73.5%	46.3% – 100%
Proportion of female visits	26.3%	0% – 53.7%
Proportion of smokers	36.9%	14.0% – 88.5%
Proportion of injectors (inferred from proportion of smokers, assumes that all visitors who are not smokers are injectors)	63.1%	11.5% – 86.0%

Table 2: Overdose prevention site visitor statistics (December 25, 2016 – October 9, 2017)

## Total Visits Over Time

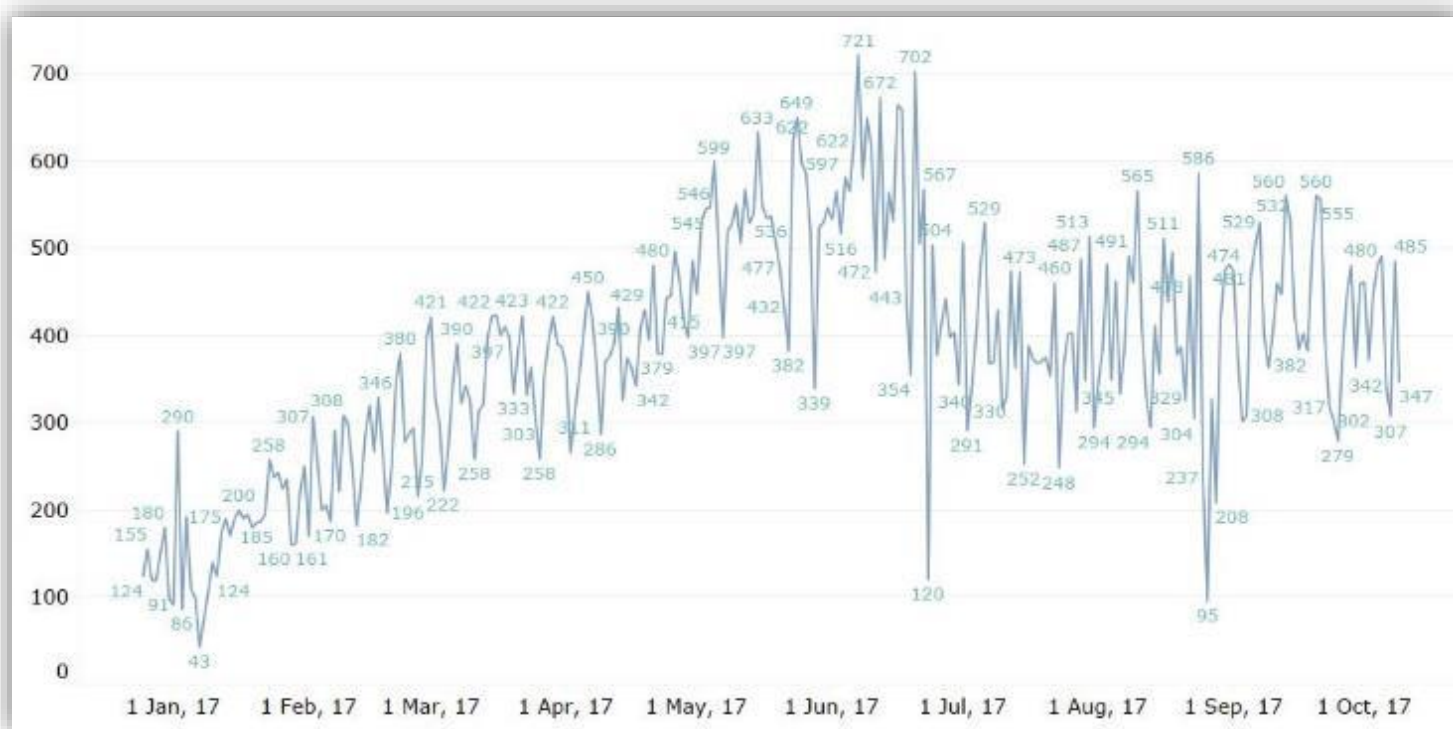


Figure 10: Total visits to overdose prevention site over time

Total visits to the overdose prevention site increased over time between December 25, 2016 and October 9, 2017; however, there were significant variations in data collection methods, which makes establishing an accurate linear trend problematic. Before April 21, total visits, male visits, and female visits included both injectors and smokers. After June 11, 2017, these categories only reflected injectors.



During the measured time period there were at least 108,803<sup>4</sup> visits to the overdose prevention site and **no fatal overdoses**. The most daily visits were recorded on June 7, 2017 with 721, while the most monthly visits were recorded in May with 16,251. That there has yet to be a single fatal overdose after over 100,000 visits provides strong evidence that low-barrier harm reduction is extremely effective in saving lives and supports calls to expand such services where there is a need.

## Overdose Statistics

	Average
Number of overdoses/week	6.6
Number of overdoses/1000 visits	2.8
Proportion of overdoses where naloxone was administered	95.3%
Proportion of overdoses where 911 was called	60.0%
Proportion of overdoses where patient was transferred to emergency department	21.2%

Table 3: Overdose statistics

The Overdose Prevention Society reported an average of 6.6 overdoses per week, or nearly one overdose per day of operation. In 95.3% of cases, the overdose was treated with naloxone.



Data for Good volunteers at datathon for Overdose Prevention Society, January 2018

<sup>4</sup> Data was missing for certain days.

## Overdoses Over Time

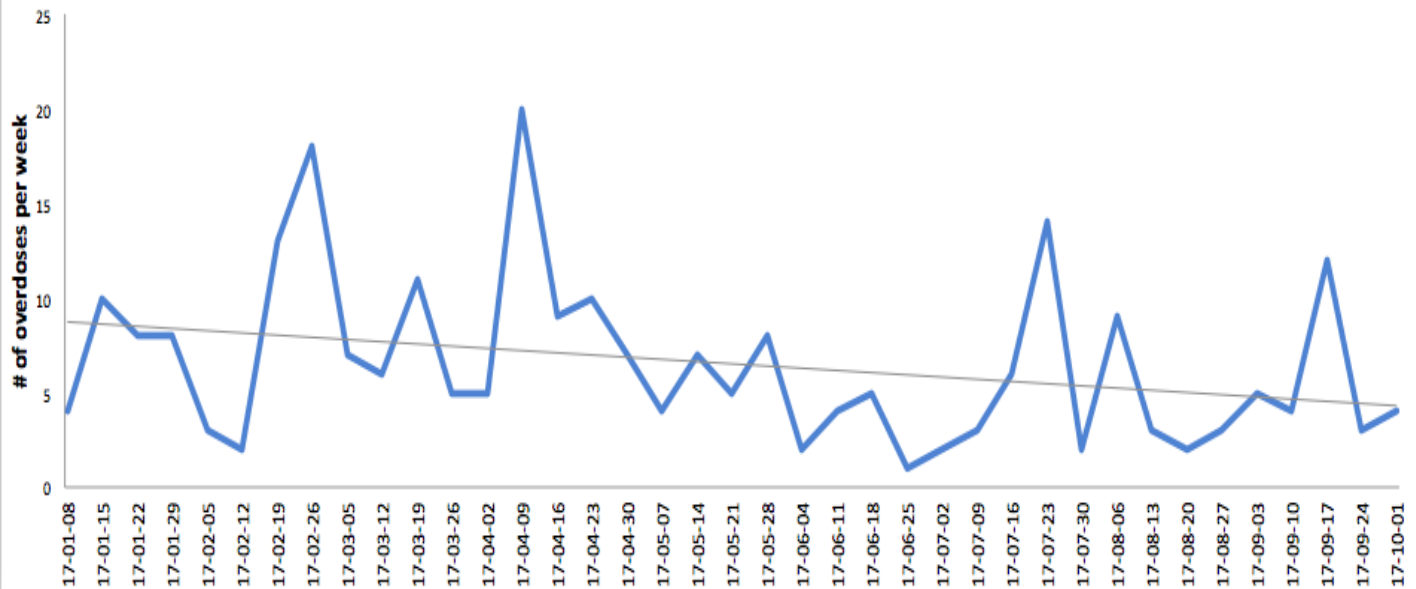


Figure 11: Overdoses over time. Values suppressed for confidentiality.

There was a total of 255 overdoses over the analyzed time period (December 25, 2016 – October 9, 2017). None of them were fatal. In light of the environment provided at the overdose prevention site, this finding is consistent with evidence that consuming substances in a controlled, non-judgmental setting where individuals are not rushed is much safer than doing so alone while trying to evade police detection. Community advocates and frontline service providers have long reported that the criminalization of substance use has resulted in clandestine, rushed, and isolated usage, which leads to more overdoses and fatalities. Based on the data, this assessment is strongly supported.

In general, there was a downward trend in overdoses that ran counter the upward trend in visits to the site over time. This suggests the proportion of overdoses to number of visits is decreasing.

## Recommendations: Questionnaire Data Collection

1. Reduce general possibility of options from free-hand inputs to selectable items within groups. This would make classification, grouping, and analysis easier, while removing subjectivity.
2. Include dates to allow for data analysis in conjunction with other data sets.
3. Keep questionnaire brief (no longer than two minutes to complete) to encourage participation.
4. Suggested additional information to collect:
  - a. More granular demographic data: sex, gender, age, socioeconomic status, housing status, ethnicity
  - b. Consumption history: what individuals have consumed in the last year out of a base group of macro drugs
  - c. What individuals intend on consuming that day out of a base group of macro drugs

- d. Awareness of the presence of fentanyl/carfentanil in consumed substance (Y/N)
- e. Test results (fentanyl/carfentanil) of substance individual is consuming

## Revised Questionnaire

Based on our analysis and work with questionnaire data collected at the Downtown Eastside Market, we revised the contents and structure of the questionnaire to facilitate better information gathering and management for future analyses. The template below is just one suggested format using the existing structure of the questionnaire and does not include some of the recommendations outlined above.

Thank you for taking the time to complete this short questionnaire. The answers you provide will help us understand the reasons why people are purchasing products so that we can best serve the community. We would like to remind you that your answers will be kept strictly confidential and will not be traced back to you in any way. Please answer the questions as accurately as possible and do not hesitate to ask for help. If you feel uncomfortable answering any questions, just skip them.

Date: \_\_\_\_\_

### 1. Do you have any medical diagnoses (from a doctor or other health care provider)?

*Check all that apply:*

- |   |                                       |   |
|---|---------------------------------------|---|
| <input type="checkbox"/> anxiety          | <input type="checkbox"/> chronic pain | <input type="checkbox"/> HIV                                      |
| <input type="checkbox"/> arthritis        | <input type="checkbox"/> COPD         | <input type="checkbox"/> panic attacks                            |
| <input type="checkbox"/> asthma           | <input type="checkbox"/> depression   | <input type="checkbox"/> schizophrenia / schizoaffective disorder |
| <input type="checkbox"/> bipolar disorder | <input type="checkbox"/> fibromyalgia | <input type="checkbox"/> sleep disorder                           |
| <input type="checkbox"/> cancer           | <input type="checkbox"/> hepatitis C  | <input type="checkbox"/> back / spine injury or disorder          |
| <input type="checkbox"/> other: _____     |                                       |   |

### 2. Which substances do you currently use?

*Check all that apply:*

- |                                       |  |   |
|---------------------------------------|--|---|
| <input type="checkbox"/> alcohol      | <input type="checkbox"/> (meth)amphetamine | <input type="checkbox"/> marijuana / cannabis |
| <input type="checkbox"/> opiates      | <input type="checkbox"/> cocaine           |   |
| <input type="checkbox"/> other: _____ |  |   |

### 3. Why do you believe you use the substance(s) you listed above?

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4. Are you trying to stop using any of the substance(s) listed above?

☐ Yes ☐ No

If yes, which methods are you using?

*Check all that apply:*

- |                                       |  |   |
|---------------------------------------|--|---|
| <input type="checkbox"/> abstinence   | <input type="checkbox"/> peer support / meetings | <input type="checkbox"/> suboxone             |
| <input type="checkbox"/> counselling  | <input type="checkbox"/> kratom                  | <input type="checkbox"/> marijuana / cannabis |
| <input type="checkbox"/> rehab        | <input type="checkbox"/> methadone               | <input type="checkbox"/> physical activity    |
| <input type="checkbox"/> other: _____ |  |   |

5. Do you feel like marijuana could be an alternative to your current substance use?

☐ yes ☐ no

If yes, how?

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6. How much do you know about kratom?

- ☐ nothing / never heard of it
- ☐ I've heard of it, but don't know much
- ☐ I've learned about it from online sources / newspaper / a friend / etc.
- ☐ I use it or have used it

What do you know about it?

---

7. What did you purchase with us today?

*Check all that apply:*

- |                                    |                                  |                                   |
|------------------------------------|----------------------------------|-----------------------------------|
| <input type="checkbox"/> bud/grass | <input type="checkbox"/> edibles | <input type="checkbox"/> capsules |
| <input type="checkbox"/> CBD       | <input type="checkbox"/> kratom  |                                   |

## Thank You

Thank you to the Overdose Prevention Society, along with our Data for Good members, sponsors, and donors for making this report possible. It was a privilege to collaborate with such inspiring and dedicated frontline volunteers and health service providers playing such a critical role amid a national health crisis. We hope their work in saving lives will continue and that they, along with other peer-led organizations, will be supported by local and regional governments in service of that goal.



Overdose Prevention Society co-founder Sarah Blyth (centre) with Data for Good volunteers, January 2018



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